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To: Clerks Office <clerks@guamlegislature.org>
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Bcc: Tina Muna Barnes <tinamunabarnes@gmail.com>

09-16-19	8:08 AM	09-16-19	CCU Meeting Packet.*	Consolidated Commission on Utilities

Sinseru yan Minagåhet,

Office of the Speaker • Tina Rose Muña Barnes
Committee on Public Accountability, Human Resources & the Guam Buildup

35th Guam Legislature
I Mina'trentai Singko na Liheslaturan Guåhan

Guam Congress Building | 163 Chalan Santo Papa | Hagatna, GU 96910
T: (671) 477-2520/1
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35GL 19-1015
Speaker Tina Rose Muña Barnes
SEP 16 2019
Time 10:52 ( )AM ( )PM
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Message

To: Governor Lou & Speaker Tina

Pursuant to P.L. 31-233, attached are the meeting materials including minutes and resolutions that were presented, discussed and ratified at the following CCU/GPA/GWA meetings:

July 18, 2019
July 23, 2019
August 9, 2019
August 27, 2019
August 29, 2019
September 4, 2019

Respectfully,
B. Lou Sablan
CCU Board Secretary

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CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

Special Board Meeting
CCU Conference Room, Gloria B. Nelson Public Service Building
9:00 a.m., July 18, 2019

AGENDA

1. **CALL TO ORDER**

2. **COMMUNICATIONS**
   - 2.1 **Public Comments (2 min. per person)**

3. **NEW BUSINESS**

4. **ANNOUNCEMENTS**
   - 4.1 **Next CCU Meetings: GPA WS; Thurs., July 18 @ 4:30 p.m.; July 23 – CCU Regular Monthly Mtg. @ 5:30 p.m.**

5. **EXECUTIVE SESSION**
   - 5.1 **Personnel Matter: GWA CFO Interviews / Appointment**

6. **ADJOURNMENT**

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

Regular Board Meeting
CCU Conference Room, Gloria B. Nelson Public Service Building
5:30 p.m., July 23, 2019

AGENDA

1. CALL TO ORDER

2. APPROVAL OF MINUTES

3. COMMUNICATIONS
   - 3.1 Public Comments (2 min. per person)

4. GWA
   - 4.1 New Business
   - 4.1.1 GM Report
   - 4.1.2 Financials
   - 4.1.3 Resolution No. 38-FY2019 Approval of Fire Hydrant (Dry Barrel) Replacement Project
   - 4.1.4 Resolution No. 39-FY2019 Approval of Contract with Total Chemicals and JMI Edison Add'l Purchase of WasteWater Chemicals

5. GPA
   - 5.1 New Business
   - 5.1.1 GM Report
   - 5.1.2 Financials
   - 5.1.3 Resolution No. 2019-10 Diesel Fuel Oil #2 Contract
   - 5.1.4 Resolution No. 2019-11 Out of Service Inspection & Refurbishment of GPA Bulk Storage Fuel Tanks

6. OTHER
   - 6.1 Potential Ad Hoc CCU Committees
   - 6.2 CCU FOIA Responses
   - 6.3 GPA Drug Policy

7. ANNOUNCEMENTS
   - 7.1 Next CCU Meetings: GWA WS 8/20; GPA WS 8/22; CCU MTG 8/27

8. ADJOURNMENT

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

Regular Board Meeting
CCU Conference Room, Gloria B. Nelson Public Service Building
5:30 p.m., April 25, 2019

MINUTES

1. CALL TO ORDER

The Chairman called the CCU April 25, 2019 regular meeting to order at 5:30 p.m. He said all five (5) Commissioners were present. Others in attendance include:

Commissioners:

Joseph T. Duenas	CCU Chairman
Francis E. Santos	CCU Vice Chairman
Michael T. Limtiaco	CCU Secretary
Judith P. Guthertz	CCU Treasurer
Simon A. Sanchez	Commissioner

Executive Mgmt.:

Miguel Bordallo	GM / GWA
John Benavente	GM / GPA
Gilda Mafnas	CFO [A] / GWA
Melinda Mafnas	AGMO / GPA
John Cruz	AGMET / GPA
Tricee Limtiaco	AGMA / GPA
Chris Budasi	AGMA / GWA
Gilda Mafnas	CFO (A) / GPA
Cora Montellano	CFO [A} / GPA

Management & Staff:

Ron Topasna	O&M Mgr, Water Treatment / GWA
Patti Diego	Communications Mgr [A] / GPA
Zina Charfauros	Personnel Admin. / GWA HR
Ann Borja-Gallarde	Mgmt. Analyst / GWA Ex.Office
Joyce Sayama	Mgmt. Analyst / GPA Ex.Office
Lou Sablan	Board Secretary / CCU

Guest:

Angelica Perez	AM Insurance

2. APPROVAL OF MINUTES

The Minutes of February 26, 2019 was presented for approval.

Comm; Guthertz motioned to approve the Minutes subject to verification and written correction; second by Comm. Limtiaco. There was no further discussion or objection and the motion passed unanimously.

3. COMMUNICATIONS

3.1 Public Comments

GM Bordallo asked the Chairman if he could please make a statement. He thanked the board and especially the Chairman for their confidence, support and recognition. He said the recent media reports and commentary relative to the salary adjustment issue do not reflect the board's true intent of advancing the utilities and the suggestion of any ill intent or bad faith by anyone is simply ridiculous. He said unfortunately this is what is out there and however far from the truth it is, it is a distraction to him from the important work that needs to be done and while the board has not provided any direction on this issue pending advise from counsel. He added that as a professional he understands the process that needs to occur but nonetheless wants to publicly state for the record that he will return the bonus and pay amount that he received to date. He said he wanted to make sure that this is noted for the record. The Chairman acknowledged and thanked Mr. Bordallo for his candidness and his statement and added that this matter will be dealt with at a special meeting in the future.

4. GPA

4.1 New Business

4.1.1 GM Report

The GM said he provided his report at the GPA Work Session last week said he is open to any questions.

The Chairman said he had a question on the status of the bid for the new generation plant

The GM said 4 bidders have submitted and technical documents are being reviewed – the Committee will review and advise proponents by May 15th whether they've passed or failed. Prices are expected to come in on May 29 with public opening on June 3. After this phase the evaluation process and then by June-July there would be more firm findings and possibly approval, then forward to PUC. The GM said the final bid price includes several components other costs. More time is needed because figures provided would be run through a formula for calculations via a model that all proponents were provided.

Comm Sanchez reviewed the DSM report provided and asked status of fund balance for DSM. The GM said that average expenditure is about $100k per month and based on current fund balance it should run through the next 8 months. It was discussed that there is a resolution that was put on hold pending CCU / management decision on how to best fund DSM going forward – either via LEAC or other funding source.

GM Benavente gave CCU a couple of sheets that shows what portion of LEAC management anticipates DSM will impact. It was mentioned that DSM would incorporate $4M per LEAC period, to include expansion for Commercial program, non-profits and small businesses. Currently DSM supports only residential customers.

There was also discussion on the LEAC under recovery and the cost of oil which keeps going up. The cost of barrel now is $73 per barrel.

4.1.2 Financials

Acting CFO Montellano said March Financials show revenues $2M below forecast; kWh sales is still 4% behind forecast and 5% behind prior year. There's a strong correlation in May-June when the LEAC increase sales dropped tremendously and has not recovered. It was mentioned that the Navy continues to improve their system too and as our largest customer, it impacts sales.

Comm. Sanchez said his concern is when GPA moves to ULSD it makes it worse, even if we will be burning less of it with the new plant. At what point should GPA restart conversation about natural gas; this is a whole new process. GM Benavente said he will show the Commission a timeline relative to this issue and will share his thoughts with the Commission very soon – within the next month or two.

Under recovery is still $13.7M and anticipates $12M at the end of the LEAC period. It was mentioned that the Navy pays as they go – there is no LEAC with the Navy.

Comm Santos said due to we are ½ way into the year can CFO do Budget to Actual Report on every category so that discussions relative to needed adjustments can happen.

4.1.3 Resolution 2019-05 Relative to Increase of Renewable Portfolio Standard to 50% by 2035

GM Benavente read the resolution verbatim; it seeks approval to increase the Authority's Renewable Portfolio Standards [RPS] from 25% to 50% for the following reasons:

- GPA and CCU have discussed this move internally and at various public hearings since it signed the Phase II Renewable Energy Acquisition contracts for 120 MW of additional solar PV while at the same time launching Phase III IFB for an additional 40 MW;
- GPA has completed its Renewable Integration Study supporting the technical feasibility of integrating 50% of renewable energy into GPA's grid once the recommended projects are completed;
- GPA's renewable strategy has been to ride the technology capability curve up while riding the price cost curve down. Phase II Renewable Energy Prices are expected to be below current LEAC rates;
- Bill No. 80-35 (COR) moves to increase the Guam RPS (Public Law 29-62) from 25% to 50% of GPA net electricity sales by 2035; Bill 80-35 is sponsored by Senators Amanda Shelton and Clynt Ridgell.

This project is necessary and urgent. The Federal Investment Tax Credit declines from 30% in 2019 to 26% in 2020, 22% in 2021, and 10% in 2022. It was mentioned that the funding source would come from LEAC.

The GM said the RPS is a public policy and asked the Commission to support it. He said he is confident that GPA will be able to meet this threshold.

Comm. Guthertz motioned to approve Resolution 2019-05; second by Comm. Limtiaco.

Comm. Sanchez gave some background on the beginnings of the RPS matter beginning with discussions with late Sen. Ben Pangelinan. He said the intent is good and the only way to lower the cost or power in the future is to lower the use of oil for energy. The new generation plant will make this a reality and will have emissions that are in compliance with USEPA and will use less fuel than the existing units. The solar energy contracts that GPA has just signed this past year is half the current LEAC and comes with storage so this means GPA will use less fuel. Without this new generation plant, GPA cannot add more renewables. The old base load units are not never going to take GPA beyond the 25%. We are happy to report that we are ahead of schedule and this is why the CCU pays management bonuses because the decisions that you make are going to save money and move us towards renewables. This is continuing work that started 12 years ago and it is the only way to lower the cost of power.

Comm. Limtiaco asked if there are any incremental growth with renewables that can happen now before the new power plant – a 5-10% increase. He clarified that he is referring to going out for bid for additional renewables ahead of the new power plant before the critical area that needs the new power plant. GM Benavente said yes but it has to come with Phase III, the mode of operation today is quite challenging because CT's are needed in the daytime. There is 45 megawatts that are intermittent during the day. The key is some increment can be added but not significant, not before that new power plant is in place. The GM also added that some work on the 115KV lines need to be done before any more renewables are added.

GM Benavente said that there is still room to accommodate utility scale renewable maybe another 120-150 with energy storage.

It was noted that the phrase "subject to the review and approval of the PUC" is not in the draft resolution in Board books and there's no need for an Amendment

On the motion there was no further discussion or objection and the motion passed; the vote was unanimous.

5. GWA

5.1 New Business

5.1.1 <u>GM Report</u>

GM Bordallo reported on operational issues relative to production and distribution, the line servicing Mangilao was pulled and a new line was installed last night so there should be recovery in Mangilao reservoirs. He reported a spill in the Taigigao area which was repaired – this is the one Mayor Hoffman reported. GEPA was advised.

Comm. Sanchez asked am update of the various public outreach relative to the 5-year Financial Plan. He said the public meetings are scheduled for May 6-9 and will provide the Commission a schedule for the other commerce groups as soon as it is firm

The GM said Citi Group is going to be on island first week of May and the CCU can meet with him at your leisure.

There was discussion on the timeline for GWA's next bond issuance and the GM said the plan is to go for ratings in Sept. and closing in Nov/Dec timeframe. The GM said he plans to ask for the full amount and said GWA needs the money for the tanks.

5.1.2 Financials

This matter was not discussed.

5.1.3 Resolution No. 21-FY2019 Relative to Contract Renewal with Guam Pacific Enterprise and JMI Edison for the Additional Purchases of Submersible Cables, Temperature Sensors and Two (2) HP Booster Pump Motors

The objective of this resolution is to provide for adequate parts inventory for submersible cables and chlorination system booster pumps for GWA's water production facilities. Having the inventory on-hand is necessary to ensure that water system mechanical and electrical assets are replaced in a timely manner as part of normal production well and disinfection system operations and maintenance.

Bid Summary

IFB 2015-08 Submersible Cables, Booster Pumps and Sensors

Guam Pacific Enterprise							
Item No	**Description**	**Qty**	**UOM**	**Unit Cost**	**Total Cost**	**Est Annual Cost**	**Est 3 Year Cost**
1.0	Temperature Sensor 6"	10	each	$695.00	$6,950.00		
1.1	Temperature Sensor 8"	10	each	$695.00	$6,950.00	$13,900.00	$41,700.00
3.0	Submersible Electrical Cable #4 AWG CU, 4 Wire (Note: to be used on 50/60 HP Submersible Motors)	1000	foot	$11.21	$11,210.00		
3.1	Submersible Electrical Cable #1 AWG CU, 4 Wire (Note: to be used on 75/100 HP Submersible Motors)	4000	foot	$22.22	$88,880.00	$179,860.00	$539,580.00

3.2	Submersible Electrical Cable #2/0 AWG CU, 4 Wire (Note: to be used on 125/150 HP Submersible Motors)	3000	foot	$26.59	$79,770.00		
GPE Est Cost					**$193,760.00**	**$193,760.00**	**$581,280.00**
JMI Edison							
Item No	**Description**					**Est Annual Cost**	**Est 3 Year Cost**
2.0	2 HP Pump and Motor CR3-10 A-FGJ-E-HQQE 230/460V	35	each	$1,409.30	**$49,325.50**	**$49,325.50**	**$147,976.50**
						Est Annual Cost	**Est 3 Year Cost**
TOTAL EST COST						**$243,085.50**	**$729,256.50**

Total Amount Expensed

PO No	PO Amount	Vendor	PO Date	FY	Funding Source
298852	$153,670.00	GPE	12/26/2015	16	PW 09-02 Water Wells
298991	$202,480.00	GPE	2/8/2016	16	PW 09-02 Water Wells
300011	$33,530.00	GPE	10/6/2016	17	PW 09-02 Water Wells
301130	$185,665.00	GPE	8/1/2017	17	Revenue Funded
GPE TOTAL	**$575,345.00**				
298758	$13,828.59	JMI	12/4/2015	16	PW 09-02 Water Wells
298851	$23,958.10	JMI	12/29/2015	16	PW 09-02 Water Wells
300311	$22,548.80	JMI	12/14/2016	17	PW 09-02 Water Wells
302887	$35,232.50	JMI	12/13/2018	19	Revenue Funded
302887 (Amendment 1)	$43,688.30	JMI	12/21/2018	19	Revenue Funded
JMI TOTAL	**$139,256.29**				
IFB 2015-08 TOTAL	**$714,601.29**				

Estimated Purchase Quantity and Cost for 2 Year Contract Renewal

Guam Pacific Enterprise	Description	Unit Cost	2 Year Est Qty	Est 2 year Cost

3.1	Submersible Electrical Cable #2/0 AWG CU, 4 Wire (Note: to be used on 125/150 HP Submersible Motors)	$26.59	8000	$212,720.00
3.2	Submersible Electrical Cable #4 AWG CU, 4 Wire (Note: to be used on 50/60 HP Submersible Motors)	$11.21	8000	$89,680.00
3.3	Submersible Electrical Cable #1 AWG CU, 4 Wire (Note: to be used on 75/100 HP Submersible Motors)	$22.22	8000	$177,760.00
Guam Pacific Enterprise 2 Year Estimated Cost				**$480,160.00**
Contingency 10%				$48,016.00
Total Requested Funding				**$528,176.00**

JMI Edison	Description	Unit Cost	2 Year Est Qty	Est 2 year Cost
2.0	2HP BPM	$ 1,409.30	80	**$112,744.00**
Contingency 10 %				$11,274.40
Total Requested Funding				**$124,018.40**

The cost of the contract is noted below and will be funded with revenue funds. Purchases over the 2-year contract extensions are required for on-going production well and disinfection system operations and maintenance.

Contract Renewal 2 years	GPE Contract Renewal with 10% Contingency	$528,176.00
	JMI Contract Renewal with 10% Contingency	$124,274.40
CCU Approval		**$652,194.40**

Comm. Sanchez motioned to approve Resolution 21-FY219 second by Comm. Limtiaco. There was no further discussion or objection and the motion passed unanimously.

5.1.4 Resolution No. 22-FY2019 Relative to Fund Increase for the Agat-Santa Rita Wastewater Treatment Plant Construction Project

GWA has executed multiple Change Orders to the project's scope of work (SOW) and anticipates additional Change Order(s) to address necessary improvements, including enhancements to the main electrical service, additional paving to the existing entrance road, and other miscellaneous modifications recommended by GWA Operations, will be required. GWA management is seeking CCU approval to increase the funding authorization for the project via approval of this resolution.

The construction activities are located in the Village of Agat across from the Navy Camp Covington.
The funding authorization will increase an additional Five Hundred Forty Thousand Dollars ($540,000.00) to bring the total authorized funding to Fifty-Nine Million Five Hundred Fifty Thousand Dollars ($59,550,000.00). The funding for this project will be from the Bond Funds under the line items CIP WW 11-08 "Agat/Santa Rita STP Replacement", System Development Charges and Internally Funded CIP, where applicable. GWA expects the contractor to be completed with all work by June 2019.

Comm. Sanchez motioned to approve Resolution 22-FY2019, second by Comm. Guthertz. There was no further discussion or objection and the motion passed. The vote was unanimous.

5.1.5 Resolution No. 23-FY2019 Relative to Change Order No. 8 for the Agat-Santa Rita Wastewater Treatment Plant Upgrade Construction Management Contract

The construction contractor, Sumitomo Mitsui Construction Company (SMCC), advised GWA that project completion must be extended to the end of June 2019. The construction management change order(s) for CM services will allow for a continuity of services as it relates to any construction extension at the new Agat-Santa Rita WWTP Upgrades project due to delays in construction completion. Currently the remaining major items to be completed are the equalization basin and maintenance building. The project location is at the New Agat Santa Rita Wastewater Treatment Plant in Agat.

The fees for CM services is approximately One Hundred Twenty-Five Thousand Dollars ($125,000.00) a month, therefore GWA management is seeking approval to increase authorized funding for Two Hundred Fifty Thousand Dollars ($250,000.00) for the months of May and June 2019. Funding for Change Order to GHD will be from any available bond funds under the line item - WW 11-08 "Agat/ Santa Rita STP Replacement", System Development Charge funds, Internally Funded CIP funds as well as Liquidated Damages of $5,000 per day from the contractor beginning September 1, 2018.

Comm. Sanchez motioned to approve Resolution 23-FY2019, second by Comm. Guthertz. There was no further discussion or objection and the motion passed unanimously.

5.1.6 Resolution No. 26-FY2019 Relative to Change Order No. 2 for Asan Springs Rehabilitation Design Project

If approved, Resolution 26-FY2019 will authorize additional design and environmental services that are necessary for GWA to complete its on-going project to improve water distribution system

functionality and reliability for areas serviced by Asan Springs. The project's design scope is on-going, however, following the discovery that about one-third of the facility sits on property owned by the National Park Service, a more detailed condition assessment of the site and discussion with federal agencies, have revealed that additional environmental assessment and biological investigation are required to determine the environmental impact of the project. This will include biological surveys and investigations to determine the presence of any endangered species or their habitats exist on the site. These environmental requirements have increased due in part to the use of federal lands on the project, making the additional work necessary for the construction of the project.

Due to the size and complexity of the project, GWA finds that it is in the best interest of the Authority to have the current engineering consultant conduct the additional work so as to expedite the design package preparation. Having the current consultant handle the additional work also flattens the learning curve, given the design consultant is already are familiar with the site, entities involved and the system improvement needs.
The proposal is still being negotiated but Management estimates the cost for the additional design services not to exceed the latest proposal of Three Hundred Eighty-Two Thousand Five Hundred Ninety-Five Dollars ($382,595.00). The source of funding will be from Bond Funds under CIP line item PW 05-15.

The design schedule will extend to October 2019, however, there are potential land acquisition issues for the site thus additional time may be needed. GWA will not know until the property conflicts are resolved.

Comm. Sanchez motioned to approve Resolution 26-FY2019, second by Comm. Limtiaco. There was no further discussion or objection and the motion passed unanimously.

5.1.7 Resolution No. 27-FY2019Relative to the Re-evaluation and Implementation of the Revised GPWA Drug and Alcohol-Free Workplace Policy

The GPWA Drug and Alcohol-Free Workplace Policy was approved by the CCU on 26 September 2017 for implementation on 01 October 2017. On 10 October 2017, GWA Legal Counsel received Attorney General's Opinion Memorandum, dated 06 October 2017 stated, random drug testing for *all government of Guam employees,* without regard to the nature of the employee's duties and specific violation intended to be addressed, will offend constitutional protections against warrantless searches.

GWA Management has confirmed that the Authority's Legal Counsel is sufficient in determining inclusion of safety-sensitive positions to its current list of Testing Designated Position(s) (TDP), in accordance with federal guidance (Substance Abuse and Mental Health Services Administration's (SAMHSA) 2013 Guide for Selection of TDPs, dated 06 May 2013).

Accordingly, GWA Legal Counsel has reviewed and updated the list of safety-sensitive TDP to be used for determining which employees are subject to random drug testing. The list includes 110 different positions comprised of 287 employees or approximately 77% of the current GWA workforce;

Public Law 35-5, Title 9 GCA, Chapter 67 Guam Controlled Substance Act, Article 1, Definitions (t) lists and defines Marijuana as a controlled substance, and GWA still prohibits the use of cannabis by employees in the Drug-and-Alcohol Free Workplace Policy. Therefore, the objective of the resolution is to request that GWA be allowed to move forward and implement its Revised GWA Drug and Alcohol-Free Workplace Policy and to authorize the Legal Counsel through documented support to add, delete and/or revise its TDP list as necessary, to effectively implement its Drug and Alcohol-Free Workplace Policy. It is necessary and urgent to protect the public health and safety in the provision of utility services we provide.

GWA further requests for the CCU's support and approval to transition on its own (away from the DOA process) to seek drug testing, laboratory and medical review officer services to effectively implement the GWA Drug and Alcohol-Free Workplace Policy.

Comm. Santos asked clarification for phrase "away from the DOA process" and management explained that currently DOA does the testing for GWA. It's probably cheaper with DOA but GWA's testing is at DOA's their schedule.

Comm. Guthertz motioned to approve Resolution 27-FY2019, second by Comm. Santos. There was no further discussion or objection and the motion passed. The vote was unanimous.

6. ANNOUNCEMENTS

6.1 Next CCU Meeting

The Chairman said that there will be a special meeting in May to deal with a special issue that the Attorney General recently addressed with the Commission, possibly before one of the CCU work sessions. In addition, the GWA work session in May is on May 21; the GPA work session on May 23 and the regular CCU monthly meeting on May 28.

7. ADJOURNMENT

There was no further business to bring before the Commission, the Chairman called for adjournment.

Comm. Santos motioned to adjourn the meeting; Comm. Limtiaco seconded.

It was 7:20 p.m.

\\s\\
Bls

Attested:

_____ _____

JOSEPH T. DUENAS, Chairman MICHAEL T. LIMTIACO Secretary

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

Regular Board Meeting
CCU Conference Room, Gloria B. Nelson Public Service Building
5:30 p.m., May 28, 2019

MINUTES

1. CALL TO ORDER

The Chairman called the CCU May 28, 2019 regular monthly meeting of the Consolidated Commission on Utilities to order at 5:38 p.m. He said all five (5) Commissioners were present. Others in attendance include:

Commissioners:

Joseph T. Duenas	CCU Chairman
Francis E. Santos	CCU Vice Chairman
Michael T. Limtiaco	CCU Secretary
Judith P. Guthertz	CCU Treasurer
Simon A. Sanchez	Commissioner

Executive Mgmt.:

Miguel Bordallo	GM / GWA
John Benavente	GM / GPA
Melinda Mafnas	AGMO / GPA
John Cruz	AGMET / GPA
Tricee Limtiaco	AGMA / GPA
Chris Budasi	AGMA / GWA
John Kim	CFO / GPA
Gilda Mafnas	CFO (A) / GWA
Kelly Clark	Legal Counsel / GWA
Graham Botha	Legal Counsel / GPA

Management & Staff:

Paul Kemp	AGM Compliance & Safety / GWA
Heidi Ballendorf	Communications / GWA
Ron Topasna	O&M Mgr, Water Treatment / GWA
Tom Cruz	Chief Engineer / GWA
Vince Pangelinan	GWA
Vince Leon Guerrero	Outside Counsel / GPWA
Dave Fletcher	GWA
Ann Borja-Gallarde	Mgmt. Analyst / GWA Ex.Office
Lou Sablan	Board Secretary / CCU

Guest:

George Castro	Court Reporter
Mark Miller	Commissioner / PUC

Nestor Licanto Reporter / KUAM

2. APPROVAL OF MINUTES

The Minutes of the CCU Special Meeting on May 10, 2019 was presented for approval. He said this meeting was recessed and resumed at different dates and times. He asked the body to review and said he will entertain a motion.

Meanwhile, the Chairman asked a clarifying question of legal counsel's Clark and Botha relative to action taken at the special meeting, The question was that if there's a question in the Minutes in terms of a motion that was made and reflected in the minutes, can the minutes be amended by making another motion to amend or should the Commission make a new motion in open session at this current meeting to address the clarification

Comm. Limtiaco further clarified that during the Special Meeting of May 10 he made a motion to release the minutes of executive session but did not cite the date of the meeting in question although in context of the discussions of the entire meeting it is clear that the related meeting was that of Nov. 27.2018. His question is does he need to make a motion that clearly specifies that he was referencing the executive session meeting minutes of 11/27/18.

Counsel Kelly responded that this question should be directed to outside counsel Vince Leon Guerrero.

In response Counsel Leon Guerrero opined that a new motion should be made to clarify this point and yes it could be made at this current meeting.

Comm. Limtiaco then stated [and put in context] that relative to the motion that he would like to proper would be a motion to release all minutes, recordings and all documents that were discussed at the Ex. Session Meeting of the CCU Meeting of Nov. 27, 2018. The motion was second by Comm. Guthertz.

In discussion to the motion, Comm. Sanchez asked what constitutes Minutes. Counsel Kelly responded that it could be recorded audio, hand written or transcribed. If under executive session, the audio recordings are the minutes. The law does not require written minutes for non-litigation discussions such as personnel matters and that the recording suffices for minutes, in this instance.

Comm. Sanchez then asked if a requestor FOIA'd for documents, what would constitute documents? Counsel Kelly responded that documents would be any handouts that were, reviewed, referenced, looked at or circulated during the executive session discussion

Comm Duenas asked what does it mean when we say Minutes of the meeting? Counsel Kelly said it depends on what is produced at the meeting - if there was a recording only then the recording would be the Minutes; if there was a recording and a written synopsis / transcription of the meeting then it would be both the recording and the written synopsis / transcription. There was discussion which has greater weight the recording or the written synopsis and both counsel's Clark and Botha said it would be the recording because the transcriber could make an error when preparing the transcription.

Comm. Sanchez asked counsel's Clark and Botha who issued the affidavit at the Nov. 27, 2018 meeting recommending the Commission to go into executive session. Both counsel Clark and Botha said they do not remember.

Comm Duenas asked what does the affidavit mean and stated there was nothing on the affidavit that says we can or cannot discuss salaries in executive session. It's usually only a general statement saying the Commission can move to executive session to discuss either litigation or personnel matters or both.

Comm. Sanchez said he is interested in a written legal opinion from the counsel who wrote the affidavit for the Nov. 27, 2018 meeting as to why go into executive session. What is their interpretation of the law and why he issued an affidavit? Chairman Duenas asked both counsels Botha and Kelly to provide their respective opinions.

Comm. Sanchez mentioned that prior CCU counsel opined that you must discuss evaluations only in executive session and salary or monetary matters in open session. Prior counsel provided an affidavit to Comm. Sanchez [then CCU Chair] with these specific instructions. Comm. Sanchez said there is a slightly different view from a previous colleague that is very specific. In the meeting of Sept. 2014 your previous colleague provided an affidavit for this meeting which was very specific and the minutes of the Sept. 2014 meeting also reflects his instructions where the evaluation was conducted in executive session and the salary was discussed in open session. Comm. Sanchez said there's an obvious difference of opinion even from our own counsels. Both counsels Kelly and Botha were present at the Nov 27th meeting and neither offered guidance not to discuss salary in executive session. Comm. Sanchez said to be fair to both counsel Kelly and Botha – he asked them what is their view of the law relative to discussion of personnel matters and requested for their written legal opinion.

Comm. Guthertz said she felt compelled to comment that in today's paper there was article about a 2014 opinion made by a former CCU legal counsel who provided an opinion to the Commission about personnel matter discussions in executive session, that only evaluations should be discussed in private and salaries must be discussed in public. Comm. Guthertz said that this is a difficult experience which was totally avoidable if that earlier opinion would have been made available to the Commission and she certainly wish it had. She would like to state for the record that this earlier opinion was not made available to her and if it had, this entire issue would have been avoided. Comm. Sanchez clarified that former CCU legal counsel did not provide an opinion but rather an affidavit for an executive session meeting for a CCU meeting held on Sept. 2014 that dealt with personnel matter and in that affidavit, he specified that only evaluations must be discussed in executive session and that salaries must be discussed in open session. Comm. Sanchez said Commission members who were present at that Sept 2014 meeting were advised and knew then. because that's what the Commission ended up doing as reflected in the Sept. 2014 meeting minutes.

Chairman Duenas said he did not know about the email from the former CCU legal counsel to Comm. Sanchez. Comm. Sanchez stated that the members of the Commission who were present at that Sept. 2014 meeting were definitely aware of then GWA legal counsel Sam Taylor's guidance which specifically states to discuss evaluations in executive session and salary in open session.

On motion made by Comm. Limtiaco and second by Comm. Guthertz to release the audio recording, minutes and all documents discussed at the Ex.Session of the CCU meeting held on Nov. 27, 2018. The vote passed with 4-ayes, and 1 nay. For the record the vote was Sanchez – yes, Limtiaco - yes; Duenas – no; Guthertz – yes and Santos - yes.

Relative to the Minutes of the CCU Special Meeting of May 10, 2019, Comm. Limtiaco motioned to approve the Minutes subject to verification and written correction; second by Comm. Guthertz. The motion passed unanimously.

3. COMMUNICATIONS

3.1 Public Comments - None

4. GWA

4.1 New Business

4.1.1 GM Report

4.1.2 Financials

The financials were not discussed at this meeting.

4.1.3 Resolution No. 24-FY2019 Change Order Baza Garden Wastewater Cross-Island Pumping and Conveyance Phase II Construction Contract

This resolution seeks CCU approval to increase the project fund authorization to address an unresolved claim from the contractor involving additional excavation necessary to meet/hit hard stable ground surfaces and filling up of flowable fill at the new SPS that was deemed by the contractor as additional work. The contractor ultimately moved forward with completing the new SPS so that the project can progress however the claim stayed unresolved. GWA's project engineers/Chief Engineer have further reviewed the claim and agree that additional work and material were used and as such approve the claim. The fund authorization to date is insufficient to work towards executing a Change Order thus GWA management is seeking CCU approval to increase project fund authorization.

Work related to the pending Change Order Proposal is part of the new Windward Hills SPS with anticipated completion of June 2019

GWA management is seeking CCU approval for additional funding for Change Order Proposal related to Phase II contract in the amount of Fifteen Thousand Two Hundred Twenty-Two Dollars and Twenty-Five Cents. ($15,222.25). The approval of this resolution will bring the total authorized funding for Phase II to Six Million Three Hundred Seventy-Two Thousand Ninety-Three Dollars and Three Cents ($6,372,093.03). The funding source is from wastewater bond funds applicable to the project.

Comm. Santos motioned to approve Resolution 24-FY2019, second by Comm. Guthertz. There was no further discussion or objection and the motion carried unanimously.

4.1.4 Resolution No. 25-FY2019 Change Order Baza Gardens Wastewater Cross-Island Pumping and Conveyance Construction Management Contract

The construction management change order(s) for CM services will allow for a continuity of services as it relates to any construction extension at the Baza Gardens Pump Station, Route 17 / Route 6 [wastewater conveyance project] due to contractor issues. The construction contractor of Phase III, Sumitomo Mitsui Construction Company (SMCC), has submitted to GWA time extension requests stating that the delay is due to inclement weather and sludge removal approximately 3,080 cubic yards were hauled and transported to Layon Landfill that push the completion of the project through June 2019.

GWA management still seeks CCU approval of additional funding not to exceed the amount of One Hundred Sixty Thousand Dollars ($160,000.00) for the extended contract performance period through July 2019 including documentation of the project close out. Notwithstanding the fund increase request GWA will be negotiating down the fee proposal given the level of staffing and construction activities will ramp down towards the end of the construction period.

The approval of the One Hundred Sixty Thousand Dollars ($160,000.00), which GWA will view on a Time and Materials basis, will bring the total authorized funding for the Construction Management contract to Three Million Three Hundred Thirty-Two Thousand Five Hundred Sixty-Four Dollars and Fifty-Nine Cents

($3,332,564.59). Funding will be from any available bond funds under the line item - WW 11-03 "Baza Gardens STP Replacement", and Internally Funded CIP funds as well as Liquidated Damages of $3,000 per day from the contractor. The actual construction completion is projected to be by June 2019 however GWA anticipates the CM services will extend to July 2019.

Comm. Guthertz motioned to approve Resolution 25-FY2019, second by Comm. Limtiaco. There was no further discussion or objection and the motion passed unanimously.

4.1.5 Resolution No. 28-FY2019 Change Order No. 1 ConstrMgmt Services Contract for the GWA SCADA System for Water &WW Facilities Phase A-1

The project objective is primarily to install communication equipment on site to allow communication with Fadian SCADA servers. This also includes installation of instrumentation such as pressure and flow sensors as well as intrusion switches on site to record site conditions along with other existing instruments.

Due to contractor delays and compliance issues with contract requirements, GWA has negotiated a remedy to extend the contractor's project completion date contingent on the contractor agreeing to a list of conditions which includes a deductive change order on the construction contract. The deducted amount from the construction contract is used here to pay for additional CM services needed for the extended construction time as well as additional efforts needed to ensure contractor's execution of and compliance with contract requirements. This Change Order will extend contract completion date to 2019 JAN 30.

This project encompasses the wells at the following locations:

- Wells A-01, A-03, A-05, A-06, A-23, A-25, A-29, A-31, A-32, M-17B, M-20A;
- Route 16 Sewer Pump Station;
- Fujita Sewer Pump station; and
- Hagatna Wastewater Treatment Plant.

Original CM Contract was $515,631.00. This Change Order No. 01 will add $383,589.00; bringing the total contract value to $899,220.00. GWA management also seeks CCU approval of a 10% contingency to the original contact price, or $51,563.10 to bring the total authorized amount to Nine Hundred Fifty Thousand Seven Hundred Eighty-Three Dollars and Ten Cents ($950,783.10). The funding source will come from CIP line item EE 09-09 SCADA Improvements – Phase 4.

Comm. Guthertz motioned to approve Resolution 28-FY2019 second by Comm. Santos. There was no further discussion or objection and the motion carried; the vote was unanimous.

Comm. Limtiaco asked what was being deducted the GM responded that the scope of work is the same but a couple of the design elements were eliminated and will be handled under another design contract for the reservoir project when ready. The contract price was reduced but minor change in the design changes.

On the motion there was no further discussion or objection and the motion carried unanimously.

4.1.6 Resolution No. 29-FY2019 Change Order Yigo and Astumbo Reservoir ConstrMgmt Contract

The objective of the change order is to continue the construction management services for the Yigo reservoirs site along Route 1 near the entrance to Anderson Air Force Base and the Astumbo reservoir is located off Ysengsong Road on Chalan Paluan, and increase funding to the contract. The continued services are required due to delay by the contractor (Pernix) in completing the project. The Contractor

has agreed through a Memorandum of Understanding to pay for the additional construction management cost for the duration of the project until final completion.

The Yigo and Astumbo Tank Construction project are Court Ordered thus the urgency is to complete the project as soon as possible but maintain adequate Construction Management oversight.

GWA and the construction management firm has negotiated the cost of One Hundred Twenty-Three Thousand One Hundred Ninety Dollars ($123,190.00) to extend the services to August 16, 2019 for both sites. The cost is on a time and material basis. If the project finishes before the August 16, 2019 deadline, any unused portions will result in a deductive change order. The funding for this project will be from the bond funds under the line item - PW 09-11 "Water System Reservoirs 2005 Improvements" and PW 12-05 "Tank Major Repair Yigo #1, Mangilao #2, Astumbo #1". The funding sources will be replenished by money received from the contractor through a deductive change order from the contractor's contract.

The construction management services will continue up until August 16, 2019. Should the contractor delay the project past the projected August 16, 2019 deadline, GWA will negotiate to extend the construction management contract. Cost will be covered by the contractor.

Comm. Sanchez motioned to approve Resolution 29-FY2019 second by Comm. Guthertz.

In discussion Comm. Sanchez asked clarified on resolution line 29, page 53 of Board Books if cost goes beyond the $123k or August 16, 2019 completion date, the contractor pays the difference? GM Bordallo confirmed yes.

On the motion there was no further discussion or objection and the motion carried unanimously.

4.1.7 Resolution No. 30-FY2019 Change Order No. 4 Central Guam Reservoirs Design

The objective of the change order is to authorize additional design services that are necessary for GWA to improve water distribution system functionality and reliability for service areas associated with the Hyundai, Pulantat/Manenggon, Chaot No. 2, Tamuning No. 1 (Airport), Tumon No. 1 (Nissan), and Piti reservoir. The following are part of this proposed change order:

Task A: Design changes to install a new pump controller unit at the new Hyundai Tank Booster Pump Station.
Task B: Design changes to the Chaot No. 1, Chaot No. 2, and Agana Heights Reservoirs SCADA.
Task C: Programming of the Chaot No. 1, Chaot No. 2, and Agana Heights Reservoirs SCADA.
Task D: Programming of the Manenggon, Tamuning No. 1 (Airport), and Piti Reservoirs SCADA.
Task E: Tamuning No. 1 (Airport) Reservoir - Tiyan Booster Pump Station, Sewer Line Rehabilitation, and Water Line Abandonment.
Task F: A-23 and A-25 (Serves Chaot and Agana Heights Reservoir) GAC System Additional Design.
Task G: Manenggon Reservoir Access Pump Station Additional Design.
Task H: Additional Structural Design to Increase Tamuning No. 1 Reservoir (Airport) from 2 Million Gallon Capacity to 3 Million Gallon Capacity.

GWA finds that it is in the best interest of the agency that the current engineering consultant conducts the additional work so as to expedite the design package preparation and provide cost savings given the design consultant is already are aware of the system improvement needs.

The cost for the additional design services is $200,458.00. The funding source will be from CIP line item PW 09-11 Water System Reservoirs 2005 Improvements and EE 09-09 SCADA Improvement – Phase 4. If

the Change Order is approved, the design schedule will have the final tank design tasks completed by December 2019; however, the date may be adjusted if new issues arise.

Comm. Santos asked the status of the airport project and the GM said he is waiting the GIAA attorney to review and get back to GWA.

Comm. Limtiaco asked if the design work being proposed already completed the GM said no – some still need to be completed. The design was taken up to a certain level and this contact will add the SCADA component.

Comm. Santos asked if the original contract was not completed. There was discussion on why GWA allows contractors to come back for more work if they cannot complete a project the first time. It was discussed that these projects were supposed to be completed in 2017. The GM explained that management utilizes the contract mechanisms in place in order to get the performance needed. Management worked with the bonding company to come to resolution. Management felt their needs were met and the personnel involved were changed out and they [the contractors] stepped up their end.

Comm. Santos motioned to approve Resolution 30-FY2019 second by Comm. Guthertz. There was no further discussion and the motion passed unanimously.

4.1.8 Resolution No. 31-FY2019 Approval of the Chlorine Bid Under PUC Contract Review Protocol

If approved Resolution 31-FY2019 will provide sufficient supply of liquid chlorine used to treat and disinfect GWA's drinking water in accordance with the Safe Drinking Water Act and as required by federal and local laws and regulations.

The purpose of this procurement and the use of product (liquid chlorine) supplied under this procurement are necessary for the protection of public health and safety, and are a mandatory and critical part of GWA's water operations, and therefore are inherently necessary and urgent. The chlorine purchased will be used at various GWA locations island-wide.

The three (3) Year contract cost is per the following:
150lbs. Chlorine Cylinder $618.00 each
1 Ton Chlorine Cylinder $6,097.78 each
Bid Specified amount estimated for 150lbs. is 1,260 cylinders Annually
Bid Specified amount estimated for 1 Ton is 12 cylinders Annually
Cost for 150lbs. Chlorine Cylinder $586.68/$778,680.00 Annually
Estimated Cost for 1 Ton. Chlorine Cylinder $6,097.78/$73,173.36 Annually

Total Cost $851,853.36 Annually
Total expenditure for the 3-year contract term is **$2,555,560.08**

The procurement of these essential treatment chemical is intended to be funded from revenues (O&M) and will be completed in three years.

Comm. Duenas asked if there was a current contract in place and the management confirmed yes.

Comm. Guthertz motioned to approve Resolution 31-FY2019 second by Comm. Santos. There was no further discussion or objection and the motion passed unanimously.

4.1.9 Resolution No. 32-FY2019 Ratification of Expenditures for Track Me Guam, LLC.

There is an ongoing need to maintain the fleet and fuel management software services which were provided under a previous Memorandum of Understanding, and GPA-led procurement for such services. The original contract for these services expired in January 2018, and GWA procured additional services for system access & data communication, also referred to as on-board vehicle diagnostics and GPS tracking, for proprietary fleet management devices already installed in active GWA Vehicles under a separate sole-source procurement.

An open competitive procurement is in process for fleet and fuel management services for GWA vehicles and is anticipated to be awarded shortly. However, the recurring monthly service charges prior to the issuance of the existing sole-source procurement were unauthorized, and GWA Management is requesting ratification of the existing procurement so that payment can be made.

The service has been provided for active GWA fleet vehicles in which the proprietary fleet management devices have already been installed and are used island-wide (Tracking Services). The amount GWA Management is seeking for ratification is $24,640.00 and will be revenue funded. This contract is on-going through FY2019.

Comm. Santos motioned to approve Resolution 32-FY2019 second by Comm. Guthertz.

In discussion it was mentioned that the procurement is sole source because of the proprietary nature of the equipment already in some of the vehicles. AGMA Budasi mentioned that GPA released another bid at the end of last FY that did not include GWA. It was mentioned that he will discuss this matter with GM Benavente to confirm the rationale for not doing dual procurement. Santos expressed that he is upset that GPA was not on board with GWA on this program stating that GPA and GWA should be one utility supporting the entire island.

Comm. Limtiaco asked if current solicitation was already released and AGMA Budasi confirmed yes – the bids are in already but the evaluation is still pending.

There was discussion on who is tracking the vehicles and the mechanism amongst the supervisory team for proactive use. GM Bordallo confirmed that management uses it proactively but not at the frequency to justify the expense. GWA does not have enough people so some managers use it proactively and some do not. Comm. Sanchez said perhaps this should be revisited to up the productivity since we have the tool it should be used.

Comm. Limtiaco mentioned that he saw bucket trucks at Gun Beach while running one Saturday morning and he noted license plates and reported it but to date have not received any feedback.

Comm. Duenas said that it is understood that not all procurement can be combined but for economies of scale it is possible to do so on some items and he strongly recommended to GM Bordallo to work together with GM Benavente to take advantage of volume purchase and lower pricing.

On the motion there was no further discussion and the motion passed unanimously.

4.1.10 Resolution No. 33-FY2019 Approval 1-yr Extension Indefinite Quantity Contract with Badger Meter, Inc. for Additional Purchase of Water Meters

The objective is to exercise the available one (1) year option period under the existing contract to authorize the purchase of additional water meters that are needed for meter replacements and to insure

there is adequate stock available to meet the requirements of the 2011 Court Order and new service applications.

GWA management is seeking CCU approval to exercise the one (1) year extension of the indefinite quantity contract with Badger Meter Inc. and for additional purchases under that contract extension. Price adjustments allowable under the terms of the contract have been proposed by Badger Meter and have been found to be reasonable by management. The project is necessary to keep sufficient meters and accessories in stock for operational needs, and for the on-going meter replacement program – the meters will be used to replace old and/or install new meters throughout GWA's systems.

Additional meter purchases are estimated to cost up to One Million Five Hundred Fifty-Nine Thousand Eight Hundred Eighty-Three and Nineteen Cents ($1,559,883.19) which brings the total authorized funding to Five Million Three Hundred Seventy Thousand Five Hundred Eighty-Eight Dollars and Twenty-Eight Cents ($5,370,588.28) under IFB 2015-13. GWA Management is still negotiating with Badger Meter Inc. for cost adjustments related to meters management believes should be replaced under warranty, and as such, the additional costs estimated do not reflect anticipated credit adjustments. The source of the funding for the purchase of additional water meters will come from Internally Funded Capital Improvement Projects and any other appropriate funds identified by finance.
The contract term is from February 23, 2019 through February 23, 2020.

Comm. Santos motioned to approve Resolution 33-FY2019 second by Comm. Guthertz.

Comm. Limtiaco wanted confirmation that the purchase order is for no guaranteed quantity and that the price is stable. GM Bordallo concurred that the purchase is for an indefinite quantity contract and the price only thing locked in is the price.

On the motion there was no further discussion or objection and the motion carried. The vote was unanimous.

5. GPA

5.1 New Business

5.1.1 GM Report

GM Benavente announced that he will be conducting employee briefings; when asked how often he does this he responded that he tries to do this twice a year or every 6 months. He said his presentation is about 120 pages long. Chairman said he wanted this info for the record because it is important to reach out to employees and not only for bad news.

Comm. Santos asked the status of GPA's Drug Workplace Policy and the GM said there is no change from the last update. Chairman Duenas said the former AG rendered an opinion citing the 4th amendment and that GPA cannot just randomly test everyone. There was discussion on research that GWA's counsel performed and opined that he found precedence and agreed with the former AG's opinion. As a result, GWA amended their Drug Workplace Policy and about 73% of their employees who fall under the Test Designated Positions [TDP] list and are subject to random testing the other 27% do not. GM Benavente said he will have GPA's counsel verify with the current AG on this matter. Comm. Santos said he would like GPA to get this done by the next meeting. It was mentioned that if GPA does not want to change its drug policy that's fine but please update the Commission.

GPA counsel Botha said that the previous AG rendered this opinion and she is not there anymore so it is his opinion that GPA is not in violation. GM Benavente said he will discuss this matter further with counsel to get the current AG's opinion and then action this matter accordingly.

5.1.2 Financials

GPA Financials were not discussed at this meeting.

5.1.4 Resolution 2019-06 Tank Farm New ULSD Pipeline System

If approved, Resolution 2019-06 will allow GPA to comply with USEPA's Consent Decree. The objective is for GPA to significantly reduce power plant emissions. GPA will comply with USEPA's requirement by procuring services for the design and construction of the Tank Farm New ULSD Pipeline System to supply ULSD oil to the Piti Tank Farm, and Power Plants TEMES 7, MEC 8 and MEC 9. The ULSD pipeline system consists of 8-inch, 12-inch, and 24-inch diameter pipes with supports/pedestals, pipe manifolds, valves, and pumping station to include motor, pumps, concrete roof, berms and pads. The 24-inch ULSD pipeline will be interconnected from the US Navy tie-in to tanks 1934 and 1935, the 12-inch pipeline will be interconnected from tanks 1934 and 1935 to the pumping station and the 6-inch pipeline will be interconnected from the pumping station to the Power Plants TEMES 7, MEC 8 and MEC 9. The ULSD pipeline system will be operated and maintained under USEPA and American Petroleum Institute (API) guidelines and regulations.

The anticipated cost for this project is $100,000 for engineering / construction management, $3,495,944 for AYM Design-Build Contract for total of $3,595,944 and will be funded by Cabras 3&4 insurance proceeds. The project will begin in July 2019 and will be completed in July 2020

Comm. Sanchez motioned to approve Resolution 2019-06 second by Comm. Limtiaco. There was no further discussion or objection and the motion carried unanimously.

5.1.5 Resolution 2019-07 Approval of Utility Energy Service Contract (UESC) Costs

This resolution seeks authorization to petition the PUC for the contract increase approval of Siemens to $1,933,374 for projects related to demand side management and energy efficiency programs. Siemens was awarded the contract from the Request for Proposal No. GPA-RFP-16-013 issued in May 2016 for Partnering Opportunities for the Development of Demand-Side Energy Conservation Programs and Utility Energy Services Contract Programs. The Utility Energy Services Contract supports GPA's demand side management program in the implementation or execution of energy efficiency and renewable projects for our large customers which may include financing as well as technical support.

The tasks include energy efficiency projects at GDOE and potentially other schools on the island. The opportunity for the projects at Carbullido, George Washington and Southern schools will be during this summer while school is out of session. The projects for Carbullido, GW and Southern schools are expected to be completed by Summer 2019. The project under the Guam Energy Office must be completed before December 2020.

Most of the current contract costs will be used for energy efficiency projects at Carbullido Elementary School and the George Washington and Southern High Schools. In addition, some funds will be used at other schools, yet to be determined, for energy audits and an energy efficiency conference through the Guam Energy Office grant award. The current contract costs are totaling $1,933,374. The funding source will come from grant funds (68%), $500k from bond refinancing savings [approved by CCU and PUC in January 2018] and the balance through CIP's in FY2020.

Comm. Guthertz motioned to approve Resolution 2019-07 second by Comm. Limtiaco. There was no further discussion or objection and the motion passed unanimously.

5.1.6 Resolution 2019-08 Relative to LEAC Filing

The Guam Public Utilities Commission (GPUC) has established a Tariff under which the Guam Power Authority (GPA) is allowed to recover its fuel costs and fuel related costs under a factor which is reset and trued up every (6) six months through the Levelized Energy Adjustment Clause (LEAC). The deadline for the next filing is June 15, 2019. For the LEAC period covered from February 1, 2019 through July 31, 2019, GPA requested to maintain the LEAC rate of $0.154242/kWh that was approved by the CCU and GPUC.

The average market price of fuel in the initial filing for the current period was approved at $66.73/bbl for the (6) six-month period ending July 31, 2019, the current projection for the same period is $72.87/bbl and the projected price of fuel for the period ending January 31, 2020 is $74.18/bbl;

Although GPA will file the required LEAC schedules, it has determined that it will not petition for a change in the LEAC factor for secondary voltage service customers as well as alternative voltage customer for the period of August 1, 2019 to January 31, 2020.

GPA management recommended no change in LEAC and to keep the LEAC rate at $0.154242/kWh effective for the period from August 1, 2019 thru January 31, 2020.

Based on this status quo approach, an under-recovery of about $9M is anticipated by the end of the LEAC period on January 31, 2020 which will have some impact on the working capital and other financial ratios; however. GPA will be able to manage for a short-term period.

Comm. Guthertz motioned to approve Resolution 2019-08 second by Comm. Limtiaco.

Comm. Sanchez said for last year GPA was able to support some under recovery and next February the under recovery is expected to still be about $9M. If GPA can live without recovering this shortfall for a year, would management consider absorbing the $9-13M under recovery. GM Benavente responded that it is too early to consider this because we are not over the hump yet but will take a look at it.

Comm. Santos asked why does the LEAC adjustment overlap the budget period. Currently the first four (4) months of the FY is being impacted because of the timing of the LEAC adjustment. Comm. Sanchez said it's a pass thru expense and does not impact revenues. It was mentioned that management could petition the PUC to change the LEAC periods to coincide with the start of the FY.

On the motion there was no further discussion or objection and the motion passed; the vote was 5 ayes.

6. ANNOUNCEMENTS

6.1 Next CCU Meetings

The Chairman said the next CCU meeting would be a CCU meeting on June 5 to discuss the 5-year rate plan and vertical construction of secondary treatment for Northern District.

Comm. Sanchez said he thought that there would be a work session after the GWA outreach and feedback to review the sensitivity analysis for various options for the related rates. It was decided to keep the sensitivity analysis discussion at the June 5th meeting instead of a work session.

GWA counsel Clark said that there were two (2) litigation matters for GWA and a court reporter is present for proper transcription. It was clarified that if the litigation matter is settled the matter becomes public in three (3) months; if not settled it will be made public in six (6) months. It was also

clarified that a court reporter is only there to transcribe discussions relative to litigation and that it was not necessary to transcribe discussions relative to personnel.

Comm. Santos motioned to move to executive session for items 7.1 and 7.2 second by Comm. Guthertz. On the motion there was no further discussion and the motion passed unanimously

The Chairman called for a 5-minute recess before executive session. It was 6:20 p.m.

7. EXECUTIVE SESSION

7.1 Atty. Kelly Clark – GWA Litigation Matter
7.2 Atty. Kelly Clark – GWA Litigation Matter
7.3 Atty. Vince Leon Guerrero – CCU Litigation Matter
7.4 Atty. Vince Leon Guerrero – CCU Litigation Matter

The meeting returned to regular session and the Chairman said he would entertain a motion.

Comm. Guthertz motioned to approve Resolution 34-FY2019, a claim for Jose Delos PInos for $91,500 second by Comm. Santos. There was no further discussion or objection and the motion passed unanimously.

The meeting moved back to Executive Session to discuss item 7.3. For the record 7.4 was considered moot and was not discussed.

In discussion Comm. Sanchez asked if in the future more detail could be provided on the agenda for executive session items for the purpose of clarity. The Chairman said absolutely and that he would discuss this matter with both counsels Clark and Botha.

Outside Legal Counsel Vince Leon Guerrero read his affidavit and said he recommends that the meeting be moved to executive session to discuss a litigation matter ref Joaquin Leon Guerrero vs. GovGuam SP88-19

Comm. Guthertz motioned to move to executive session second by Comm. Santos

Comm. Sanchez said because he did not see his affidavit, he asked outside counsel Leon Guerrero if he Mr. Joaquin Leon Guerrero's name was included in his affidavit, his response was no it was not. Comm. Sanchez asked if outside counsel was amending his affidavit verbally to include the name of the litigant Joaquin Leon Guerrero and Counsel Leon Guerrero confirmed yes, he was.

The meeting moved to Executive Session.

The meeting moved back to Regular Session

Comm. Sanchez motioned that outside counsel proceed to respond to the Leon Guerrero litigation as discussed in executive session second by Comm. Guthertz.

Comm. Sanchez asked outside counsel if the motion was legally sufficient and outside counsel Leon Guerrero said yes, he believed it was.

Comm. Limtiaco said that last month opened everyone's eyes that there are some procedural items that the Commission can fine tune i.e. rules and regulations that can be put in place. He said he would like to

make a motion to establish a Rules Committee, volunteering to chair this committee, so that a set of standards can be developed to fully understand the duties of the CCU elected officers. The CCU Rules Committee would be similar to the legislative standing rules committee. It was discussed that definitions be included in the draft. Comm. Duenas also recommended that the Rules Committee formalize the Standard Operating Procedure (SOP) for appointments, employment and termination in executive session. The Committee would work with counsel to develop the definitions, prepare the draft citing the supporting case law, where necessary. It was discussed that all members of the Commission would be members of the Rules Committee. All agreed that this was a good recommendation and thanked Comm. Limtiaco for volunteering to chair the CCU Rules Committee.

Comm. Limtiaco restated his motion - to establish a Standing Rules Committee for the Consolidated Commission on Utilities to include all five members of the Commission as members second by Comm. Guthertz. On the motion there was no further discussion or objection and the motion passed unanimously.

Outside Counsel Leon Guerrero advised that the Chairman asked him to draft a letter to the Attorney General advising him of the CCU action/s to date relative to his 4/23/19 letter addressing the Executive Session meeting of Nov. 27, 2018. Outside Counsel read his draft which specified all actions taken by the Commission to date – to rescind all pay raises given, to rescind all bonuses given, to payback pay adjustment / bonus, to release Minutes, documents and recordings of Executive Session of Nov. 27, 2018. It was agreed that he would draft the letter and that Chairman Duenas would sign the letter and send to Atty. General Camacho.

Comm. Limtiaco asked outside counsel about the (5) opinions that the Commission asked him to draft and whether or not he would still provide a response i.e. the declaratory judgement issue and others. Outside counsel apologized and said he thought the matter was moot and that is why he did not do so to date. After some discussion it was decided to have outside counsel proceed to draft the opinion and deliver via the Chairman who will then disseminate to the other four Commission members.

8. ADJOURNMENT

There being no other business to bring before the Commission, the meeting adjourned at 7:40 p.m.

\\s\\
Bls

Attested

_____ _____

JOSEPH T. DUENAS, Chairman MICHAEL T. LIMTIACO Secretary

GUAM WATERWORKS AUTHORITY

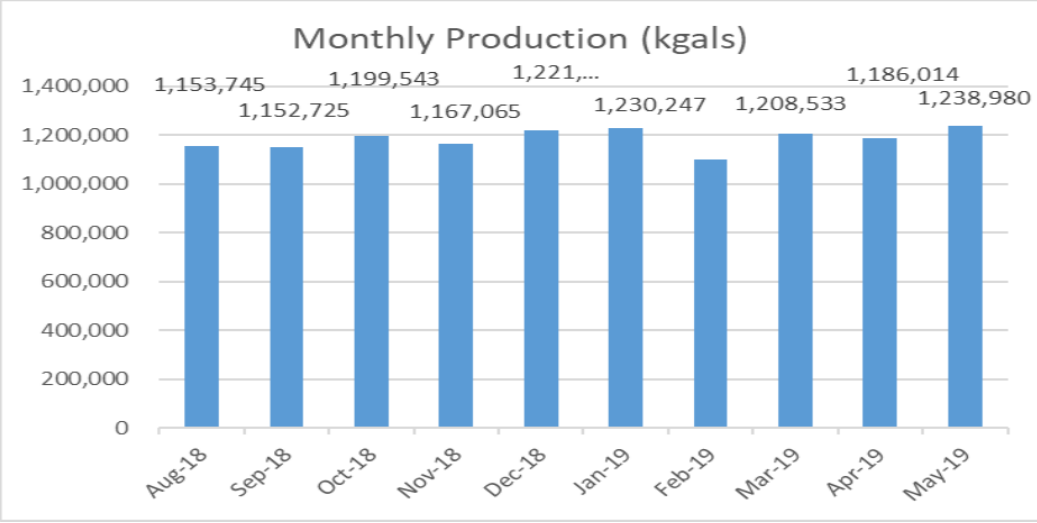
Management Report
GWA CCU Meeting, July 23, 2019

Operations Update

Production (May 2019)

Monthly Production Summary - May 2019					
Deep Wells				36.5	MGD
	Active wells =	102	of 120		
	Avg days in operation =	31	days		
	Total Production =	1,131,672	Kgals		
Springs				0.17	MGD
		31	days		
	Total Production =	5409	Kgals		
Ugum Surface Water Plant				2.3	MGD
	Avg days in operation =	31	days		
	Total Production =	71,736	Kgals		
Tumon Maui Well				0.97	MGD
	Avg days in operation =	31	days		
	Total Production =	30,163	Kgals		
		1,238,980	Kgals	40.0	MGD

DW Status as of 5/31/2019	
Active	**102**
Grounded motor or Pump Failure	**5**
Out of commission	**8**
Secured, PFOs	**2**
Temporarily Secured	**1**
Standby	**2**
TOTAL	**120**

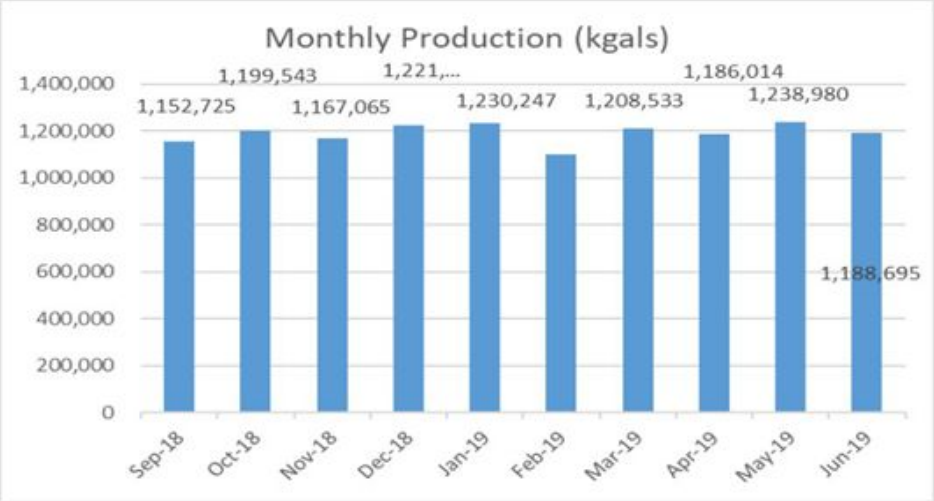


Operations Update

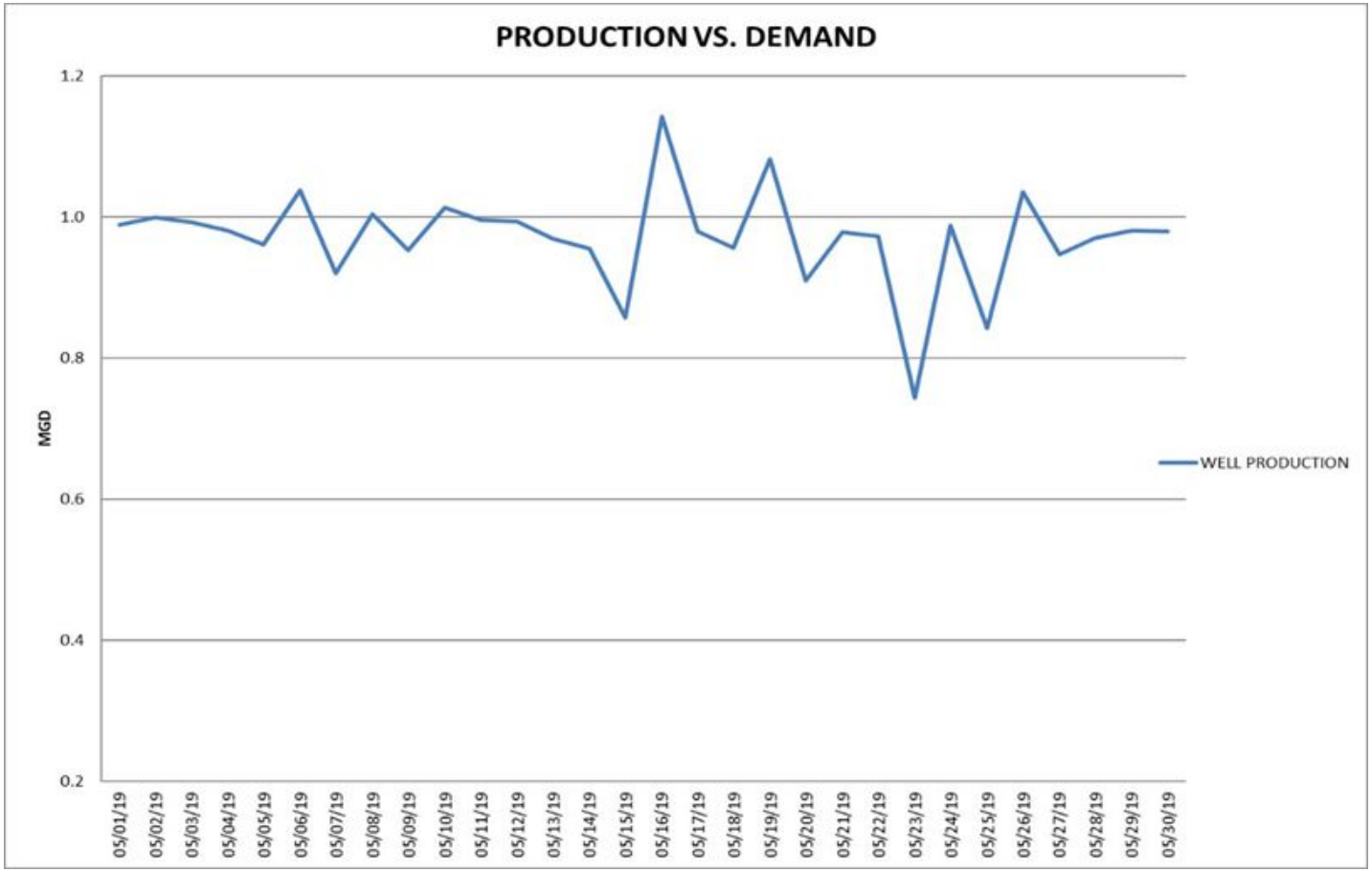
Production (June 2019)

Monthly Production Summary - June 2019					
Deep Wells				36.0	MGD
	Active wells =	103	of 120		
	Avg days in operation =	30	days		
	Total Production =	1,079,487	Kgals		
Springs				0.19	MGD
	Avg days in operation =	30	days	*placed on standby	
	Total Production =	5828	Kgals		
Ugum Surface Water Plant				2.4	MGD
	Avg days in operation =	30	days		
	Total Production =	71,489	Kgals		
Tumon Maui Well				0.97	MGD
	Avg days in operation =	30	days		
	Total Production =	29,210	Kgals		
		1,186,014	Kgals	39.5	MGD

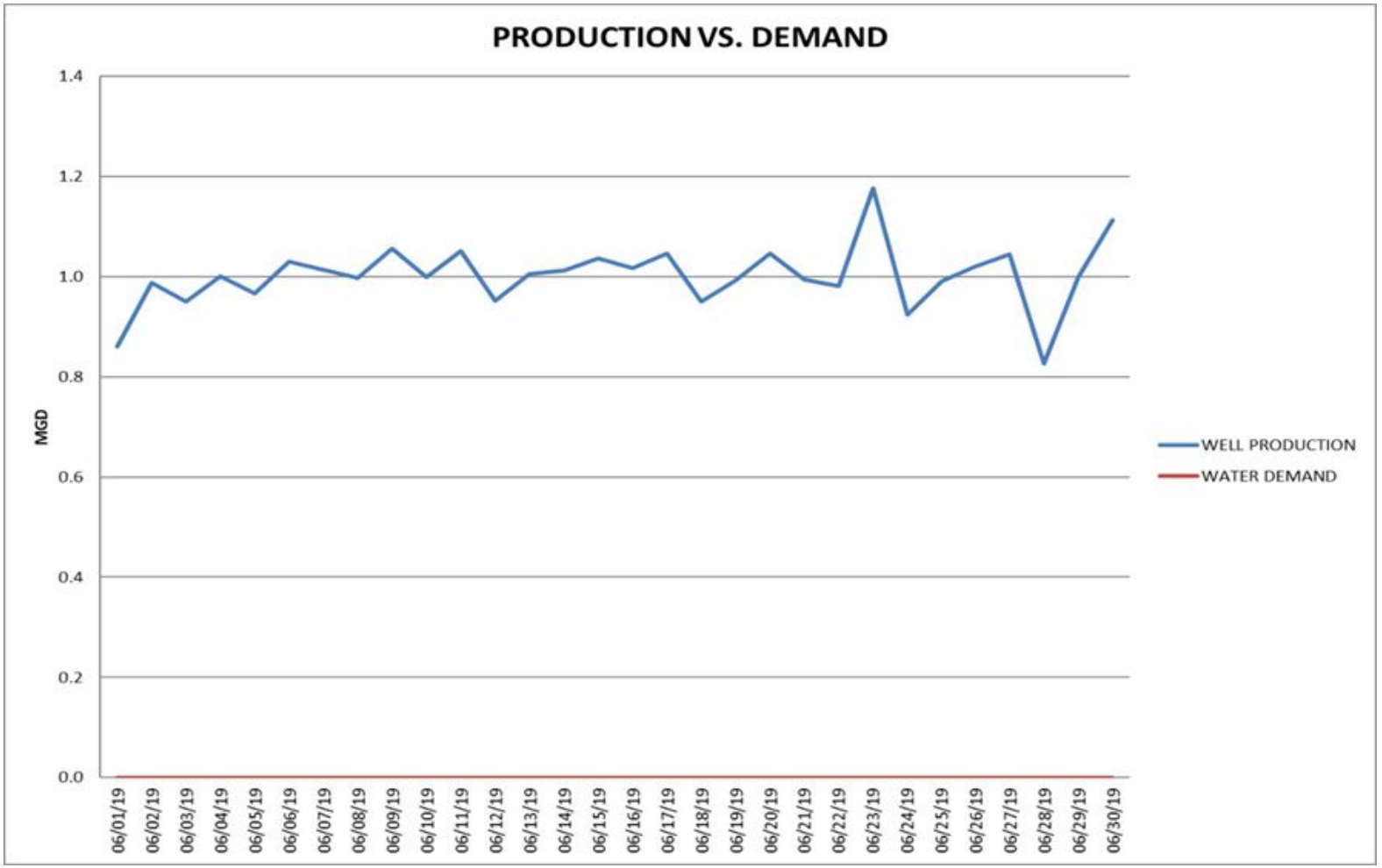
DW Status as of 6/30/2019	
Active	**97**
Grounded motor or Pump Failure	**6**
Out of commission	**8**
Secured, PFOs	**2**
Standby	**7**
TOTAL	**120**



Tumon Maui Well Production (May 2019)



Tumon Maui Well Production (June 2019)



Distribution (May 2019)

Monthly Distribution Summary - May 2019					
Water Booster Pump Stations					
	District	No. of Stations	Total Pumps	Pumps Operating	% Operational
	Northern	11	20	18	90.0%
	Central	7	15	15	100.0%
	Southern	7	15	14	93.3%
		25	50	47	94.0%

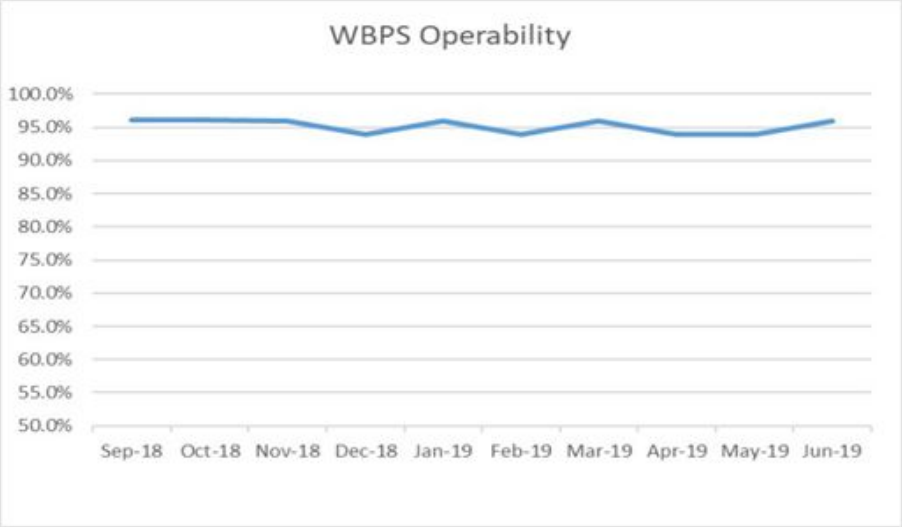


Distribution (June 2019)

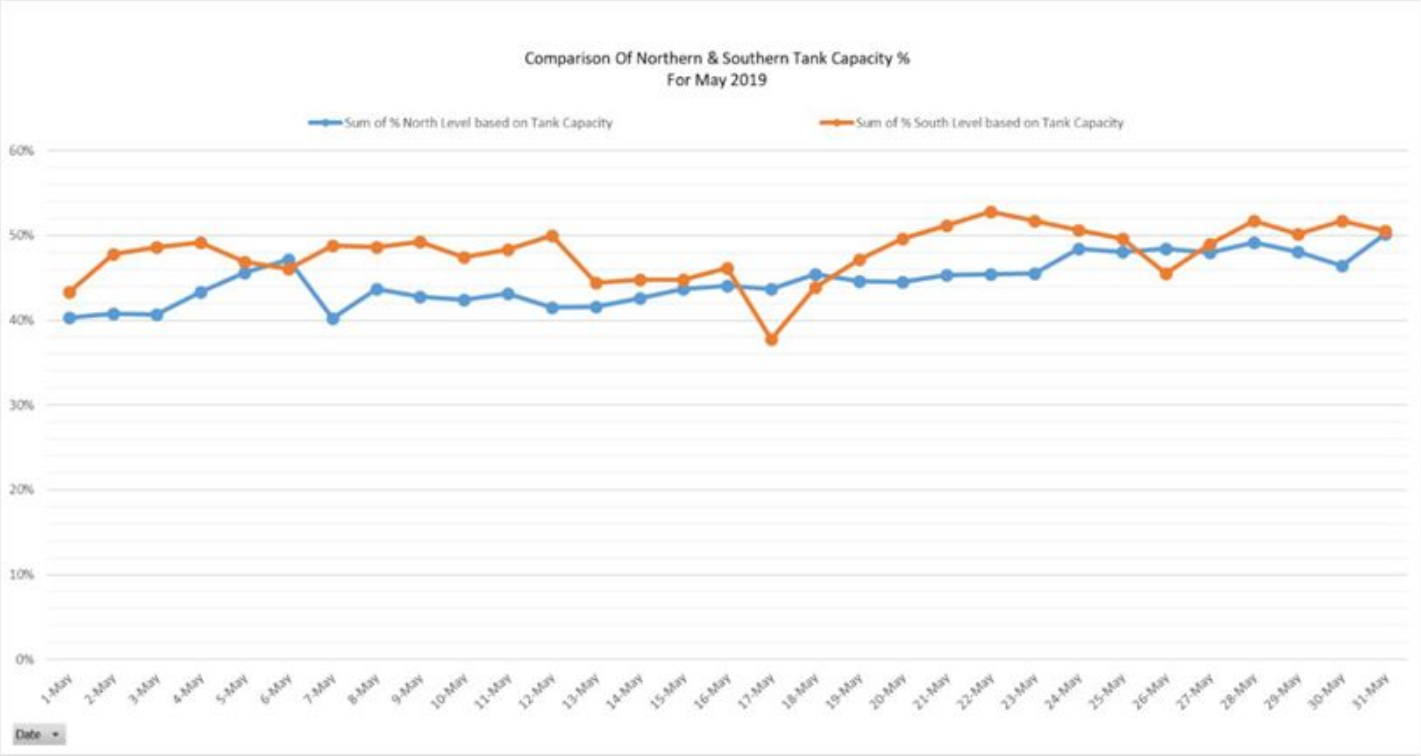
Monthly Distribution Summary - June 2019

Water Booster Pump Stations

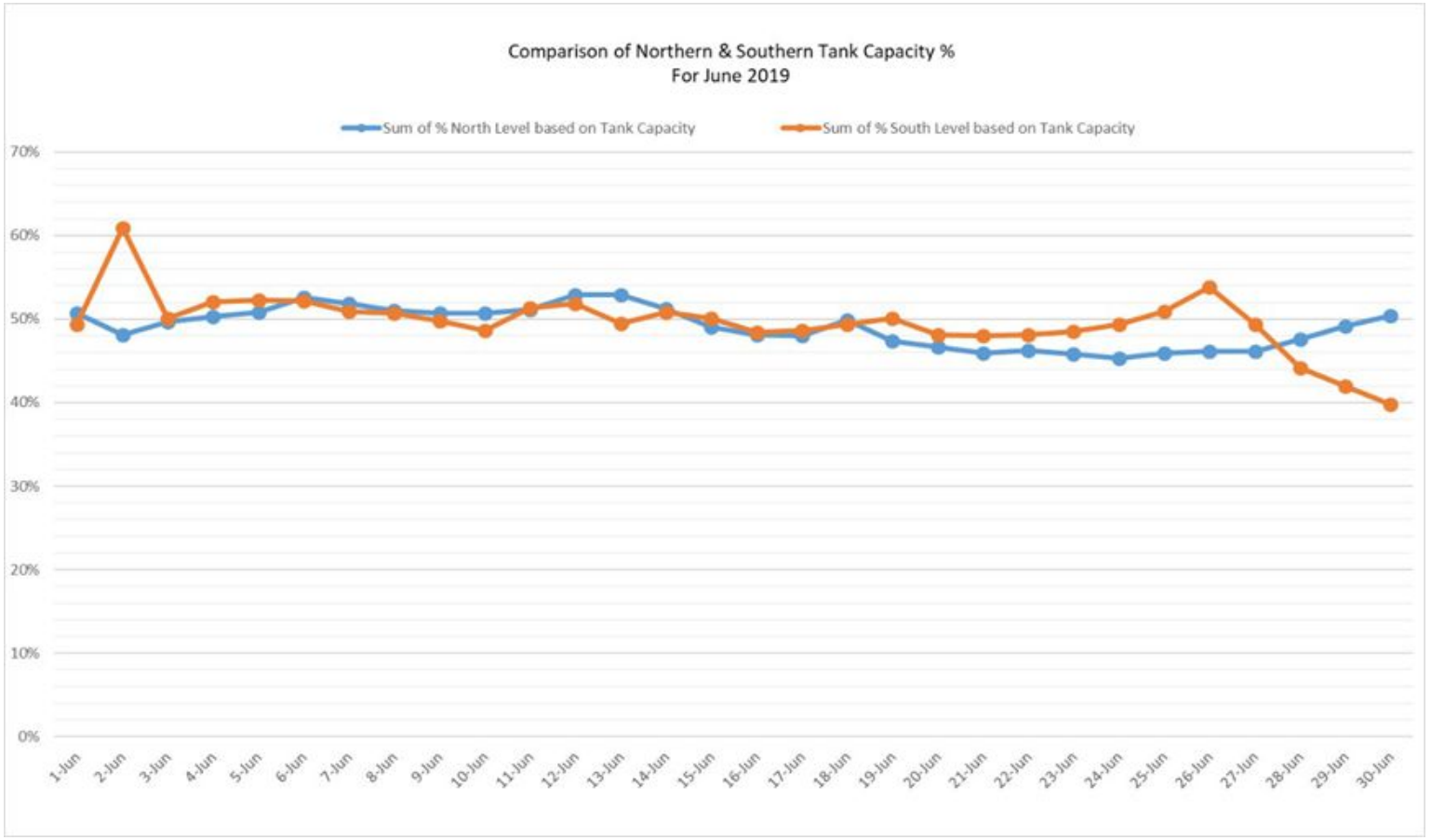
	District	No. of Stations	Total Pumps	Pumps Operating	% Operational
	Northern	11	20	18	90.0%
	Central	7	15	15	100.0%
	Southern	7	15	15	100.0%
		25	50	48	96.0%



Distribution – Tank Levels (May 2019)

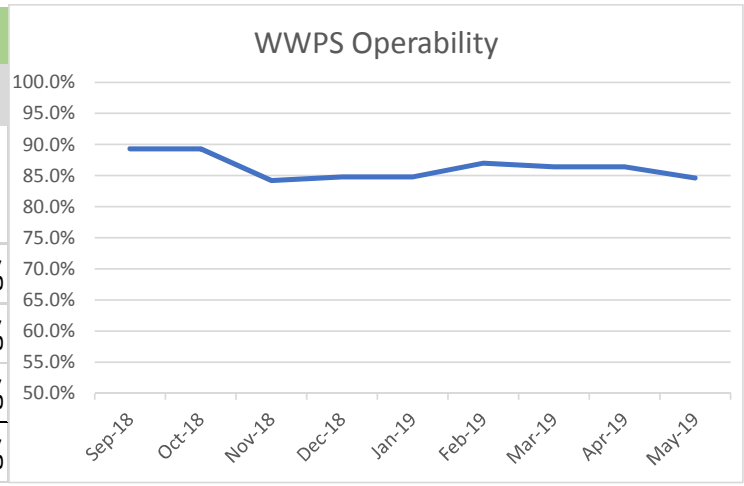


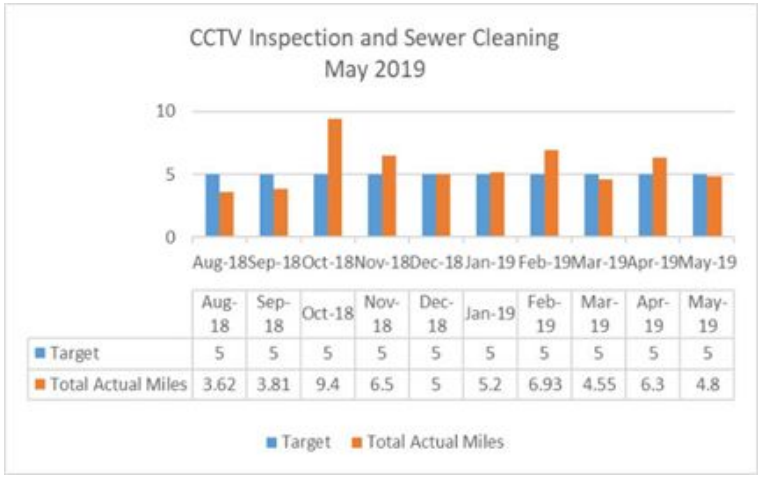
Distribution – Tank Levels (June 2019)



Wastewater Collections (May 2019)

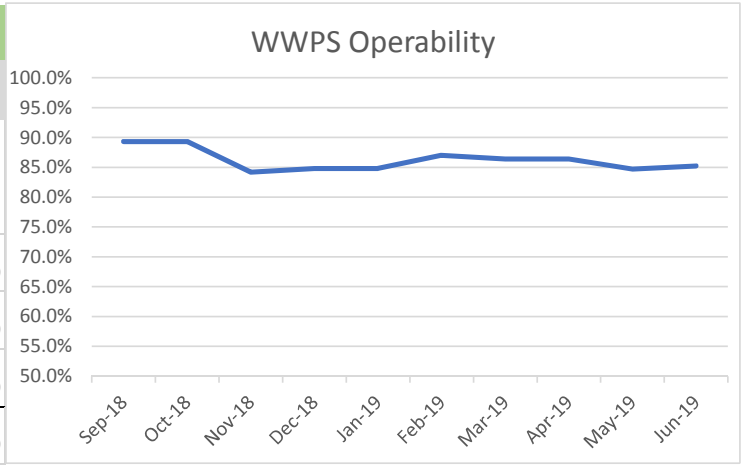
Monthly Collections Summary - May 2019					
Wastewater Pump Stations					
	District	No. of Stations	Total Pumps	Pumps Operating	% Operational
	Northern	22	52	40	76.9%
	Central	29	63	54	85.7%
	Southern	28	61	55	90.2%
		79	176	149	84.7%

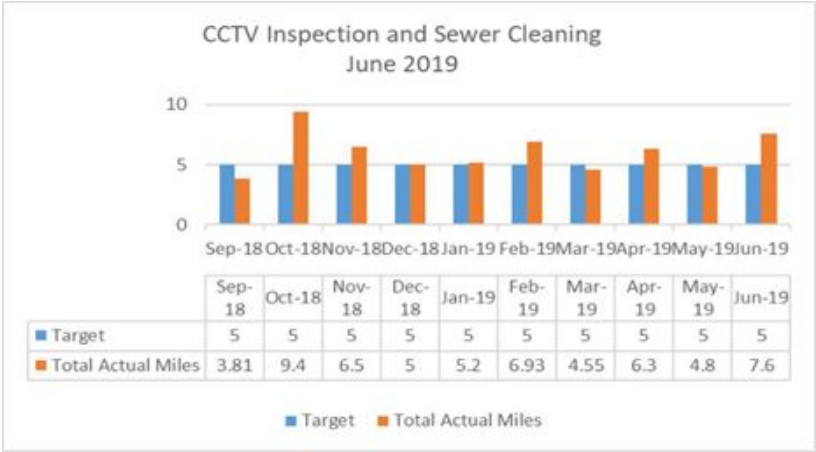




Wastewater Collections (June 2019)

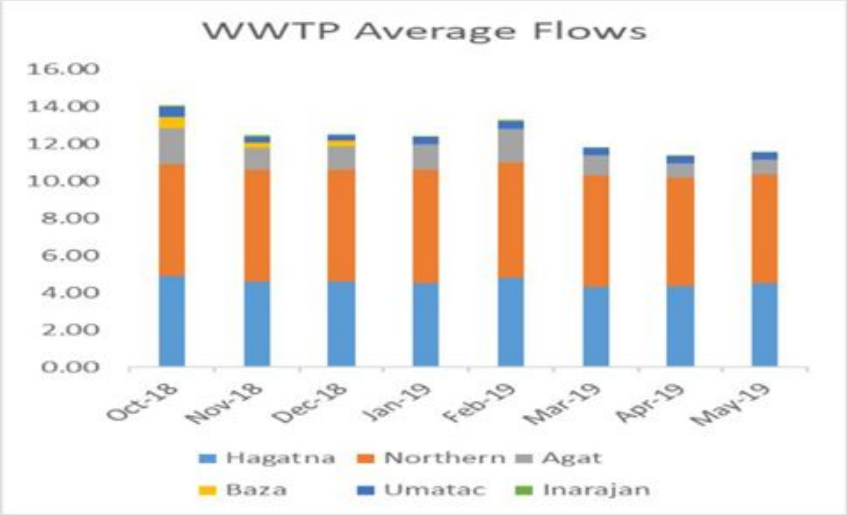
Monthly Collections Summary - June 2019					
Wastewater Pump Stations					
	District	No. of Stations	Total Pumps	Pumps Operating	% Operational
	Northern	22	52	40	76.9%
	Central	29	63	56	88.9%
	Southern	28	61	54	88.5%
		79	176	150	85.2%





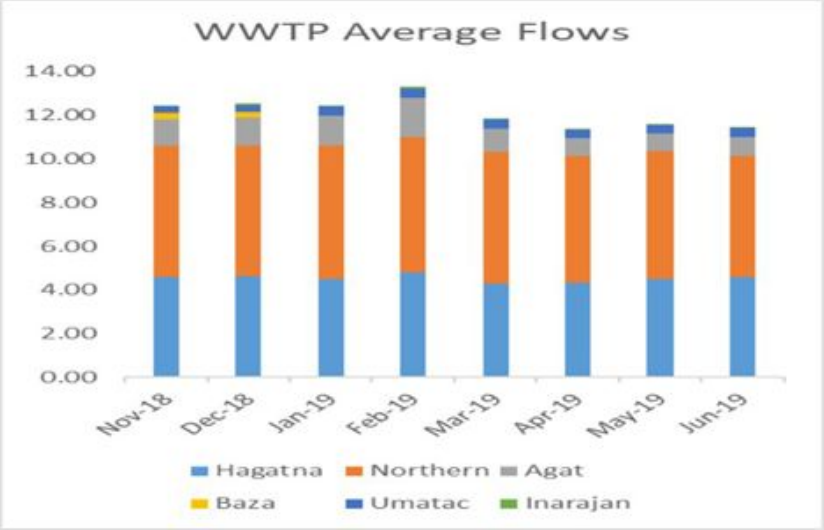
Wastewater Treatment (May 2019)

Monthly Wastewater Treatment Summary - May 2019				
WW Treatment Plants - Flows				
	Facility	**Avg. Daily Flows (MGD)**	**Sludge (lbs)**	**Sludge Disp. ($)**
	Hagatna	4.49	316,320	$ 28,469
	Northern	5.87	1,351,300	$ 121,617
	Agat	0.8		
	Baza	0		
	Umatac	0.39		
	Inarajan	0.05		
		11.60	1,667,620	$ 150,086

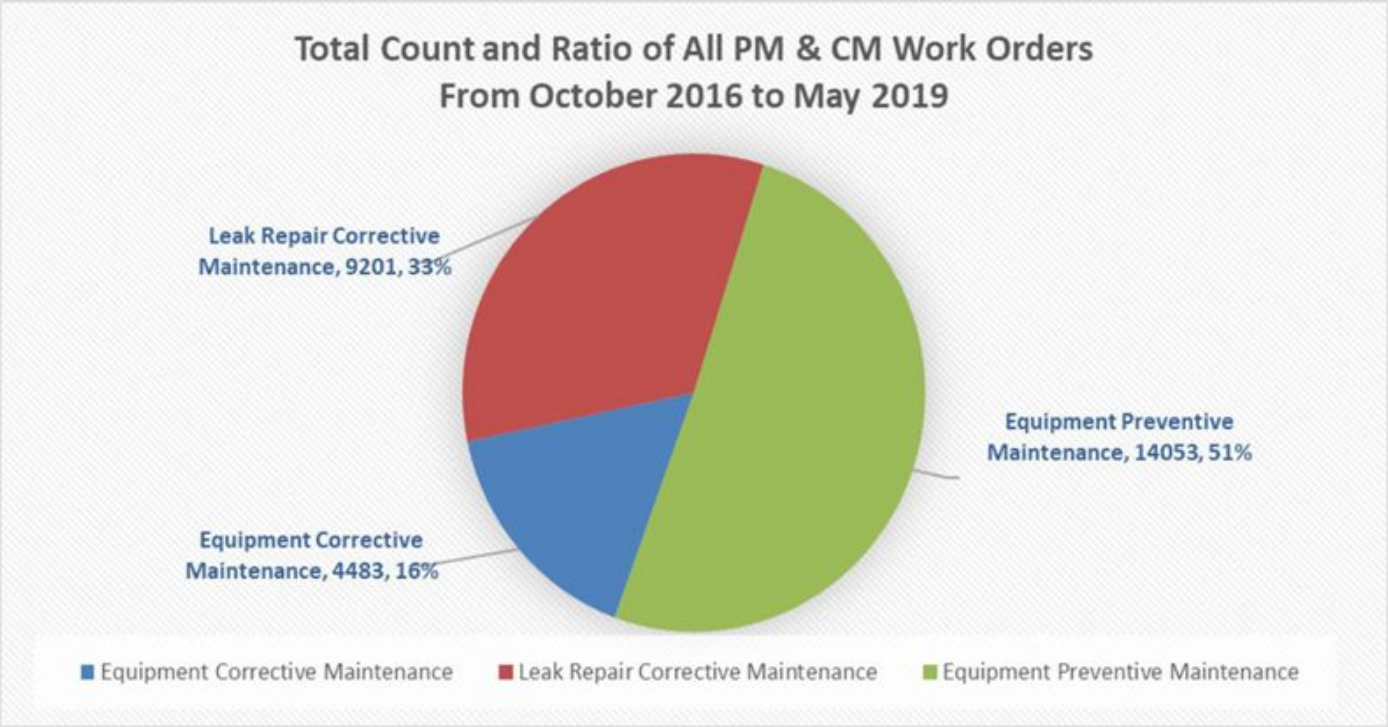


Wastewater Treatment (June 2019)

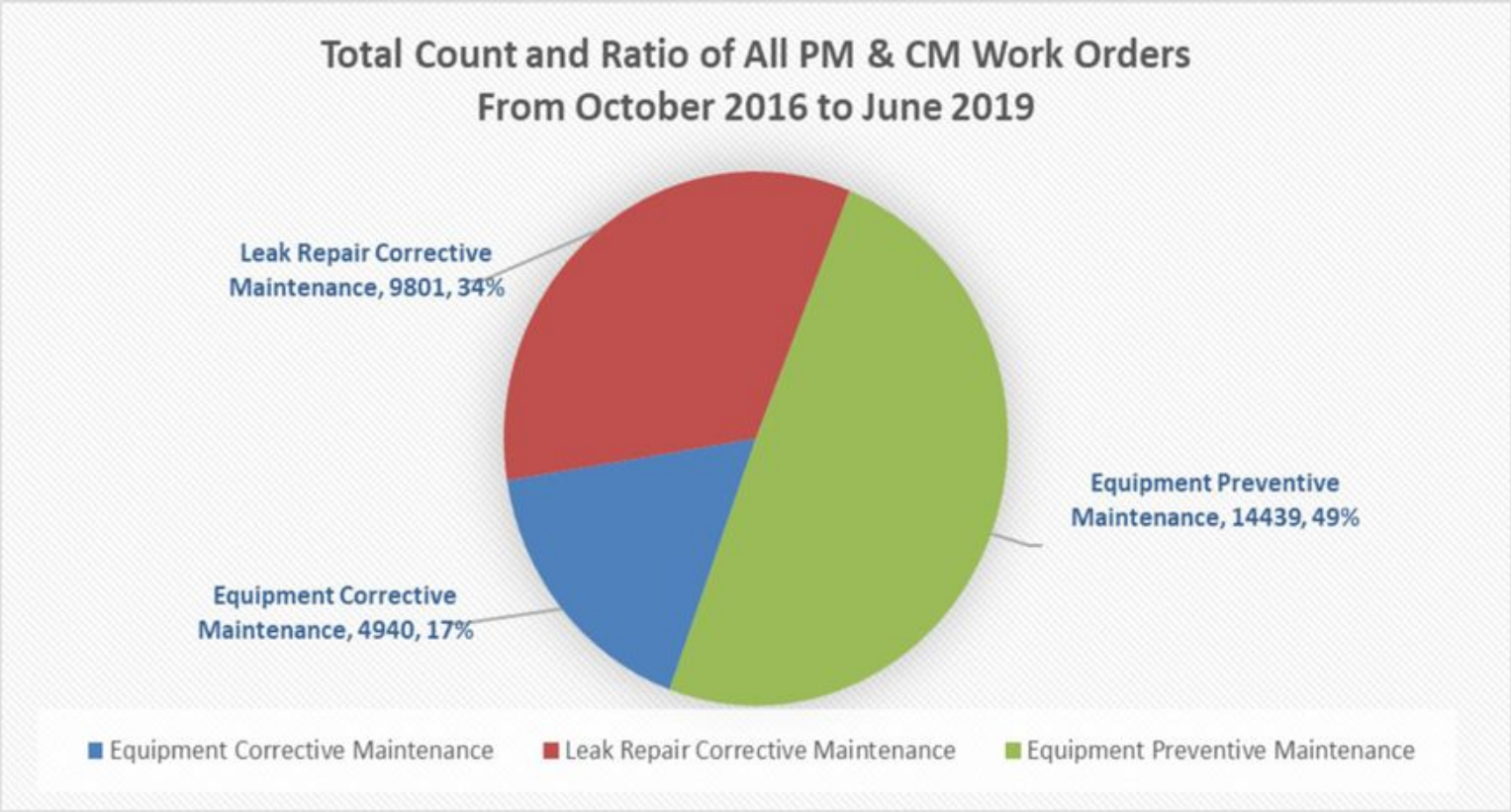
Monthly Wastewater Treatment Summary - June 2019				
WW Treatment Plants - Flows				
	Facility	**Avg. Daily Flows (MGD)**	**Sludge (lbs)**	**Sludge Disp. ($)**
	Hagatna	4.59	564,640	$ 50,818
	Northern	5.56	736,660	$ 66,299
	Agat	0.87		
	Baza	0		
	Umatac	0.39		
	Inarajan	0.04		
		11.45	1,301,300	$ 117,117



Asset Management (May 2019)



Asset Management (June 2019)



Operational Issues

Production & Distribution

- Well Y-9: pump and motor recovery completed; contractor's ingenuity and tenacity contributed to success in recovering pump/motor and column previously thought lost down-hole.
    - Yigo reservoir levels have recovered
- Ugum WTP:
    - SCADA system upgrade and hardware replacement was completed
    - Testing & final commissioning revealed some issues with UPS and programming; troubleshooting is on-going
    - Connection/integration of raw water intake pumps is on-going
    - CIP in planning stages

Wastewater Collection & Treatment

- We have a new O&M Manager – Jason Tudela is taking over the reigns of WW Collection
- Pump stations
    - Critical spares and replacements procurement – orders released; pending arrival
- Collection System:
    - Harmon: Smoke testing and CCTV in Harmon Industrial Park conducted to identify sources of I&I affecting Harmon Pump Station
        1. Parking lot storm drain positive for smoke located in vicinity of Quality Distributors (see Figure 1)
        2. Sabana Condominiums- positive for smoke at cracked concrete structure attached to wall (see Figure 2)
        3. Hillside Apartments three locations positive for smoke-potentially defective sewer line (Figure 2)
        4. Total Chemical Resources-cleanout with shower drain cover positive for smoke (see Figure 3)
        5. 3-4-inch uncapped cleanout located on Harmon Industrial Park Road open- positive of smoke (Figure 4)
        6. Green Market parking lot storm drain located positive for smoke (Figure 5)
        7. Proline storm drain & pavement crack butting on side of building positive for smoke (Figure 6)
        8. Large open cleanout on unknown road across JL Baker positive for smoke (Figure 7)
        9. Open cleanout (2 each) on unknown road along to Guam mini-storage /Giant Corp positive for smoke (Figure 8)
        10. Open Cleanout on intersection of Harmon Ind Rd & Rojas street positive for smoke (Figure 9)
        11. Two discovered MHs not on GIS/As-built – one with inlet coming from direction of ponding basin extent of lines could not be determined using smoke machine. Guerrero street & Haguit streets (Figure10)
        12. Unmapped sewer segment including a (potentially private pump station) on Pangelinan Blas street (Figure 11)
        13. Customer Billing Accounts – GIS shows inconsistency in sewered and unsewered customers (see Figure 12)

Location of Smoke Machine_Harmon Industril Park_ Harmon Pumpstation sub-basin



Red dot- smoke machine location (12 sites)

Red rectangle- corresponds to figure number below in "significant & incidental findings

Meters from January 2017 through June 2019

COMPLETED FIELD ACTIVITY JAN 2017 THRU JUNE 2019 (POSTED IN CIS)	2017	2018	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	TOTAL:	COMPLETED FIELD ACTIVITIES (IN PROCESS) TO BE POSTED IN CIS
GWA - Test Meter	5206	12191	1330	759	717	1317	664	703	22887	110
GWA - Meter Exchange	6487	13353	158	140	444	1583	1212	922	24299	152
TOTAL:	11693	25544	1488	899	1161	2900	1876	1625	47186	262

# OF METERS TESTED AS PER METER TEST FACILITY REPORTS:	6079	12259	937	730	518	1231	1135	621	23510	
# OF BACKBILLINGS APPLIED AS PER FINANCE REPORTS:	746	4272	1188	n/a	787	519	45	305	7862	$ 3,047,224.00

# OF FIELD CREW PERFORMING CHANGE OUTS:	19.4	16.1	1	1	10	8	7	7
# OF ADMIN STAFF TO CREATE AND POST FIELD ACTIVITIES IN CIS	10	6.3	0	0	4	9	6	6
# OF SUPPLY STAFF TO ISSUE MATERIALS AND PROGRAM NEW METERS:	2	2	0	0	2	2	2	2
# OF TEST FACILITY PERSONNEL TESTING METERS:	3	2	2	2	2	2	3	3
# OF ACCOUNTANTS CALCULATING BACK BILLS:	2	3	5	5	3	2	1	3
TOTAL:	36.4	29.4	8	8	21	23	19	21

Project resumed : March 22 2019

REMAINING ACTIVE BADGER LP MODELS AS OF June 30, 2019: 8561

Stock #	Size	Meter Description	New Meters	Passed Field Meters	MMP	Meters Available	Meters at MTF	Total Count
60484	3/4"	METER, Badger AMR 5/8" X 3/4" RCDL Model M25 Disc Meter	74	0	0	74	18	92
74131	3/4"	METER, Badger AMR 5/8" x 3/4" **WARRANTY** RCDL Model M25	0	0		0	4	4
65293	3/4"	METER,Badger 5/8"x3/4" NSF61-G RCDL M25LL Disc Meter Integral	501	2	0	503	0	503
74131	3/4"	METER, Badger AMR 5/8" x 3/4" RCDL Model M25 ***RMI***	0			0	13	13
84769	3/4"	METER, Badger E-SERIES 5/8"X3/4" ULTRASONIC	980			980	193	980

One Guam Update

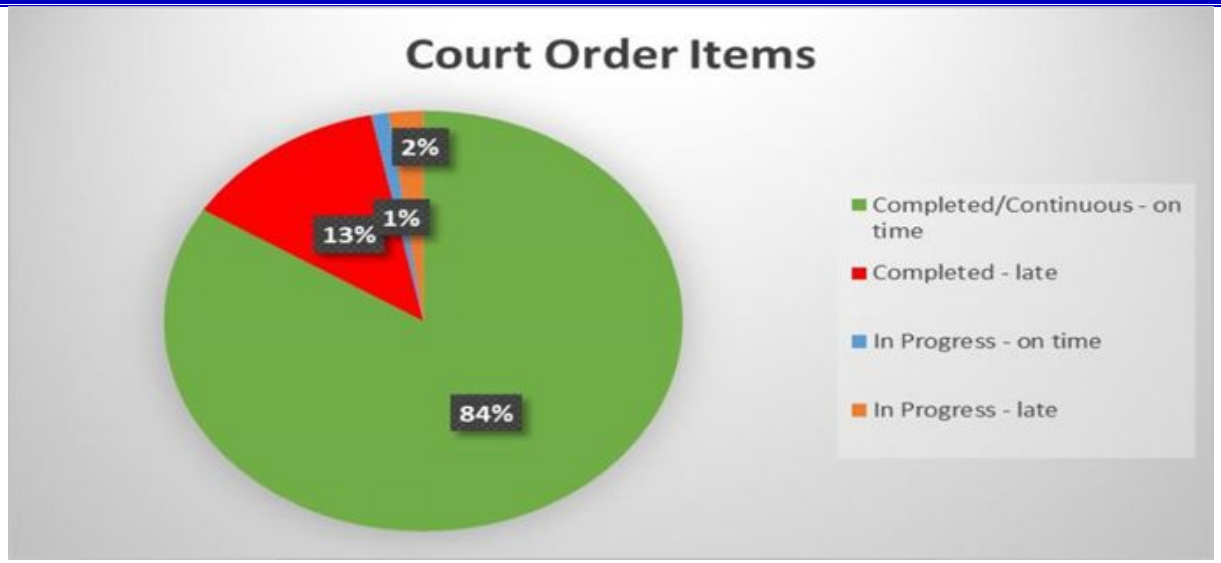
- Santa Rosa Tank
  - GWA submitted brief on operational and system improvements, resiliency and system performance for AAFB consideration; AAFB acknowledged receipt but has not responded.
  - GWA to proceed with Santa Rosa Tank project with intertie up to AF property – no delay to the GWA project

- OEA Projects
  - Observation Wells
    - All well sites finally received Navy and AAFB site approvals; proceeding with Archaeological and Biological Assessments.

- Property Transfers
  - Transfer of BPM-1
    - Navy requested pre-title inspection report – slow going
  - Transfer of Navy Laterals at Murray Road to GWA
    - Title research on-going
    - GWA Engineering evaluating which lines we should receive and which we should not
    - NBG PW to send the letter of release of easements & laterals
  - Nimitz Hill Booster Station
    - Confirmed DOD's easement is 50' wide; GWA Engineering is working on easement request for GWA WBPS improvements.
- Other
  - Cabras Island Water Lines
    - Upgrade project is about to begin
    - Navy preparing documents for release after upgrades completed.
  - Data Sharing SOP/MOU
    - Under AAFB review
  - Route 16
    - No movement; Navy upgrade still planned

Court Order

	Items	On-time Items Completed/Continuous	Items Delayed	Completed Late	Items on Schedule	Performance %
Court order total	**93**	**78**	**2**	**12**	**1**	**97.8%**



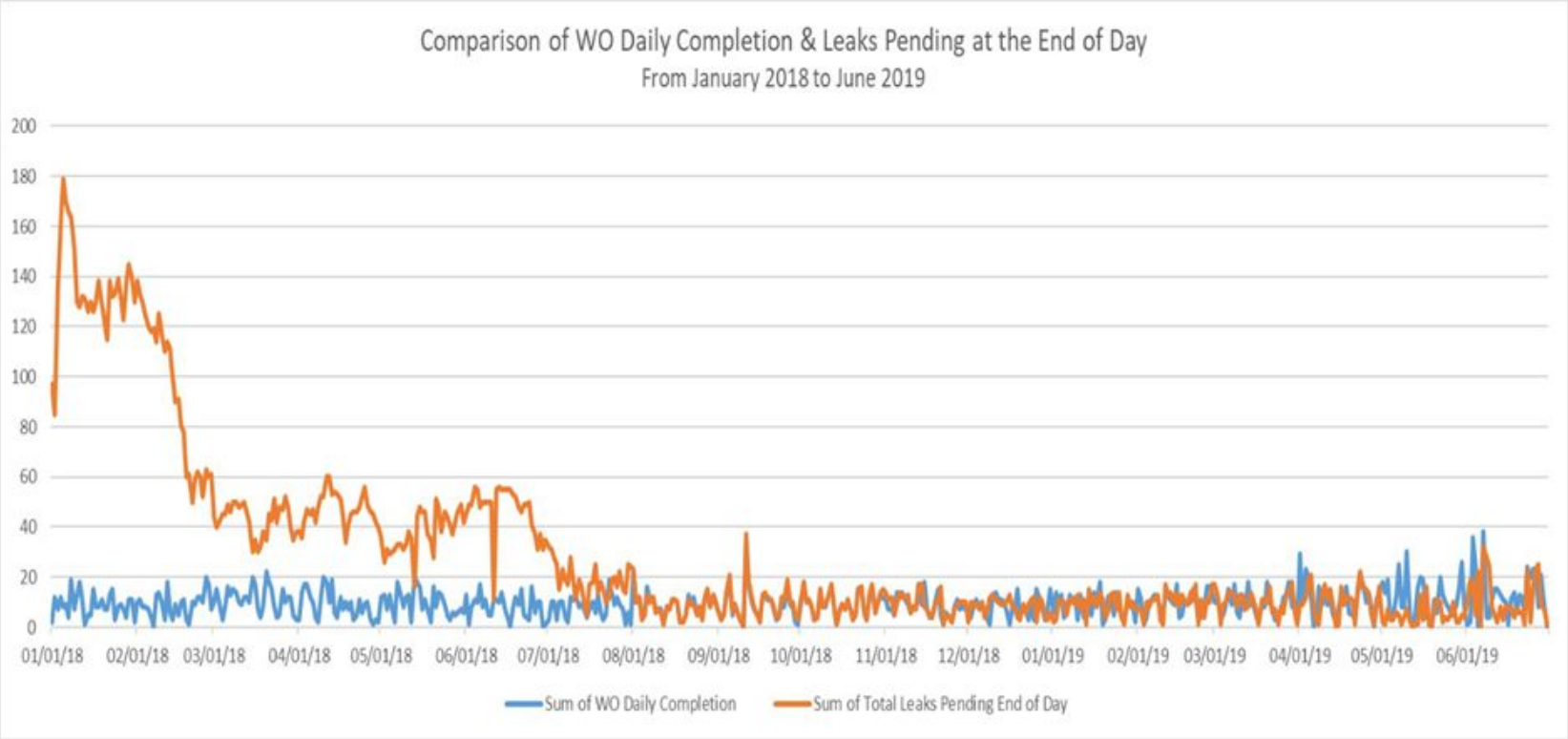
Status Information

- 2 items delayed
  - Water Reservoir Repair. Replacement or Relocation program, CO II C 29(b)(6)(i) – (10 additional tanks by 7th CO anniversary). (Affects final date of the Court Order.)
  - Umatac-Merizo Wastewater Treatment Plant – July/August 2019
- Final Date to complete all Court Order items may be delayed past December 31, 2020. [CO 29(b) has been expanded by 31% beyond the original Court Order Requirements (General Counsel is reviewing filing requirements and content).]
- Overflow or Bypass events reported to USEPA:
  - 06-11-19, Taitano Apartments sewer back up (FOG)
  - 06-27-19 Southern Link Pump Station failure – (moisture in controls)
  - (Note: due to special security checking by GWA Safety Staff, break-ins and wire theft have been intercepted and or prevented.)

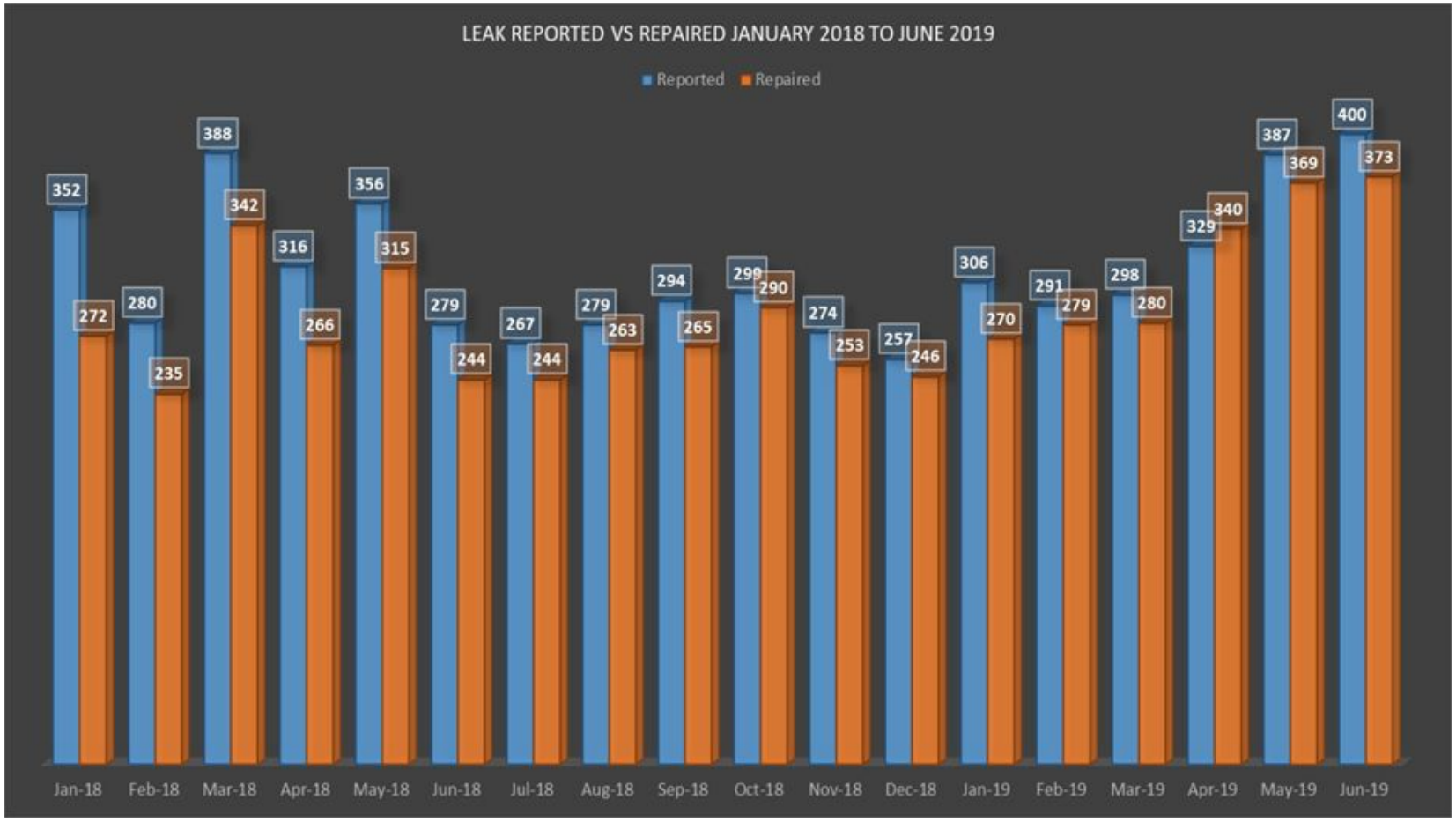
Land Acquisition Summary

GWA Facility	Location	Gov. or Private Property	Land Acquisition Status
Tanks	Ugum	Private	Land acquisition completed and filed under GWA ownership 03/29/2019.
	Astumbo	Gov't. - CLTC	GWA and DLM working together on Land Registration process. Pending Notification of surrounding lot owner information from DLM.
	Piti	Private	Preliminary geotechnical investigation and archaeological investigation in the process 05/01/18.
Expansion of the Northern District Wastewater Treatment Plant (NDWWTP)	Dededo	Gov't - GALC	Land acquisition completed and filed under GWA ownership 09/17/18.
Deep Wells	AG-12	Dept. of Agriculture/Manhita Farms	Right of Entry Agreement sent to Dept of AG for signature 05/24/18. 2nd follow up sent on 09/12/18. 3rd follow up sent on 04/10/19. Retracement Survey Property Map with DLM for review 03/06/19. Retracement Survey Property Map with DLM for final approval 06/05/19.
	Y-8	Gov't. - CLTC	Property ownership under Guam Waterworks Authority per Grant Deed No. 928090.
Booster Pump Station	Agfayan	Private	Authorization Form to perform appraisal and investigative services for L28, B19, T3734, Inarajan signed by CLTC 10/29/2018.
Sewer Pump Stations	2nd Adjacent Property to Southern Link	Private	Court Approved sale of a portion of Lot 5036-3, Dededo 04/24/19. DCS submitted Survey Fee Proposal for GWA review and approval 06/18/19.
Asan Springs	Asan	Federal	License Agreement for Asan Springs facility that fall on Dept. of Park Services property currently under DOI review.

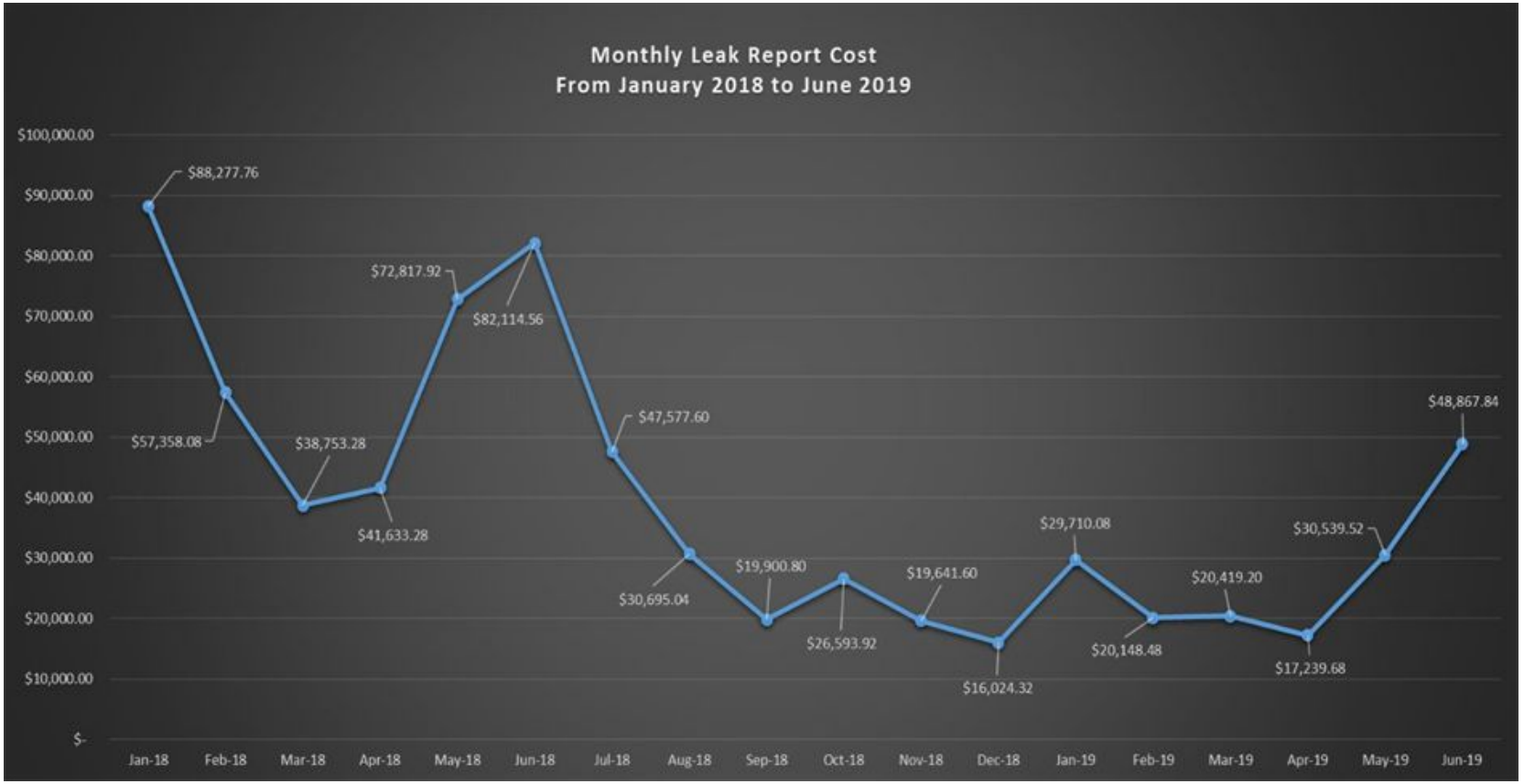
Leak Repair Summary (May and June 2019)



Comparison of Leaks Reported vs. Leaks Repaired (May and June 2019)



Monthly Leak Report Cost (May and June 2019)



Assumptions:

1. Leak rate = 4 gpm
2. Cost per kgal = $4.00

GUAM WATERWORKS AUTHORITY
JUNE 30, 2019
FINANCIAL AND RELATED REPORTS
TABLE OF CONTENTS

	SCHEDULES	PAGE
BALANCE SHEET	A	2
INCOME STATEMENT MTD ACTUALS VS MTD BUDGET	B	3
INCOME STATEMENT MTD ACTUALS FY19 VS FY18	C	4
INCOME STATEMENT YTD ACTUALS VS YTD BUDGET	D	5
INCOME STATEMENT YTD ACTUALS FY19 VS FY18	E	6
SCHEDULE of CASH RESTRICTED/UNRESTRICTED	F	7
AGING REPORT - GOVERNMENT RECEIVABLES	G	8
SYSTEM DEVELOPMENT CHARGES PROJECT STATUS	H	9

GUAM WATERWORKS AUTHORITY
Balance Sheet
June 30, 2019

SCHEDULE A

ASSETS AND DEFERRED OUTFLOWS of RESOURCES	Unaudited June 30, 2019	Audited September 30, 2018	Increase (Decrease)
Current Assets			
Cash			
Unrestricted (Schedule F)	5,378,739	3,094,379	2,284,360
Restricted Funds (Schedule F)	86,897,934	84,228,994	2,668,940
Accounts Receivable Trade, Net of Allowance for Doubtful Receivables of $7,148,677 at Jun 30, 2019 and $5,516,077 at Sep 30, 2018	13,135,160	16,610,663	(3,475,503)
Federal Receivable	521,313	3,837,146	(3,315,833)
Other Receivable	1,891,728	1,330,800	560,927
Materials & Supplies Inventory, Net of Allowance for Obsolescence of $64,131 at Jun 30, 2019 and $64,131 at Sep 30, 2018	3,245,358	3,342,557	(97,199)
Total Current Assets	111,070,233	112,444,539	(1,374,307)
Property, Plant and Equipment			
Utility plant in service			
Water system	368,674,905	348,812,303	19,862,601
Wastewater system	300,407,082	300,053,427	353,655
Non-utility property	22,065,728	21,720,023	345,705
Total property	691,147,714	670,585,753	20,561,961
Less Accumulated Depreciation	(318,851,032)	(303,019,447)	(15,831,585)
Land	3,861,120	3,681,120	180,000
Construction Work in Progress	215,996,889	178,443,926	37,552,963
Property, Plant and Equipment, net	592,154,691	549,691,352	42,463,339
Other noncurrent assets			
Restricted cash (Schedule F)	125,162,887	159,753,667	(34,590,780)
Investments (Schedule F)	53,882,296	43,097,913	10,784,383
Other Prepaid Expenses	812,276	677,828	134,449
Total other noncurrent assets	179,857,459	203,529,408	(23,671,948)
Total Assets	883,082,383	865,665,299	17,417,084
Deferred outflows of resources			
Debt defeasance due to bond refunding	12,184,982	12,810,787	(625,805)
Deferred outflows from pension	4,233,575	4,220,075	13,500
Deferred outflows from OPEB	9,070,814	9,070,814	-
Total Assets and Deferred Outflows of Resources	**908,571,754**	**891,766,975**	**16,804,778**
LIABILITIES, DEFERRED INFLOWS of RESOURCES AND NET ASSETS			
Current Liabilities			
Current maturities of long-term debt			
Series 2010 Bond	1,800,000	1,800,000	-
Series 2014 Refunding	3,620,000	3,620,000	-
Series 2017 Refunding	295,000	295,000	-
Notes Payable	3,047,502	3,203,870	(156,367)
Accounts Payable -Trade	4,365,231	5,442,000	(1,076,769)
Interest Payable	12,826,707	6,427,669	6,399,039
Accrued Payroll and Employee Benefits	1,129,899	1,608,219	(478,320)
Accrued Annual Leave	1,059,161	1,059,161	-
Current portion of employee annual leave	607,382	607,382	-
Contractors' Payable	14,551,822	25,680,792	(11,128,970)
Customer and Other Deposits	2,335,611	2,131,242	204,369
Other Liabilities	73,086	106,997	(33,911)
Total Current Liabilities	45,711,403	51,982,331	(6,270,929)
Long Term Debt, less current maturities			
Series 2010 Revenue Bond	1,895,000	1,895,000	-
Series 2013 Revenue Bond	172,630,000	172,630,000	-
Series 2014 Refunding Bond	68,900,000	68,900,000	-
Series 2016 Revenue Bond	143,310,000	143,310,000	-
Series 2017 Refunding Bond	107,365,000	107,365,000	-
Unamortized Bond Premium/Discount	32,223,238	33,300,619	(1,077,380)
Notes Payable	90,252	2,325,154	(2,234,902)
Net pension liability	45,451,352	45,451,352	-
Net OPEB obligation	88,950,661	88,950,661	-
Employee Annual Leave, Less Current Portion	822,821	822,821	-
Total Liabilities	707,349,727	716,932,938	(9,583,211)
Deferred inflows of resources:			
Deferred inflows from pension	1,870,114	1,857,164	12,950
Deferred inflows from OPEB	8,741,900	8,741,900	-
Total Liabilities and Deferred Inflows of Resources	717,961,741	727,532,002	(9,570,261)
Net Assets	**190,610,013**	**164,234,973**	**26,375,040**
Total Liabilities, Deferred Inflows of Resources and Net Assets	**908,571,754**	**891,766,975**	**16,804,778**

GUAM WATERWORKS AUTHORITY
Statement of Operations and Retained Earnings **SCHEDULE B**
Comparative Budget vs. Actual for the period ending June 30, 2019

	Month to Date		Variance
	Budget June-19	Actual (Unaudited) June-19	Favorable / (Unfavorable)
OPERATING REVENUES			
Water Revenues	5,813,246	5,646,006	(167,240)
Wastewater Revenues	3,247,265	3,046,430	(200,835)
Legislative Surcharge	294,667	282,666	(12,000)
Other Revenues	38,254	146,631	108,377
System Development Charge	97,773	104,797	7,025
Total Operating Revenues	9,491,205	9,226,531	(264,674)
OPERATING AND MAINTENANCE EXPENSES			
Water Purchases	491,577	485,164	6,413
Power Purchases	1,342,315	1,342,115	200
Total Utility Costs	1,833,892	1,827,280	6,613
Salaries and Wages	1,782,365	1,469,941	312,424
Pension and Benefits	562,238	458,463	103,775
Total Salaries and Benefits	2,344,603	1,928,404	416,199
Capitalized Labor and Benefits	(308,333)	(308,333)	(0)
Net Salaries and Benefits	2,036,269	1,620,071	416,199
Administrative and General Expenses			
Sludge removal	99,271	97,242	2,029
Chemicals	270,801	270,352	450
Materials & Supplies	195,606	194,509	1,096
Transportation	57,648	56,992	655
Communications	18,554	18,347	208
Claims	8,417	3,006	5,410
Insurance	79,461	77,860	1,601
Training & Travel	30,417	27,519	2,898
Advertising	25,500	25,059	441
Miscellaneous	68,632	67,935	697
Regulatory Expense	25,029	22,988	2,041
Bad Debts Provision	180,148	179,479	669
Total Administrative and General Expense	1,059,483	1,041,288	18,195
Depreciation Expense	1,759,065	1,759,065	(0)
Contractual Expense			
Audit & Computer Maint.	73,283	72,800	483
Building rental	38,361	35,211	3,150
Equipment rental	88,480	88,007	473
Legal	4,512	4,438	75
Laboratory	20,362	18,489	1,873
Other	200,958	175,535	25,423
Total Contractual Expense	425,956	394,479	31,477
Retiree Supp. Annuities and health care costs	249,871	239,069	10,802
Contribution to Government of Guam	51,975	50,000	1,975
Total Retiree Benefits	301,846	289,069	12,777
Total Operating Expenses	7,416,512	6,931,251	485,260
Earnings (Loss) from Operations	2,074,693	2,295,280	220,587
Interest Income-2010/13/14/16/17 Series Bond	84,943	355,724	270,781
Interest Income-Other Funds	13,856	77,212	63,356
Interest Income-SDC	2,072	11,657	9,586
Interest Expense- 2010/13/14/16/17 Series Bond	(2,387,785)	(2,137,785)	250,000
Interest Expense- ST BOG	(19,762)	(15,194)	4,568
Federal Expenditures	-	-	-
Loss on Asset Disposal	-	-	-
AFUDC	1,157,306	1,157,306	0
Amortization of Discount, Premium and Issuance Costs	(17,798)	119,709	137,507
Defeasance due to bond refunding	(16,201)	(69,534)	(53,333)
Deferred outflows from pension	-	-	-
Prior Year Adjustment	-	5,316	5,316
Total non-operating revenues (expenses)	(1,183,369)	(495,588)	687,781
Net Income (Loss) before capital contributions	891,324	1,799,692	908,368
Capital Contributions			
Grants from US Government	5,533,205	584,537	(4,948,669)
Grants from GovGuam & Others	-	17,468	17,468
Total Capital Contributions	5,533,205	602,004	(4,931,201)
Change in Net Assets	6,424,529	2,401,696	(4,022,833)
Debt Service Calculation			
Earnings From Operations	2,074,693	2,295,280	
System Development Charge	(97,773)	(104,797)	
Retiree COLA	51,975	50,000	
Interest/Investment Income	13,856	77,212	
Depreciation	1,759,065	1,759,065	
Balance Available for Debt Service per Section 6.12	3,801,817	4,076,759	
Working Capital Reserve Available for Debt Service	934,811	958,951	
Transfer to Working Capital- Debt Service Reserve	-	-	
Transfer to Working Capital- O&M Reserve	-	-	
Balance Available for Debt Service inclusive of reserves	4,736,628	5,035,710	
Debt Service			
Principal	476,250	476,250	
Interest	2,137,785	2,137,785	
Total	2,614,035	2,614,035	
Debt Service Coverage (1.25X)- per Section 6.12 (Indenture)	1.45	1.56	
Debt Service Coverage (1.75X) inclusive of reserves (PUC)	1.81	1.93	

GUAM WATERWORKS AUTHORITY
Statement of Operations and Retained Earnings
Comparative for the period ending June 30, 2019 and 2018

SCHEDULE C

	Month to Date		Variance
	Actual (Unaudited) June-19	Actual (Audited) June-18	Increase / (Decrease)
OPERATING REVENUES			
Water Revenues	5,646,006	5,531,297	114,709
Wastewater Revenues	3,046,430	3,191,784	(145,354)
Legislative Surcharge	282,666	289,209	(6,542)
Other Revenues	146,631	43,294	103,337
System Development Charge	104,797	89,249	15,549
Total Operating Revenues	9,226,531	9,144,833	81,698
OPERATING AND MAINTENANCE EXPENSES			
Water Purchases	485,164	723,748	(238,584)
Power Purchases	1,342,115	1,223,874	118,242
Total Utility Costs	1,827,280	1,947,622	(120,342)
Salaries and Wages	1,469,941	1,464,423	5,518
Pension and Benefits	458,463	376,266	82,197
Total Salaries and Benefits	1,928,404	1,840,689	87,715
Capitalized Labor and Benefits	(308,333)	(296,147)	(12,186)
Net Salaries and Benefits	1,620,071	1,544,542	75,529
Administrative and General Expenses			
Sludge removal	97,242	125,638	(28,396)
Chemicals	270,352	182,625	87,726
Materials & Supplies	194,509	180,995	13,514
Transportation	56,992	64,001	(7,009)
Communications	18,347	14,756	3,591
Claims	3,006	10,803	(7,797)
Insurance	77,860	76,005	1,855
Training & Travel	27,519	22,652	4,866
Advertising	25,059	14,226	10,833
Miscellaneous	67,935	84,564	(16,629)
Regulatory Expense	22,988	22,121	867
Bad Debts Provision	179,479	180,246	(767)
Total Administrative and General Expense	1,041,288	978,632	62,656
Depreciation Expense	1,759,065	1,606,687	152,378
Contractual Expense			
Audit & Computer Maint.	72,800	58,815	13,985
Building rental	35,211	36,603	(1,392)
Equipment rental	88,007	89,207	(1,200)
Legal	4,438	-	4,438
Laboratory	18,489	34,441	(15,952)
Other	175,535	200,655	(25,120)
Total Contractual Expense	394,479	419,721	(25,242)
Retiree Supp. Annuities and health care costs	239,069	662,581	(423,512)
Contribution to Government of Guam	50,000	49,833	167
Total Retiree Benefits	289,069	712,414	(423,345)
Total Operating Expenses	6,931,251	7,209,618	(278,367)
Earnings (Loss) from Operations	2,295,280	1,935,214	360,065
Interest Income-2010/13/14/16/17 Series Bond	355,724	255,374	100,350
Interest Income-Other Funds	77,212	45,645	31,567
Interest Income-SDC	11,657	13,852	(2,194)
Interest Expense- 2010/13/14/16/17 Series Bond	(2,137,785)	(2,177,468)	39,683
Interest Expense- ST BOG	(15,194)	(30,702)	15,508
Federal Expenditures	-	(62,220)	62,220
Loss on Asset Disposal	-	(162,136)	162,136
AFUDC	1,157,306	1,041,766	115,540
Amortization of Discount, Premium and Issuance Costs	119,709	(42,691)	162,400
Defeasance due to bond refunding	(69,534)	(62,043)	(7,490)
Deferred outflows from pension	-	32,592	(32,592)
Prior Year Adjustment	5,316	13,219	(7,903)
Total non-operating revenues (expenses)	(495,588)	(1,134,813)	639,225
Net Income (Loss) before capital contributions	1,799,692	800,402	999,290
Capital Contributions			
Grants from US Government	584,537	1,244,712	(660,175)
Grants from GovGuam & Others	17,468	22,681	(5,213)
Total Capital Contributions	602,004	1,267,392	(665,388)
Change in Net Assets	2,401,696	2,067,794	333,902

Debt Service Calculation		
Earnings From Operations	2,295,280	1,935,214
System Development Charge	(104,797)	(89,249)
Retiree COLA	50,000	49,833
Interest/Investment Income	77,212	45,645
Depreciation	1,759,065	1,606,687
Balance Available for Debt Service per Section 6.12	4,076,759	3,548,131
Working Capital Reserve Available for Debt Service	958,951	945,164
Transfer to Working Capital- Debt Service Reserve	-	-
Transfer to Working Capital- O&M Reserve	-	-
Balance Available for Debt Service inclusive of reserves	5,035,710	4,493,295
Debt Service		
Principal	476,250	433,333
Interest	2,137,785	1,794,910
Total	2,614,035	2,228,243
Debt Service Coverage (1.25X)- per Section 6.12 (Indenture)	1.56	1.59
Debt Service Coverage (1.75X) inclusive of reserves (PUC)	1.93	2.02

GUAM WATERWORKS AUTHORITY
Statement of Operations and Retained Earnings **SCHEDULE D**
Comparative Budget vs. Actual for the period ending June 30, 2019

	Year to Date Budget June-19	Year to Date Actual (Unaudited) June-19	Variance Favorable / (Unfavorable)
OPERATING REVENUES			
Water Revenues	52,319,218	50,284,853	(2,034,365)
Wastewater Revenues	29,225,385	28,967,919	(257,466)
Legislative Surcharge	2,652,001	2,626,732	(25,270)
Other Revenues	344,285	521,218	176,934
System Development Charge	879,953	655,509	(224,444)
Total Operating Revenues	85,420,841	83,056,231	(2,364,611)
OPERATING AND MAINTENANCE EXPENSES			
Water Purchases	5,103,195	4,609,083	494,112
Power Purchases	12,166,836	12,165,974	862
Total Utility Costs	17,270,031	16,775,057	494,974
Salaries and Wages	16,041,286	14,573,095	1,468,191
Pension and Benefits	5,060,140	4,621,746	438,394
Total Salaries and Benefits	21,101,425	19,194,841	1,906,584
Capitalized Labor and Benefits	(2,775,000)	(2,775,000)	-
Net Salaries and Benefits	18,326,425	16,419,841	1,906,584
Administrative and General Expenses			
Sludge removal	1,118,942	1,104,701	14,240
Chemicals	1,672,213	1,543,410	128,803
Materials & Supplies	1,361,450	1,260,793	100,657
Transportation	457,828	455,774	2,054
Communications	135,487	111,859	23,628
Claims	75,750	44,432	31,318
Insurance	715,148	681,845	33,302
Training & Travel	273,750	179,021	94,729
Advertising	112,500	100,804	11,696
Miscellaneous	833,686	757,343	76,342
Regulatory Expense	225,261	137,850	87,411
Bad Debts Provision	1,633,334	1,632,509	825
Total Administrative and General Expense	8,615,348	8,010,342	605,006
Depreciation Expense	15,831,585	15,831,585	(0)
Contractual Expense			
Audit & Computer Maint.	529,051	510,109	18,942
Building rental	345,249	316,897	28,352
Equipment rental	874,817	873,980	837
Legal	11,609	10,754	855
Laboratory	306,762	197,412	109,349
Other	1,921,118	1,871,210	49,908
Total Contractual Expense	3,988,604	3,780,362	208,243
Retiree Supp. Annuities and health care costs	2,248,838	2,137,223	111,615
Contribution to Government of Guam	467,775	450,000	17,775
Total Retiree Benefits	2,716,613	2,587,223	129,390
Total Operating Expenses	66,748,605	63,404,409	3,344,196
Earnings (Loss) from Operations	18,672,236	19,651,822	979,586
Interest Income-2010/13/14/16/17 Series Bond	764,487	3,091,290	2,326,803
Interest Income-Other Funds	124,706	628,576	503,870
Interest Income-SDC	18,646	130,946	112,299
Interest Expense- 2010/13/14/16/17 Series Bond	(21,490,061)	(19,240,061)	2,250,000
Interest Expense- ST BOG	(177,858)	(159,415)	18,442
Federal Expenditures	-	-	-
Loss on Asset Disposal	-	-	-
AFUDC	10,415,750	10,415,750	0
Amortization of Discount, Premium and Issuance Costs	(160,181)	1,077,380	1,237,561
Defeasance due to bond refunding	(145,809)	(625,805)	(479,996)
Deferred outflows from pension	-	-	-
Prior Year Adjustment	-	(279,392)	(279,392)
Total non-operating revenues (expenses)	(10,650,320)	(4,960,733)	5,689,587
Net Income (Loss) before capital contributions	8,021,916	14,691,089	6,669,173
Capital Contributions			
Grants from US Government	49,798,846	11,605,172	(38,193,674)
Grants from GovGuam & Others	-	78,779	78,779
Total Capital Contributions	49,798,846	11,683,951	(38,114,895)
Change in Net Assets	57,820,762	26,375,040	(31,445,722)
Debt Service Calculation			
Earnings From Operations	18,672,236	19,651,822	
System Development Charge	(879,953)	(655,509)	
Retiree COLA	467,775	450,000	
Interest/Investment Income	124,706	628,576	
Depreciation	15,831,585	15,831,585	
Balance Available for Debt Service per Section 6.12	34,216,349	35,906,474	
Working Capital Reserve Available for Debt Service	8,413,300	8,630,559	
Transfer to Working Capital- Debt Service Reserve	-	-	
Transfer to Working Capital- O&M Reserve	-	-	
Balance Available for Debt Service inclusive of reserves	42,629,649	44,537,033	
Debt Service			
Principal	4,286,250	4,286,250	
Interest	19,240,061	19,240,061	
Total	23,526,311	23,526,311	
Debt Service Coverage (1.25X)- per Section 6.12 (Indenture)	1.45	1.53	
Debt Service Coverage (1.75X) inclusive of reserves (PUC)	1.81	1.89	

GUAM WATERWORKS AUTHORITY
Statement of Operations and Retained Earnings
Comparative for the period ending June 30, 2019 and 2018

SCHEDULE E

	Year to Date Actual (Unaudited) June-19	Year to Date Actual (Audited) June-18	Variance Increase / (Decrease)
OPERATING REVENUES			
Water Revenues	50,284,853	49,781,673	503,180
Wastewater Revenues	28,967,919	28,726,054	241,865
Legislative Surcharge	2,626,732	2,602,881	23,851
Other Revenues	521,218	389,647	131,571
System Development Charge	655,509	803,239	(147,730)
Total Operating Revenues	83,056,231	82,303,493	752,738
OPERATING AND MAINTENANCE EXPENSES			
Water Purchases	4,609,083	6,513,731	(1,904,648)
Power Purchases	12,165,974	11,014,865	1,151,109
Total Utility Costs	16,775,057	17,528,595	(753,538)
Salaries and Wages	14,573,095	13,179,810	1,393,285
Pension and Benefits	4,621,746	3,386,394	1,235,352
Total Salaries and Benefits	19,194,841	16,566,204	2,628,637
Capitalized Labor and Benefits	(2,775,000)	(2,665,323)	(109,677)
Net Salaries and Benefits	16,419,841	13,900,881	2,518,960
Administrative and General Expenses			
Sludge removal	1,104,701	1,130,740	(26,039)
Chemicals	1,543,410	1,643,629	(100,219)
Materials & Supplies	1,260,793	1,628,954	(368,161)
Transportation	455,774	576,008	(120,233)
Communications	111,859	132,800	(20,941)
Claims	44,432	97,231	(52,799)
Insurance	681,845	684,045	(2,200)
Training & Travel	179,021	203,869	(24,848)
Advertising	100,804	128,032	(27,227)
Miscellaneous	757,343	761,077	(3,733)
Regulatory Expense	137,850	199,091	(61,241)
Bad Debts Provision	1,632,509	1,622,212	10,297
Total Administrative and General Expense	8,010,342	8,807,687	(797,345)
Depreciation Expense	15,831,585	14,460,187	1,371,398
Contractual Expense			
Audit & Computer Maint.	510,109	529,335	(19,226)
Building rental	316,897	329,427	(12,530)
Equipment rental	873,980	802,861	71,118
Legal	10,754	-	10,754
Laboratory	197,412	309,972	(112,560)
Other	1,871,210	1,805,894	65,316
Total Contractual Expense	3,780,362	3,777,489	2,873
Retiree Supp. Annuities and health care costs	2,137,223	5,963,225	(3,826,003)
Contribution to Government of Guam	450,000	448,500	1,500
Total Retiree Benefits	2,587,223	6,411,725	(3,824,503)
Total Operating Expenses	63,404,409	64,886,564	(1,482,155)
Earnings (Loss) from Operations	19,651,822	17,416,929	2,234,893
Interest Income-2010/13/14/16/17 Series Bond	3,091,290	2,298,368	792,922
Interest Income-Other Funds	628,576	410,804	217,772
Interest Income-SDC	130,946	124,666	6,280
Interest Expense- 2010/13/14/16/17 Series Bond	(19,240,061)	(19,597,210)	357,149
Interest Expense- ST BOG	(159,415)	(276,320)	116,905
Federal Expenditures	-	(559,983)	559,983
Loss on Asset Disposal	-	(1,459,222)	1,459,222
AFUDC	10,415,750	9,375,897	1,039,853
Amortization of Discount, Premium and Issuance Costs	1,077,380	(384,221)	1,461,601
Defeasance due to bond refunding	(625,805)	(558,391)	(67,414)
Deferred outflows from pension	-	293,328	(293,328)
Prior Year Adjustment	(279,392)	118,971	(398,364)
Total non-operating revenues (expenses)	(4,960,733)	(10,213,314)	5,252,581
Net Income (Loss) before capital contributions	14,691,089	7,203,615	7,487,474
Capital Contributions			
Grants from US Government	11,605,172	11,202,406	402,766
Grants from GovGuam & Others	78,779	204,125	(125,346)
Total Capital Contributions	11,683,951	11,406,531	277,420
Change in Net Assets	26,375,040	18,610,145	7,764,894
Debt Service Calculation			
Earnings From Operations	19,651,822	17,416,929	
System Development Charge	(655,509)	(803,239)	
Retiree COLA	450,000	448,500	
Interest/Investment Income	628,576	410,804	
Depreciation	15,831,585	14,460,187	
Balance Available for Debt Service per Section 6.12	35,906,474	31,933,181	
Working Capital Reserve Available for Debt Service	8,630,559	8,506,475	
Transfer to Working Capital- Debt Service Reserve	-	-	
Transfer to Working Capital- O&M Reserve	-	-	
Balance Available for Debt Service inclusive of reserves	44,537,033	40,439,656	
Debt Service			
Principal	4,286,250	3,900,000	
Interest	19,240,061	16,154,190	
Total	23,526,311	20,054,190	
Debt Service Coverage (1.25X)- per Section 6.12 (Indenture)	1.53	1.59	
Debt Service Coverage (1.75X) inclusive of reserves (PUC)	1.89	2.02	

GUAM WATERWORKS AUTHORITY
Restricted and Unrestricted Cash Summary
FY2019

SCHEDULE F

Description	Unaudited June 30, 2019	Audited September 30, 2018	Increase (Decrease)
UNRESTRICTED			
Change Fund	2,000	2,000	-
Petty Cash	5,000	5,000	-
BOG Deposit Accounts	5,371,740	3,087,379	2,284,360
Sub-total Unrestricted	**5,378,739**	**3,094,379**	**2,284,360**
RESTRICTED			
ANZ Bank	134	(0)	134.24
Bank Pacific	14,002	11,864	2,137
Bank of Hawaii	221,454	189,144	32,309
Community First FCU	1,517	4,392	(2,875)
First Hawaiian Bank	14,811	22,105	(7,294)
Bank Pacific Surcharge	683,769	298,898	384,871
Bank Pacific Escrow Deposit	836,130	660,254	175,877
BOG Customer Refunds	1,873,595	1,860,120	13,475
BOG Emergency Reserve Fund	6,235	6,229	6
BOG Sewer Hookup Revolving Fund	66,608	65,499	1,109
BOG Subordinate Security Fund	859,233	859,233	-
BOG Operation and Maintenance Fund	3,083,482	3,083,482	-
BOG OMRRRF Fund	17,423,213	17,423,213	-
BOG Revenue Trust	296,995	360,569	(63,574)
BOG Revenue Trust Fund	8,092,125	6,535,779	1,556,346
BOG Capital Improvement Revenue Fund	6,332,642	1,582,278	4,750,364
BOG O & M Reserve	13,865,457	13,666,109	199,348
BOG Debt Service Reserve	11,507,412	11,341,967	165,445
BOG CapEx Fund	11,543,583	16,073,011	(4,529,428)
	76,722,395	**74,044,146**	**2,678,248**
BOG - SDC Deposit	2,925,539	2,934,848	(9,309)
BOG - SDC CDs	7,250,000	7,250,000	-
Total SDC	**10,175,539**	**10,184,848**	**(9,309)**
Total Restricted	**86,897,934**	**84,228,994**	**2,668,940**
Reserve Funds			
BOG Series 13 Construction Fund	19,866,135	36,222,062	(16,355,927)
BOG Series 14 Refunding Construction Fund	322,067	741,895	(419,828)
BOG Series 16 Construction Fund	98,200,001	116,036,000	(17,835,999)
BOG Series 17 Refunding Construction Fund	6,774,683	6,753,709	20,974
Total Restricted - Held by Trustee	**125,162,887**	**159,753,667**	**(34,590,780)**
USB Series 2013 Debt Service Fund	4,730,484	2,360,451	2,370,033
USB Series 2013 Debt Service Reserve Fund	12,031,688	12,031,688	-
USB Series 2014 Refunding Debt Service Fund	5,488,068	1,833,235	3,654,833
USB Series 2014 Refunding Debt Service Reserve Fund	7,912,929	7,972,243	(59,314)
USB Series 2016 Debt Service Fund	3,625,335	1,805,556	1,819,779
USB Series 2016 Debt Service Reserve Fund	7,592,000	7,594,603	(2,603)
USB Series 2010 Debt Service Fund	1,914,774	503,751	1,411,023
USB Series 2017 Refunding Debt Service Reserve Fund	7,566,460	7,566,460	-
USB Series 2017 Debt Service Fund	3,020,558	1,429,927	1,590,631
Total Investments	**53,882,296**	**43,097,913**	**10,784,383**
Total Restricted and Unrestricted Cash	**271,321,856**	**290,174,953**	**(18,853,097)**

Guam Waterworks Authority
Accounts Receivable - Government
June 30, 2019

SCHEDULE G

		AGING					
Customer Name	**No of Accounts**	**Current**	**31-60 days**	**61-90 days**	**91-120 days**	**Over 120 days**	**Total**
Guam Int'l Airport Authority	8	$ 56,748	$ 48,710	$ 26,077	$ 24,844	$ 261,879	$ 418,258
Guam Power Authority	24	159,027	0	-	-	-	159,027
Guam Memorial Hospital Authority	3	40,124	2,055	-	-	-	42,178
Guam Community College	3	3,524	2,411	-	-	-	5,935
Guam Housing & Urban Renewal Authority	9	366	-	-	-	-	366
Port Authority of Guam	5	302	-	-	-	-	302
Total Autonomous Agencies	**52**	**$ 260,090**	**$ 53,176**	**$ 26,077**	**$ 24,844**	**$ 261,879**	**$ 626,066**
Department of Education	53	$ 235,831	$ 212,632	$ 334,081	$ 71,356	$ 43,127	$ 897,027
Department of Public Health & Social Services	8	1,670	968	797	384	103,661	107,481
Mayors Council of Guam	60	14,453	3,173	22,170	40,221	32	80,049
Department of Parks & Recreation	17	29,876	1,302	733	-	-	31,911
Department of Public Works	11	15,113	3,206	-	-	-	18,319
Guam Fire Department	11	11,289	3,535	-	-	-	14,824
Office of the Governor	2	9,634	2,076	-	-	-	11,710
Department of Chamorro Affairs	7	7,421	-	-	-	-	7,421
Sanctuary Inc	1	5,409	-	-	-	-	5,409
Department of Agriculture	6	2,088	-	-	-	-	2,088
Department of Military Affairs/GUARNG	1	1,946	-	-	-	-	1,946
Guam Police Department	7	999	-	-	-	-	999
Division of Senior Citizens, DPH&SS	2	475	195	155	-	-	826
Department of Mental Health	2	298	306	-	-	-	604
Guam Public Library	6	587	-	-	-	-	587
Office of Civil Defense	2	519	-	-	-	-	519
Guam Veterans Affairs Office	2	370	-	-	-	-	370
Department of Administration	2	309	-	-	-	-	309
Guam Enviromental Protection Agency	2	276	-	-	-	-	276
Guam Energy Office	1	240	-	-	-	-	240
The Office of the Dededo Mayor	1	165	-	-	-	-	165
Merizo Mayor	1	60	68	-	-	-	128
Department of Corrections	8	107	-	-	-	-	107
Vietnam Veterans of America	1	28	-	-	-	-	28
Total Line Agencies	**214**	**$ 339,162**	**$ 227,461**	**$ 357,936**	**$ 111,961**	**$ 146,821**	**$ 1,183,341**
Total as of June 30, 2019	**266**	**$ 599,252**	**$ 280,637**	**$ 384,012**	**$ 136,805**	**$ 408,700**	**$ 1,809,407**
Total as of September 30, 2018	**326**	**$ 793,948**	**$ 424,797**	**$ 324,413**	**$ 190,444**	**$ 975,977**	**$ 2,709,580**
% Change	-18%	-25%	-34%	18%	-28%	-58%	-33%

Guam Waterworks Authority
System Development Charges Project Status
As of June 30, 2019

SCHEDULE H

PROJECT NAME	Available Project Funds	Total Expenditures	Total Outstanding Encumbrances	Total Expenditures and Encumbrances	Total Unobligated Funds
SDC - Water					
Central Guam Reservoirs		-	280,040	280,040	
Line Replacement Phase IV		-	256,937	256,937	
South Paulino Heights Waterline Upgrade		56,568	4,135	60,703	
	$ 5,948,220	**$ 56,568**	**$ 541,112**	**$ 597,680**	**$ 5,350,540**
SDC - Wastewater					
Agat-Santa Rita Wastewater Treatment Plant Replacement		486,196	1,133,847	1,620,043	
Baza Gardens Wastewater Cross Island Pumping & Conveyance		668,575	472,701	1,141,276	
Route 4 Relief Sewerline Rehab & Replacement		-	399,869	399,869	
Northern WWTP (Land Purchase)		1,000,000	-	1,000,000	
Talofofo Sewer Improvement		-	241,142	241,142	
		-	-	-	
	$ 6,088,186	**$ 2,154,770**	**$ 2,247,559**	**$ 4,402,329**	**$ 1,685,857**
Grand Totals	**$ 12,036,406**	**$ 2,211,338**	**$ 2,788,671**	**$ 5,000,009**	**$ 7,036,397**

Future planned projects	**2019**
Water Wells	$ 1,850,000
Water Dist Sys Pipe Replacement & Upgrades	1,850,000
WWTP Priority 1 Upgrades	1,000,000
Umatac Merizo STP Replacement	1,000,000
Wastewater Sewer System Expansion	1,000,000
	$ 6,700,000

GUAM WATERWORKS AUTHORITY
"Better Water, Better Lives."
Gloria B. Nelson Public Service Building| 688 Route 15 | Mangilao, Guam 96913
Tel: (671) 300-6846

Issues for Decision

Resolution No. 38- FY2019
Relative to Approval of Fire Hydrant (Dry Barrel) Replacement Project Phase I, GWA Project No. W19-002-BND

What is the project's objective and is it necessary and urgent?
The Objective of the project is for GWA to replace old, leaking or non-functioning fire hydrants (dry barrel type). GWA has approximately 3,800 fire hydrants throughout the island which were visually inspected and categorized by their condition ranging from "Excellent" to "Extremely Poor". GWA Water Distribution Operations has been able to replace approximately 300 wet barrel fire hydrants from the condition assessment list in several villages due to the simplicity of just changing out the hydrant body. Replacement of dry barrel fire hydrants, however, is more complicated as the work involves additional construction activities such as trenching, pipe and valve replacement, and pavement/concrete demolition and restoration. GWA crews are able to do these types of work activities however commitment of O&M operations crew would take time away from normal operations duties thus the procurement of a contractor to do the work was determined to be more effective for advancing the hydrant replacement program.

Where is the location?
Hydrant Replacements will occur in the villages of Barrigada, Mangilao, Mongmong-Toto-Maite, Yona, Tamuning, Dededo and Chalan Pago.

How much will it cost?
The lowest bid proposal submitted that was deemed responsive and responsible was by Mega United Corporation of One Million Two Hundred Forty-Two Thousand Six Hundred Seventy Dollars ($1,242,670.00). GWA management also seeks a ten percent (10%) contingency or One Hundred Twenty-Four Thousand Two Hundred Sixty-Seven Dollars ($124,267.00) to bring the total authorized funding request to One Million Three Hundred Sixty-Six Thousand Nine Hundred Thirty-Seven Dollars ($1,366,937.00).

When will it be completed?
The contractor is given 365 days to completed all work from the time the "Notice to Proceed" is issued.

What is the funding source?
Funding for this project will be from Bonds funds and revenue funds.

The RFP/BID responses (if applicable):
8 IFB packages picked up, 3 bid proposals submitted.

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671)649-3002 | guamccu.org

GWA RESOLUTION NO. 38-FY2019

RELATIVE TO APPROVAL OF FIRE HYDRANT (DRY BARREL) REPLACEMENT PROJECT PHASE I, GWA PROJECT NO. W19-002-BND

WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities ("CCU") has plenary authority over financial, contractual, and policy matters relative to the Guam Waterworks Authority ("GWA"); and

WHEREAS, the Guam Waterworks Authority ("GWA") is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, GWA has approximately 3,800 fire hydrants throughout the island which were inspected and categorized in 2013-2014 by CDM Smiths as part of a system evaluation Task Order with USEPA and where the condition of the hydrants ranged from "Excellent" to "Extremely Poor"; and

WHEREAS, GWA Water Distribution Operations has been able to replace approximately 300 wet barrel fire hydrants from the condition assessment list in several villages where the simple changing out the hydrant body makes replacement relatively easy; and

WHEREAS, GWA Water Distribution Operations has managed to change out a much smaller number of dry barrel fire hydrants when critically required, however, replacement of dry barrel fire hydrants is much more complex, and in many cases involves more construction activities such as trenching, pipe and valve replacement, pavement/concrete demolition and restoration; and

WHEREAS, GWA finds this type of more complex hydrant replacement work to be more efficiently and effectively conducted by contractors as opposed to GWA operations; and

WHEREAS, on March 20, 2019, GWA advertised the Invitation to Bid IFB-03-ENG-2019 for the Fire Hydrant Replacement Phase I soliciting bid proposals from experienced and responsive bidders to replace fire hydrants, particularly 78 dry barrel type fire hydrants; and

WHEREAS, this project consists of furnishing all labor, tools, equipment and materials, necessary to install new wet barrel fire hydrants to replace dry barrel fire hydrants in the villages of Barrigada, Mangilao, Mongmong-Toto-Maite, Yona, Tamuning, Dededo and Chalan Pago, including coordination with GWA Water Distribution Operations, GWA Engineering, the Department of Public Works and the Guam Fire Department, if necessary; and

WHEREAS, IFB packages were obtained by multiple interested parties, from which GWA received bid proposals from three (3) parties (SEE EXHIBIT A – Abstract of Bids) before the bid proposal deadline; and

WHEREAS, GWA Engineering analyzed the bid proposals received and determined that the bid package submitted by Mega United Corporation was the lowest responsive and responsible bid and met all the bid requirements set forth by GWA; and

WHEREAS, GWA Management seeks CCU approval of Mega United Corporation's bid proposal (SEE EXHIBIT B - Bid Proposal) of One Million Two Hundred Forty-Two Thousand Six Hundred Seventy Dollars ($1,242,670.00), plus the ten percent (10%) contingency of One Hundred Twenty-Four Thousand Two Hundred Sixty-Seven Dollars ($124,267.00), to bring the total authorized funding amount to One Million Three Hundred Sixty-Six Thousand Nine Hundred Thirty-Seven Dollars ($1,366,937.00); and

WHEREAS, GWA Management further seeks CCU approval to petition the Public Utilities Commission approval of the contact given this project meets the Contract Review Protocol requirements for GWA projects for which the use of Bond funds is intended; and

WHEREAS, funding for this project will utilize Bonds funds and revenue funds.

//

NOW BE IT THEREFORE RESOLVED, the Consolidated Commission on Utilities does hereby approve the following:

1. The recitals set forth above hereby constitute the findings of the CCU.
2. The CCU finds that the terms and conditions set by GWA relative to commencement of work activities are fair and reasonable and serve as a measure of Quality Assurance/Quality Control (QA/QC).
3. The CCU hereby authorizes the management of GWA to accept the bid proposals from Mega United Corporation (Exhibit B).
4. The CCU hereby further authorizes the management of GWA to enter into a contract with Mega United Corporation in the amount of One Million Two Hundred Forty-Two Thousand Six Hundred Seventy Dollars ($1,242,670.00).
5. The CCU hereby further approves the funding of One Million Two Hundred Forty-Two Thousand Six Hundred Seventy Dollars ($1,242,670.00), plus the 10% contingency of One Hundred Twenty-Four Thousand Two Hundred Sixty-Seven Dollars ($124,267.00), to bring the total authorized funding amount to One Million Three Hundred Sixty-Six Thousand Nine Hundred Thirty-Seven Dollars ($1,366,937.00).
6. The CCU hereby further approves the funding for this project will be from the Bonds funds and Internally Funded CIP funds.
7. The CCU hereby further approves GWA management petition the PUC's approval of the project and contract proposal.

RESOLVED, that the Chairman certified and the Board Secretary attests to the adoption of this Resolution.

DULY AND REGULARLY ADOPTED, this 23rd day of July, 2019.

Certified by:

_____
JOSEPH T. DUENAS
Chairperson

Attested by:

_____
MICHAEL T. LIMTIACO
Secretary

SECRETARY'S CERTIFICATE

I, Michael T. Limtiaco, Board Secretary of the Consolidated Commission on Utilities as evidenced by my signature above do hereby certify as follows:

The foregoing is a full, true and accurate copy of the resolution duly adopted at a regular meeting by the members of the Guam Consolidated Commission on Utilities, duly and legally held at a place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

AYES: _____

NAYS: _____

ABSTENTIONS: _____

ABSENT: _____

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GUAM WATERWORKS AUTHORITY

ABSTRACT OF BIDS

Exhibit A (1 of 1)

ORIGINAL

Project Name: **FIRE HYDRANT REPLACEMENT - PHASE I**
Project Number: W19-002-BND IFB NO.: IFB-03-ENG-2019

Bid Opening Date: May 23, 2019
Time: 3:00 PM

	Bidders Name	Section A-5 Bid Bond	CERTIFICATIONS								Addendum		TOTAL AMOUNT OF BID
			Qualification Statement	Non Collusion Affidavit	EEO Certification	Non Segregated Facilities	Sex Offender Certification	Wage and Benefit Determination'	Major Shareholder Affidavit	Special Instructions to Bidders	1	2	
1.	CANTON CONSTRUCTION	FIRST NET INS. CO. 15% OF TOTAL BID AMT.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	$1,548,330
2.	JMI EDISON	----------		—		NO BID		—					
3.	MEGA UNITED CORPORATION	FIRST NET INS. CO. 15% OF TOTAL BID AMT.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	$1,242,670
4.	GIANT CONST. CORP. ~~PROPACIFIC BUILDER CORPORATION~~	PACIFIC INDEMNITY INS. 15% OF ACCOMP. BID	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	$2,294,400
5.	FRONTIER SUPPLY CO.	----------	—	—	NO BID			—					
6.	PROPACIFIC BUILDER CORP ~~GIANT CONSTRUCTION COSRPORATION~~	----------	—	—	NO BID			—					
7.	CRW TRADING	----------	—	—	No BID			—					
8.	KORANDO CORPORATION	----------	—	—	No BID			—					
	GWA ESTIMATE												$1,244,100

Bids Opened and Read by:
GLORIA B. BENSAN
(Name and Signature)

Tabulated By:
SYLVIA T. MERCADO
(Name and Signature)

GWA Procurement Representative:
ROLAND F. LUMONGSUD
(Name and Signature)

Witnesses: (Name and Signature)
BOBBY LUJAN
CARLOS CHARFAUROS

BID FORM Exhibit B (1 of 7)

BID RECIPIENT

This Bid is submitted to:

Guam Waterworks Authority
Engineering Division, Room 202
Gloria B. Nelson Public Service Building
688 Route 15
Mangilao, Guam 96913

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with Buyer in the form included in the Bidding Documents to furnish the Goods and Special Services as specified or indicated in the Bidding Documents, for the prices and within the times indicated in this Bid, and in accordance with the other terms and conditions of the Bidding Documents.

BIDDER'S ACKNOWLEDGMENTS

Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Buyer.

BIDDER'S REPRESENTATIONS

In submitting this Bid, Bidder represents that:

Bidder has examined and carefully studied the Bidding Documents, the related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date
ADDENDUM No. 1	APRIL 25, 2019
ADDENDUM No. 2	MAY 2, 2019

Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided and become familiar with and is satisfied as to the observable local conditions that may affect cost, progress, or the furnishing of Goods and Special Services, if required to do so by the Bidding Documents, or if, in Bidder's judgment, any local condition may affect cost, progress, or the furnishing of Goods and Special Services.

Bidder is familiar with and is satisfied as to all Laws and Regulations in effect as of the date of the Bid that may affect cost, progress, and the furnishing of Goods and Special Services.

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Exhibit B (2 of 7)

Bidder has carefully studied, considered, and correlated the information known to Bidder; information commonly known to sellers of similar goods doing business in the locality of the Point of Destination and the site where the Goods will be installed or where Special Services will be provided; information and observations obtained from Bidder's visits, if any, to the Point of Destination and the site where the Goods will be installed or Special Services will be provided; and any reports and drawings identified in the Bidding Documents regarding the Point of Destination and the site where the Goods will be installed or where Special Services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of Seller's obligations under the Bidding Documents.

Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.

The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing the Goods and Special Services for which this Bid is submitted.

BIDDER'S CERTIFICATIONS

Bidder certifies that:

This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

Bidder has not solicited or induced any individual or entity to refrain from bidding; and

Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.

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Fire Hydrant Replacement - Phase I
GWA Project No. W19-002-BND
BID SCHEDULE

Pay Item	Description	Base Bid Qty	Unit	Unit Cost	Sub-Total
1.0 General Requirements					
1.1	**Mobilization**	1	LS	$ 12,955.50	$ 12,955.50
1.2	**Bonding fee and insurance**	1	LS	$ 98,975.00	$ 98,975.00
1.3	**Permit application fee**	1	LS	$ 17,325.00	$ 17,325.00
1.4	**Traffic control**	1	LS	$ 10,500.00	$ 10,500.00
1.5	**Right of Way Confirmation**	1	LS	$ 4,500.00	$ 4,500.00
1.7	**Demobilization**	1	LS	$ 12,955.50	$ 12,955.50
2.0 Dry Barrel Replacement					
2.1	**Dry Barrel Fire Hydrant Removal:** Excavate, expose, remove and dispose the entire existing dry barrel fire hydrant assemblies from the above grade fire hydrant barrel to the main pipe connection point (See index of hydrant location).	78	each	$ 2,100.00	$ 163,800.00
2.2	**Wet Barrel Fire Hydrant Installation:** **a.)** OFCI, Owner Furnished Contractor Installed; GWA will furnished the wet barrel fire hydrant body, flange end with 6 holes complete with nuts and bolts. **b.)** The contractor will furnish and install the additional materials from the breakaway flange, 6" DIP or PVC C-900 restrained joints vertical leg (flange end 6 holes with bolts and nuts), 6"X6" 90 degree elbow, hydrant spool pipe 6" DIP or PVC C-900 pipe with restrained joints, 6" gate valve, valve box, valve box frame and cover, tapping sleeve (MJ Connection), tapping valve valve (MJXMJ), hydrant connection for water main with MJ Tee, DIP Nipple, gatevalve (MJXMJ), tie rods and 8"X6" reducer as needed, complete in placed with base, sub- based preparation, basecourse, bedding sand,compaction and compaction test complete in place. To include all government engineer, inspector and maintenance crew overtime.	78	each	$ 8,408.00	$ 655,824.00

CCU Regular Meeting July 23, 2019 - GWA

Exhibit B (3 of 7)

2.3	**Concrete Pad**: 3'X3'X6" Square Concrete Pad to be constructed around fire hydrant's center line when not located within sidewalk or concrete area, complete with #10; 6/6 WWF rebar and 1/2" premolded expansion joint with 1" top filler.	1	LS	$ 23,400.00	$ 23,400.00	✓
2.4	**Concrete Thrust Blocks** : Approximate 2'X2'X3' to be poured against undisturbed earth to support 90 degree elbow, 6" gate alve and connection point, including 16"X16"X4" bottom concrete slab for 90 degree elbow, all work complete in placed.	1	LS	$ 15,000.00	$ 15,000.00	✓
2.5	**Top slab:** 4" to 6" at finished grade below the breakline of the hydrant complete in place.	78	each	$ 576.92	$ 45,000.00	44,999.76
2.6	**Bollards:** Pipe bollards 4 pcs. each hydrant; 6" outside diameter steel pipe filled with solid concrete complete with Dome Top Reflective Bollard Covers (1/8" Wall thickness), 6-65/8" diameter with two silver reflective tape complete in placed with concrete foundation as per standards.	78	each	$ 673.08	$ 52,500.00	52,500.24
2.7	**Blue Pavement Markers**: Install blue pavement reflector as hydrant locator as per DPW Standard.	78	each	$ 20.00	$ 1,560.00	✓
2.8	**Fire Hydrant Name Tag**	78	Each	$ 15.00	$ 1,170.00	✓
3.0 Project Completion						
3.1	**Concrete Repair**: Sidewalk, curb and gutter concrete repair.	1	LS	$ 10,000.00	$ 10,000.00	✓
3.2	**Permanent Road Restoration,** asphalt or concrete paving to match existing complete with base and sub-based preparation, backfil materials, base course, compaction and compaction test complete in placed as needed.	1	LS	$ 57,300.00	$ 57,260.00	✓
3.3	**Incidental Work:** Flowable fill concrete and temporary steel plate cover as needed.	1	LS	$ 8,000.00	$ 8,000.00	✓
3.4	**Testing:** Conduct fire flow test for each hydrant and disinfection.	1	LS	$ 79,905.00	$ 79,905.00	✓
3.5	**Asbestos:** Removal, handling, hauling and disposal	1	each	$ 22,000.00	$ 22,000.00	✓
	TOTAL AMOUNT OF BID				$1,242,670.00	

Total Amount of Bid:

ONE MILLION TWO HUNDRED FOURTY TWO THOUSAND SIX HUNDRED SEVENTY DOLAR

(in words)

Exhibit B (4 of 7)

Exhibit B (5 of 7)

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents. Bidder also acknowledges that each unit price includes an amount considered by Bidder to be adequate to cover Bidder's overhead and profit for each separately identified item.

TIME OF COMPLETION

Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule set forth in Article 5 of the Agreement.

Bidder accepts the provisions of the Agreement as to liquidated damages.

ATTACHMENTS TO THIS BID

The following documents are attached to and made a condition of this Bid:

Required Bid security in the form of 15% of the Total Bid Amount 1,242,670.00

List of Proposed Major Suppliers;

Required Bidder Qualification Statement with Supporting Data.

DEFINED TERMS

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

BID SUBMITTAL

This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual's signature)

Doing business as: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

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Exhibit B (6 of 7)

A Partnership

Partnership Name: _____ (SEAL)

By: _____
(Signature of general partner - attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

A Corporation

Corporation Name: MEGA UNITED CORPORATION

State of Incorporation: GUAM

Type (General Business, Professional, Service, other): CORPORATION

By: _____
(Signature - attach evidence of authority to sign)

Name (typed or printed): ZUMIN ZHANG

Title: PRESIDENT

(CORPORATE SEAL)

Attest Minhui Wang
(Signature of Corporate Secretary)

Business address: IXORA INDUSTRIAL PARK

215 ROJAS ST. SUITE 208 HARMON GUAM 96913

Phone: 689 3293 Facsimile: 649 0387

E-mail address: wmh@netpci.com

A Limited Liability Company (LLC)

LLC Name: _____

State in which organized: _____

By: _____
(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

EJCDC P-400, Suggested Bid Form for Procurement Contracts.
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Exhibit B (7 of 7)

A Joint Venture

First Joint Venturer Name: _____ (SEAL)

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____

(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

Phone and Facsimile Number, and Address for receipt of official communications to Joint Venture: _____

_____

_____

(Each joint venturer must sign. The manner of signing for each individual, partnership, corporation, and limited liability company that is a party to the joint venture should be in the manner indicated above.)

EJCDC P-400, Suggested Bid Form for Procurement Contracts.
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GUAM WATERWORKS AUTHORITY
"Better Water, Better Lives."
Gloria B. Nelson Public Service Building| 688 Route 15 | Mangilao, Guam 96913
Tel: (671) 300-6846

Issues for Decision

Resolution No. 39-FY2019
Relative to Approval of the Contract with Total Chemical Resources, Inc. and JMI Edison for the Purchase of Wastewater Chemicals for Wastewater Treatment Plants.

What is the project's objective and is it necessary and urgent?
The objective is to provide wastewater treatment chemicals to the Northern District and Hagåtña WWTPs for chemically enhanced primary treatment as required by USEPA and specified in § II A Paragraphs 2 and 5 of the 2011 Court Order, and to the Agat-Santa Rita Wastewater Treatment Plants for secondary treatment to ensure the reduction of solids and the discharge of effluent complying with permits for those facilities.

Where is the location?
Northern District, Hagåtña and Agat-Santa Rita Wastewater Treatment Plants.

How much will it cost?
Two Million Six Hundred Twenty-Seven Thousand Five Hundred Thirty-Six Dollars and Fifty-Six Cents ($2,627,536.56) for Inorganic Coagulant for three years based on an estimated annual consumption of 803,528 at $1.09 per pound with Total Chemical Resources, Inc. and One Million Sixty-Four Thousand Fifty-Three Dollars and Fifty-Three Cents ($1,064,053.53) for Anionic Polymer for three years based on the annual consumption of 111,763 at $1.16 per pound and Cationic Polymer at an annual consumption of 138,061 at $1.63 per pound with JMI Edison.

GWA management is also seeking a ten percent (10%) contingency in the amount of $262,753.66 for the contract with Total Chemicals bringing the total authorized funding to Two Million Eight Hundred Ninety Thousand Two Hundred Ninety Dollars and Twenty-Two Cents ($2,890,290.22) and an amount of $106,405.35 for the contract with JMI Edison which would bring the total authorized funding to One Million One Hundred Seventy Thousand Four Hundred Fifty-Eight Dollars and Eighty-Eight Cents ($1,170,458.88).

When will it be completed?
Three (3) years with two (2) one (1) year options to renew.

What is the funding source?
O & M

The RFP/BID responses (if applicable):
9 downloaded
2 submitted
Total Chemical Resources, Inc was awarded the bid for Inorganic Coagulant ("ACH")
JMI Edison was awarded the bid for Anionic Polymer and Cationic Polymer.

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671)649-3002 | guamccu.org

RESOLUTION NO. 39-FY2019

RELATIVE TO APPROVAL OF THE CONTRACT WITH TOTAL CHEMICAL RESOURCES, INC. AND JMI-EDISON FOR THE PURCHASE OF WASTEWATER CHEMICALS FOR WASTEWATER TREATMENT PLANTS

WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities ("CCU") has plenary authority over financial, contractual, and policy matters relative to the Guam Waterworks Authority ("GWA"); and

WHEREAS, the Guam Waterworks Authority ("GWA") is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, GWA currently has a number of critical 2011 Court Order ("CO") Projects, including system upgrades at the Northern District Wastewater Treatment Plant (NDWWTP) and the Hagåtña Wastewater Treatment Plant (HWWTP) to use Chemically Enhanced Primary Treatment as specified in § II A Paragraphs 2 and 5 of the CO; and

WHEREAS, GWA has completed the system upgrades of both WWTPs to use Chemical Enhanced Primary Treatment and is now operating the plants as specified in the CO; and

WHEREAS, the Chemically Enhanced Primary Treatment requires the purchase of chemicals for the application of the treatment process at the NDWWTP, and the HWWTP; and

WHEREAS, the secondary treatment process employed at GWA's newest treatment plant, the Agat-Santa Rita Wastewater Treatment Plant (ASRWWTP), will also require the use of these chemicals; and

WHEREAS, GWA issued Bid Number 2019-17 to solicit bid proposals from experienced and responsive bidders to provide chemicals necessary to continue to operate the Northern District WWTP, the Hagåtña WWTP and the Agat-Santa Rita WWTP in compliance with the Court Order; and

WHEREAS, there were two responsive and responsible bidders who offered chemicals meeting the requirements in IFB 2019-17 (see Exhibit A); and

WHEREAS, the IFB 2019-17 offers were evaluated by GWA's review committee who determined that the best offer for Inorganic Coagulant ("ACH") (for sludge dewatering) was made by Total Chemical Resources, Inc. ("Total Chemicals"); and

WHEREAS, the committee also determined that the best offer for Anionic and Cationic Polymer was made by JMI-Edison ("JMI"); and

WHEREAS, GWA accepted Total Chemical's bid proposal (see Exhibit B) of $1.09/lb. to supply Inorganic Coagulant for an estimated annual cost of Eight Hundred Seventy-Five Thousand Eight Hundred Forty-Five Dollars and Fifty-Two Cents ($875,845.52), and for a three (3) year contract totaling Two Million Six Hundred Twenty-Seven Thousand Five Hundred Thirty-Six Dollars and Fifty-Six Cents ($2,627,536.56);

WHEREAS, GWA also accepted JMI Edison's bid proposal (see Exhibit C) of $1.16/lb. for Anionic Polymer at an estimated annual cost of One Hundred Twenty-Nine Thousand Six Hundred Forty-Five Dollars and Eight Cents ($129,645.08), and for a three (3) year contract in the amount of Three Hundred Eighty-Eight Thousand Nine Hundred Thirty-Five Dollars and Twenty-Four Cents ($388,935.24), and Cationic Polymer at 1.63/lb. for an estimated annual cost of Two Hundred Twenty-Five Thousand Thirty-Nine Dollars and Forty-Three Cents ($225,039.43), for a three (3) year contract in the amount of Six Hundred Seventy-Five Thousand One Hundred Eighteen Dollars and Twenty-Nine Cents ($675,118.29), which brings the grand total to One Million Sixty-Four Thousand Fifty-Three Dollars and Fifty-Three Cents ($1,064,053.53); and

WHEREAS, GWA Management seeks CCU approval of Total Chemical's Contract in the amount of Two Million Six Hundred Twenty-Seven Thousand Five Hundred Thirty-Six Dollars and Fifty-Six Cents ($2,627,536.56) for the purchase of Inorganic Coagulant ("ACH"), plus a ten percent (10%) contingency totaling Two Million Eight Hundred Ninety Thousand Two Hundred Ninety Dollars and Twenty-Two Cents ($2,890,290.22) for three (3) years, with the option to renew an additional two (2) one (1) year term; and

WHEREAS, GWA Management further seeks CCU approval of JMI Edison's Contract in the amount of One Million Sixty-Four Thousand Fifty-Three Dollars and Fifty-Three Cents ($1,064,053.53) for the purchase of Anionic Polymer and Cationic Polymer, plus a ten percent (10%) contingency with a total cost of One Million One Hundred Seventy Thousand Four Hundred Fifty-Eight Dollars and Eighty-Eight Cents ($1,170,458.88) for a three (3) year contract, with the option to renew for an additional two (2) one (1) year term; and

WHEREAS, the source of funding for the purchase of wastewater chemicals will be from the GWA Operations and Maintenance Budget (revenue funds).

NOW BE IT THEREFORE RESOLVED, the Consolidated Commission on Utilities does hereby approve the following:

1. The recitals set forth above hereby constitute the findings of the CCU.
2. The CCU hereby finds that the terms of the bid proposals submitted by Total Chemical Resources, Inc and JMI Edison are fair and reasonable.
3. The CCU hereby authorizes the management of GWA to proceed based on the notice of award to Total Chemical Resources, Inc. attached hereto as Exhibit D, and the notice of award to JMI Edison attached hereto as Exhibit E both of which are incorporated into this Resolution in its entirety.
4. The CCU hereby further authorizes the management of GWA to enter into a contract with Total Chemical Resources, Inc. to purchase chemicals in the amount of Two Million Eight Hundred Ninety Thousand Two Hundred Ninety Dollars and Twenty-Two Cents ($2,890,290.22) for three (3) years, with the option to renew an additional two (2) one (1) year terms.

5. The CCU hereby further authorizes the management of GWA to enter into a Contract with JMI Edison to purchase chemicals in the amount of One Million One Hundred Seventy Thousand Four Hundred Fifty-Eight Dollars and Eighty-Eight Cents ($1,170,458.88) for three (3) years, with the option to renew an additional two (2) one (1) year terms.
6. GWA Management is hereby authorized to seek PUC approval as required by Docket No. 00-04.

RESOLVED, that the Chairman certified and the Board Secretary attests to the adoption of this Resolution.

DULY AND REGULARLY ADOPTED, this 23rd day of July, 2019.

Certified by:

JOSEPH T. DUENAS
Chairperson

Attested by:

MICHAEL T. LIMTIACO
Secretary

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SECRETARY'S CERTIFICATE

I, Michael T. Limtiaco, Board Secretary of the Consolidated Commission on Utilities as evidenced by my signature above do hereby certify as follows:

The foregoing is a full, true and accurate copy of the resolution duly adopted at a regular meeting by the members of the Guam Consolidated Commission on Utilities, duly and legally held at a place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

AYES: _____

NAYS: _____

ABSTENTIONS: _____

ABSENT: _____

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EXHIBIT A

GUAM WATERWORKS AUTHORITY
"Better Water. Better Lives."
Gloria B. Nelson Public Services Building
688 Route 15, Mangilao, Guam 96913

MEMORANDUM

TO: General Manager

VIA: Supply Management Administrator

FROM: Evaluation Committee Members

SUBJECT: Invitation to Bid No. GWA 2019-17
Ref: Wastewater Treatment Chemicals (IDQ)

REF: Recommendation of Award

DATE: July 3, 2019

Invitation for Bid No: GWA 2019-17 was officially announced and advertised in the Pacific Daily News, Guam Daily Post and Guam Waterworks Authority Website on April 17, 2019, subject bid opened as scheduled on June 11, 2019 @ 2:00 pm. Nineteen (19) prospective bidder expressed interest, namely:

Bidders Register:

1. Guam Pacific Enterprise
2. JMI Edison
3. Frontier Supply Company
4. Total Chemical Resources
5. Gulbrandsen Technologies India PVT LTD
6. Jacobs Engineering Group
7. Indigo Piping System
8. EOSI
9. Thatcher Company Inc
10. Evoqua Water Technologies
11. Shay Enterprises
12. Dubois Chemicals Inc
13. Deltek Inc
14. MD Wholesale
15. Megha
16. BIB
17. Pryzm Consulting
18. Light Source
19. Carbon Activated Corporation

Of the Nineteen (19) only Two (2) submitted their bid package, namely:

- JMI Edison Guam
- Total Chemical Resources

An evaluation committee convene on June 21, 2019 @ 10:00, thereby determined JMI Edison Guam and Total Chemical Resources bid proposal deemed responsive and complied with all requirements set for in the IFB cost proposals as follows:

JMI Edison, submitted the lowest cost on Line Item Nos: 2 and 3

Total Chemical Resources, submitted the lowest cost Line Item No: 1

BID FORM FOR CHEMICALS FOR GWA'S NDWWTP, HWWTP & ASRWWTP

JMI Edison cost submittal

Item No. 2: Coagulant Aid (e.g. anionic polymer)
Price per pound delivered CIF: **$1.16**
Product Label Name: Hydrex 6104 Anionic Emulsion Polymer

$1.16 x 125,789 lbs. = $145,915.24 (Annual Cost)
$145,915.24 x 3 years = $437,745.72

Item No. 3: Cationic Polymer
Price per pound delivered CIF: **$1.63**
Product Label Name: Hydrex 6402 Cationic Emulsion Polymers

$1.63 x 138,061 lbs. = $225,039.43 (Annual Cost)
$225,039.43 x 3 years = $675,118.29

Total Chemical Resources cost submittal:

Item No. 1: Inorganic Coagulant
Product ACH Powder (ACHIEVE D1012)
Price per pound delivered CIF: **$1.09**
Product Label Name: ACHIEVE D1012 ACH POWDER

$1.09 x 803,528 lbs. = $875,845.52 (Annual Cost)
$875,845.52 x 3 years = $2,627,536.56

Grand Total: $1,246,800.19 (Annually)

Three (3) Year Contract: $3,740,400.57

End of Evaluation:

NOTE: Subject for CCU and PUC approval.

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Concurred and accepted by the committee members:

07/08/2019
Paul Kemp, Assistant General Manager

7/8/19
Dave Fletcher, Wastewater Treatment Manager

7/8/19
Daniel Aguon, Wastewater Treatment Supervisor

Antonio C. Camacho, Buyer II

Roland F. Lumongsud, Buyer II

Your approval is greatly appreciated.

Mary D. Torres

Reviewed by legal: _____

Ref: IFB 2019-17 Wastewater Treatment Chemicals

4

In consideration of the foregoing, please indicate your approval of this recommendation by your signature below.

[ ] CONCURRED [ ] UNCONCURRED

VINCENT ED. GUERRERO, SMA

[ ] APPROVED [ ] DISAPPROVED

7.9.19

MIGUEL C. BORDALLO, P.E. GENERAL MANAGER

Ref: IFB 2019-17 Wastewater Treatment Chemicals

5

EXHIBIT B

GWA IFB 2019-17

BID FORM FOR CHEMICALS FOR GWA'S NDWWTP AND HWWTP (TO BE PLACED IN A SEALED ENVELOPE AND DELIVERED WITH TECHNICAL PROPOSAL)

1. Inorganic Coagulant,

Product ACH Powder (ACHIEVE D1012) **Price per pound delivered CIF** $ 1.09 per pound

Manufacturer: GULBRANDSEN Technologies (India) Pvt. Inc.

Product Label Name: ACHIEVE D1012 ACH POWDER

Place of Origin: Gujarat, India

Time of first Delivery: 60 days (days)
After Receipt of Purchase Order

Reorder lead time: 30 days (days)
Upon Receipt of Purchase Order

Estimated Annual Consumption:
803,528 lbs x $ 1.09 =
$ 875,845.52

2. Coagulant Aid (e. g. anionic polymer) **Price per pound delivered CIF** $ 2.26 per pound

Manufacturer: NALCO An Ecolab Company

Product Label Name: NALCLEAR 7767 Anionic Flocculant

Place of Origin: Naperville, Illinois! U.S.A>

Time of first Delivery: 45 days (days)
After Receipt of Purchase Order

Reorder lead time: 30 days (days)
Upon Receipt of Purchase Order

Estmated Annual Consumption:
111,763 lbs x $ 2.26 =
$ 252,584.38

3. Cationic Polymer **Price per pound delivered CIF** $ 3.10 per pound

Manufacturer: NALCO An Ecolab Company

Product Label Name: OPTIMER 7194 Cationic Flocculant

Place of Origin: Naperville, Illinois U.S.A.

Time of first Delivery: 45 days (days)
After Receipt of Purchase Order

Reorder lead time: 30 days (days)
Upon Receipt of Purchase Order

Estimated Annual Consumption:
138,061 lbs x $ 3.10 =
$ 427,989.10

15

Jerry A. Flores 06/10/19
Jerry A. Flores Date
Chief Financial Officer
Total Chemical Resources, Inc.

EXHIBIT C

assay.

6. Products must be compatible with GWA's installed chemical handling equipment.

7. Award may be made on a line by line basis. Each item in this bid will be evaluated individually and may be awarded accordingly.

8. Bidder shall provide documentation verifying compliance with the above specifications for each chemical.

9. Purchase Orders under this Procurement will not be issued for delivery of chemical prior to January 1, 2020.

BID FORM FOR CHEMICALS FOR GWA'S NDWWTP, HWWTP & ASRWWTP
(TO BE PLACED IN A SEALED ENVELOPE AND
DELIVERED WITH TECHNICAL PROPOSAL)

1. **Inorganic Coagulant,**

Product Aluminum Chlorohydrate **Price per pound delivered CIF** $1.17 per lb.

Manufacturer: Summit Research Labs

Product Label Name: Sumalchlor 200

Place of Origin: USA

Time of first Delivery: As per GWA requirements (days)
After Receipt of Purchase Order

Reorder lead time: As per GWA requirements (days)
Upon Receipt of Purchase Order

2. **Coagulant Aid** (e. g. anionic polymer) **Price per pound delivered CIF** $1.16 per lb.

Manufacturer: Veolia Water Solutions & Technologies

Product Label Name: Hydrex 6104 Anionic Emulsion Polymer

Place of Origin: Korea

Time of first Delivery: As per GWA requirements (days)
After Receipt of Purchase Order

Reorder lead time: As per GWA requirements (days)
Upon Receipt of Purchase Order

3. Cationic Polymer **Price per pound delivered CIF** $1.63 per lb.

Manufacturer: Veolia Water Solutions & Technologies

Product Label Name: Hydrex 6402 Cationic Emulsion Polymer

Place of Origin: Korea

Time of first Delivery: As per GWA requirements (days)
After Receipt of Purchase Order

Reorder lead time: As per GWA requirements (days)
Upon Receipt of Purchase Order

II. GENERAL SPECIFICATIONS:

This is an "Indefinite Quantity Bid" created pursuant to the Guam Procurement Regulations. **The quantities computed in the bid are estimated requirements only and not guaranteed minimums. The amounts computed in this bid are GWA's best estimate of its annual needs and such estimates do not relate to chemicals not yet tested or used by GWA.** Quantities may increase or decrease thru the duration of the contract because of variable flow rates through the NDWWTP, HWWTP & ASRWWTP and continued purchase is subject to the availability of funds. No commitment is made to vendors in terms of purchasing quantity.

A. AUTHORITY.

This Invitation for Bids is issued subject to all of the provisions of the Guam Procurement Act and the Guam Procurement Regulations. The bid requires all parties involved in the preparation, negotiation, performance, or administration of contracts to act in good faith. Failure on the part of any bidder to act in good faith shall serve as a basis for voiding a bid or shall constitute a material breach of any contract entered into between GWA and any bidder which shall allow GWA to immediately terminate the contract.

B. EXPLANATION TO BIDDERS.

Except as otherwise provided herein, no oral explanation in regard to the meaning of any provision of this Bid will be made and no oral instructions will be given before the award of

EXHIBIT D

GUAM WATERWORKS AUTHORITY
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao GU, 96913

NOTICE OF CONDITIONAL AWARD

Date: JUL 12 2019

Total Chemical Resources
P.O. Box 20730
GMF, Barrigada, Guam 96921-0730
Phone- #671-646.4742
Fax- #671-649.0447

Re: Invitation for Bid Number: GWA IFB-2019-17
For: Wastewater Treatment Chemicals

Hafa Adai Mr. Glenn Canovas,

The Guam Waterworks Authority ("GWA") has considered the bid submitted by Total Chemical Resources, for the above described reference in response to its Advertisement for Bids dated April 17, 2019 you are hereby notified of your bid offer on Item Number 1 been accepted by GWA. Please be advised that you must now deliver all other documents required by the bid, including, but not limited to:

- Proof of Insurance: (if applicable/required part of the bid requirements.)
- Performance and Payment Bond: (if applicable/required part of the bid requirements.)

(Which must remain in full force and effect until all performance has ended, which includes all warranty periods).

You are also advised that any obligation incurred by your firm prior to execution of the contract is entirely at your own risk and GWA shall have no obligation to reimburse costs incurred prior to execution of the contract.

Please note this Notice of Award is conditional on obtaining the approval of the Guam Consolidated Commission on Utilities for any award over $750,000 and the approval of the Guam Public Utilities Commission where the total value over the life of the contract could exceed $1M. Also, award is conditional upon providing any documents such as proof of licensure, proof of insurance or other documents required to be submitted to GWA under the Bid or Guam law.

/

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You are required to return an acknowledged copy of this Conditional Notice of Award to GWA Procurement Office.

Sincerely,

Miguel C. Bordallo. P.E.
General Manager

ACCEPTANCE OF CONDITIONAL NOTICE OF AWARD

Receipt of the above Notice of Conditional Award for GWA IFB No. GWA 2019-17 is hereby acknowledged

By: _____ Title: SALES MANAGER
Signature (Please Print)

Dated this 15TH day of July, 2019.

******** END OF CONDITIONAL NOTICE OF AWARD *******

GUAM WATERWORKS AUTHORITY
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao GU 96913
"Better Water, Better Lives."
Gloria B. Nelson Public Services Building
688 Route 15, Mangilao, Guam 96913

BID STATUS

Date: JUL 12 2019

Total Chemical Resources
P.O. Box 20730
GMF, Barrigada, Guam 96921-0730
Tel: 671-646-4742
Fax: 671-649-0447

Bid Invitation No. **GWA IFB 2019-17**

Description: Wastewater Treatment Chemicals

The following is the result of the above-mentioned bid. Refer to the items checked below.

[ ] **Cancelled (in its entirety), or partially cancelled due to:**

- [ ] Insufficient funds
- [ ] Change of specifications
- [ ] Insufficient number of bidders

[ ] **Not Awarded base on the following:**

- [ ] Late submission of bid
- [ ] No bid security or insufficient bid security amount submitted as required by Section 11 of the General Terms and Conditions
- [ ] Not meeting the delivery requirement as stated in the IFB
- [ ] Non-conformance with the specifications
- [ ] Inability to provide future maintenance and services to the equipment
- [ ] High price

[X] **Bid is recommended for award to:**

JMI Edison: for Line Items 2.0, 3.0

Remarks:
Thank you for your participation.

E. GLENN CANOVAS

RECEIVED
7-15-19

Miguel C. Bordallo, PE
General Manager

EXHIBIT E

GUAM WATERWORKS AUTHORITY
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao GU, 96913

NOTICE OF CONDITIONAL AWARD

Date: JUL 12 2019

JMI Edison
125 North Marine Drive
P.O. Box 6577
Tamuning, Guam 96931
Phone- #671-646.6400
Fax- #671-649.4835

Re: Invitation for Bid Number: GWA IFB-2019-17
For: Wastewater Treatment Chemicals

Hafa Adai Mr. Romeo Oriondo,

The Guam Waterworks Authority ("GWA") has considered the bid submitted by JMI Edison, for the above described reference in response to its Advertisement for Bids dated April 17, 2019 you are hereby notified of your bid offer on Item Number (s) 2 and 3 been accepted by GWA. Please be advised that you must now deliver all other documents required by the bid, including, but not limited to:

- Proof of Insurance: (if applicable/required part of the bid requirements.)
- Performance and Payment Bond: (if applicable/required part of the bid requirements.)

(Which must remain in full force and effect until all performance has ended, which includes all warranty periods).

You are also advised that any obligation incurred by your firm prior to execution of the contract is entirely at your own risk and GWA shall have no obligation to reimburse costs incurred prior to execution of the contract.

Please note this Notice of Award is conditional on obtaining the approval of the Guam Consolidated Commission on Utilities for any award over $750,000 and the approval of the Guam Public Utilities Commission where the total value over the life of the contract could exceed $1M. Also, award is conditional upon providing any documents such as proof of licensure, proof of insurance or other documents required to be submitted to GWA under the Bid or Guam law.

/

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You are required to return an acknowledged copy of this Conditional Notice of Award to GWA Procurement Office.

Sincerely,

Miguel C. Bordallo. P.E.
General Manager

ACCEPTANCE OF CONDITIONAL NOTICE OF AWARD

Receipt of the above Notice of Conditional Award for GWA IFB No. GWA 2019-17 is hereby acknowledged

By: _____ Title: Operations Mgr.
Signature (Please Print)

Dated this 12 day of July, 2019.

* * * * * * * * END OF CONDITIONAL NOTICE OF AWARD * * * * * * *

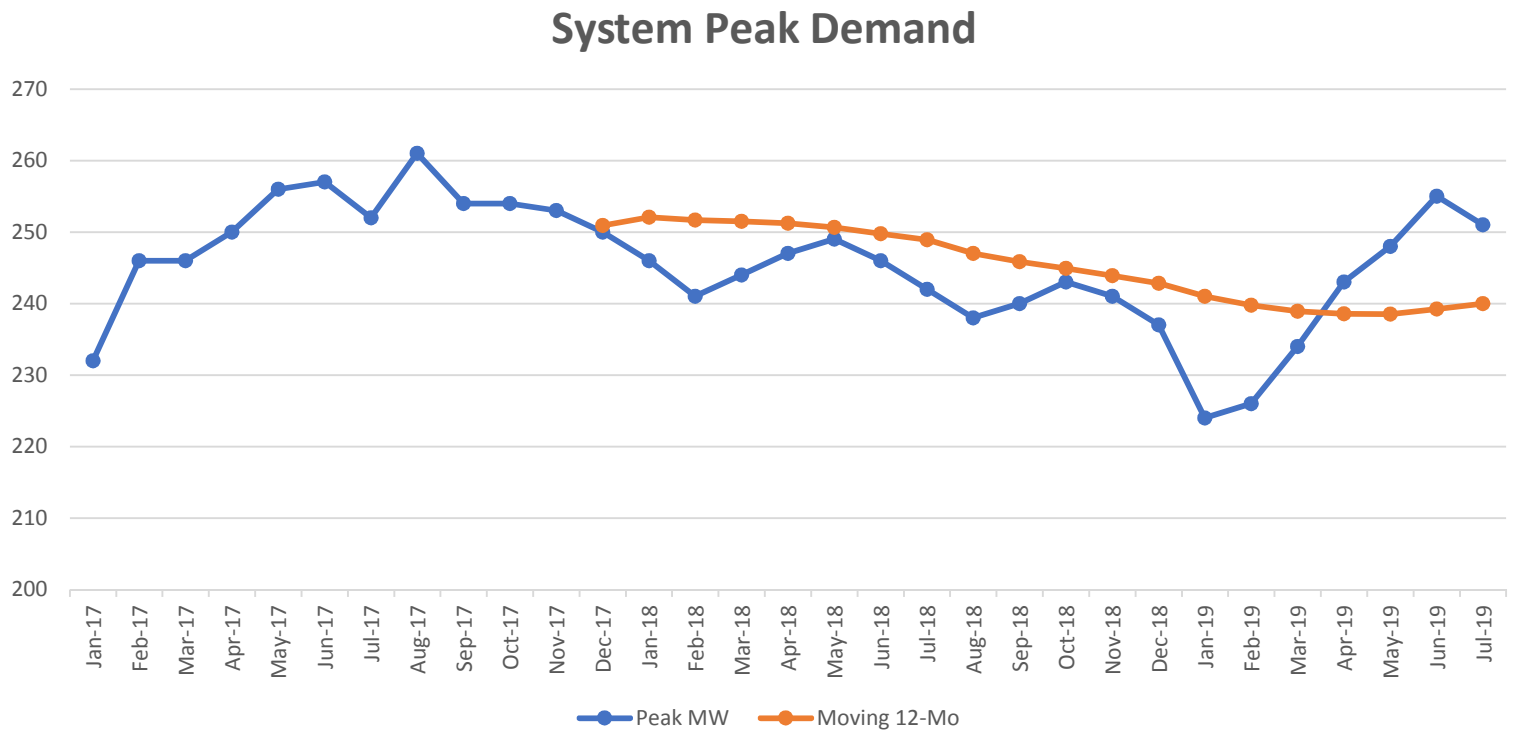
GENERAL MANAGER'S REPORT

JULY 2019

1. **Generation System:** The following summarizes the generation forecast for August 2019:

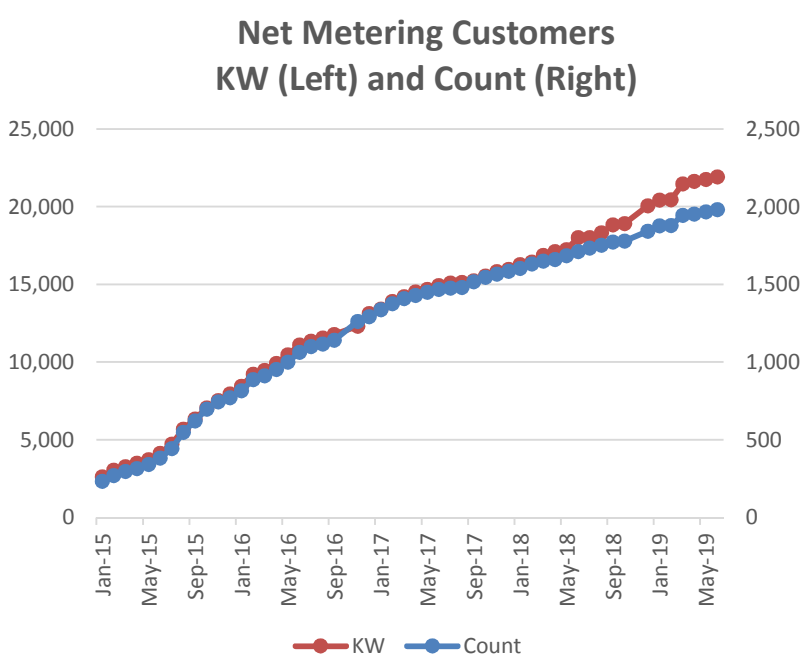
   Projected Available Capacity: 380 MW
   Projected Demand: 255 MW
   Anticipated Reserve Margin: 125 MW

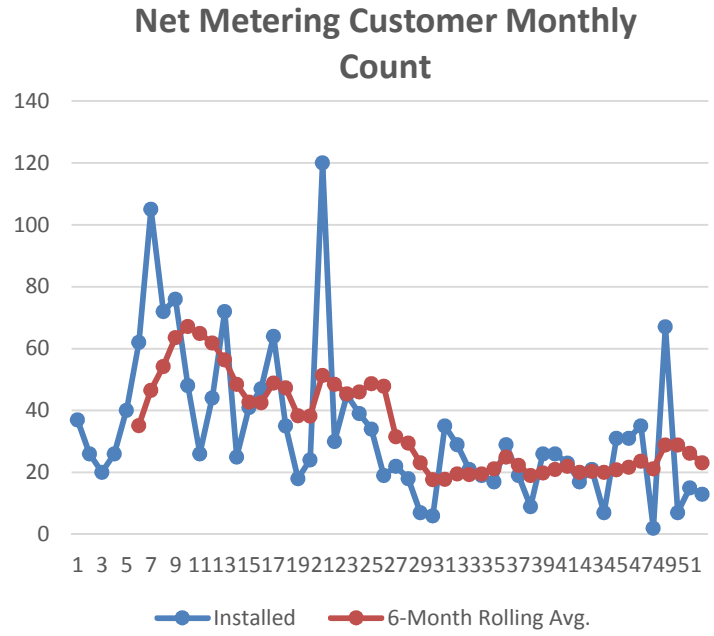
   - The peak demand in 2019 continues to be higher than in 2018. The Peak for July (ending 7/10/19) was 251 MW compared to the peak demand of 242 MW in July 2018.



2. Net Metering (NEM) Credit Adjustment:

The PUC ordered at its May 30th meeting to not make any change to the current program. It also ordered for GPA and PUC to agree on an independent consultant to determine the cost and benefits of NEM including the benefits distributed generation may have in the distribution system. The PUC will entertain the report when completed and will address the matter further at that time or once the total NEM KW capacity reaches about 26MW. The following graphs show Net Metering ending June 2019:





3. **Demand Side Management (DSM):**
   Program directly reduces energy cost to customer at a one-time fixed rebate. GPA currently funded $3.9M from base rate. The program is growing exponentially but GPA base rate will not be able to fund the growth.

DSM PROGRAM SUMMARY

Description	FY16	FY17	FY18	FY19 thru 6/30/19*	Total to Date
Regular/OT Pay	$11,348.80	$22,256.00	$26,121.83	$34,093.68	$93,820.31
Other Contractual	$28,278.50	$85,550.05	$116,977.50	$3,025.00	$233,831.05
Ads & Radio Announcements	-	-	-	$7,500.00	$7,500.00
Paid Rebates-Split AC	$154,700.00	$557,275.00	$1,349,825.00	$704,550.00	$2,766,350.00
Paid Rebates- Central AC	$3,400.00	$8,200.00	$4,400.00	$4,200.00	$20,200.00
Paid Rebates- Washer/Dryer	$2,800.00	$7,425.00	$57,200.00	$69,000.00	$136,425.00
Total Expenses	**$200,527.30**	**$680,706.05**	**$1,554,524.33**	**$822,368.68**	**$3,258,126.36**

4. LED Streetlights:

The progress report for the installation of 3,750 LED (white color) streetlights replacing the vintage High Pressure Sodium (yellowish color) lights is shown below.

The 250W lights are installed on Marine Corps Dr; the 150W lights are installed along village streets beginning in the south. We are in the process of ordering another 7,000 LED lights for delivery in FY 2020 to change out the balance of the HPS lighting.

This program once completed could allow DPW to request for an additional 3,000 lights into the system at today's cost. I am scheduling a meeting with DPW and the Mayor's Council Director to discuss the program.

LED Streetlight Replacement Project

FY 2019	Goal	Actual	Inarajan/ Malojloj	Yona	Umatac	Merizo	Talofofo	Santa Rita	Agat	Marine Corps Dr. 250 Equiv.
June 7-8	220	228	26	5	34	16	47	60	40	0
June 14-15	220	253	46	6	21	14	52	59	55	0
June 21-22	220	273	50	30	0	0	50	62	65	16
June 28-29	220	256	50	33	0	0	49	56	50	18
July 5-6	220	269	50	25	0	0	52	60	82	0
TOTALS	3,750	1,279	222	99	55	30	250	297	292	34
	Goal	Actual	Inarajan/ Malojloj	Yona	Umatac	Merizo	Talofofo	Santa Rita	Agat	Marine Corps Dr. 250 Equiv.

5. New 180 MW Power Plant:
   - Three bidders submitted price proposal on June 3, 2019 The lowest bidder has been determined to be KEPCO
   - An Intent to Award Notice was issued on June 10, subject to the successful completion of an Energy Conversion Agreement (ECA) between the parties, CCU and PUC approval
   - A protest was filed with GPA by the 2nd lowest bidder Hanwha. GPA determined the protest was without merit and denied the protest. Hanwha could file an appeal to the OPA within a 14 day period.
   - GPA and KEPCO have met to work on the ECA.
   - GPA's rate consultant has been working on completing the rate study for the project as required by the PUC
   - Currently the target date to bring the issue before the CCU for their deliberation is August

6. Liberation Day Festivities:

   GPWA is entering a float for the parade. Additionally, GPWA will have a food tent set up similarly to past years. The tent is located directly in front of Moylan by the Boat Shop. Please join us to celebrate our 75th Liberation Day with the island.

7. **NAVFAC Briefing:**

Executive Management conducted a briefing on Monday, July 15th for our largest customer, DOD, more specifically the commanding Officer of NAVFAC Guam, Capt. Turner. The meeting was positive and is part of our effort to keep DOD informed of GPA issues and progress.

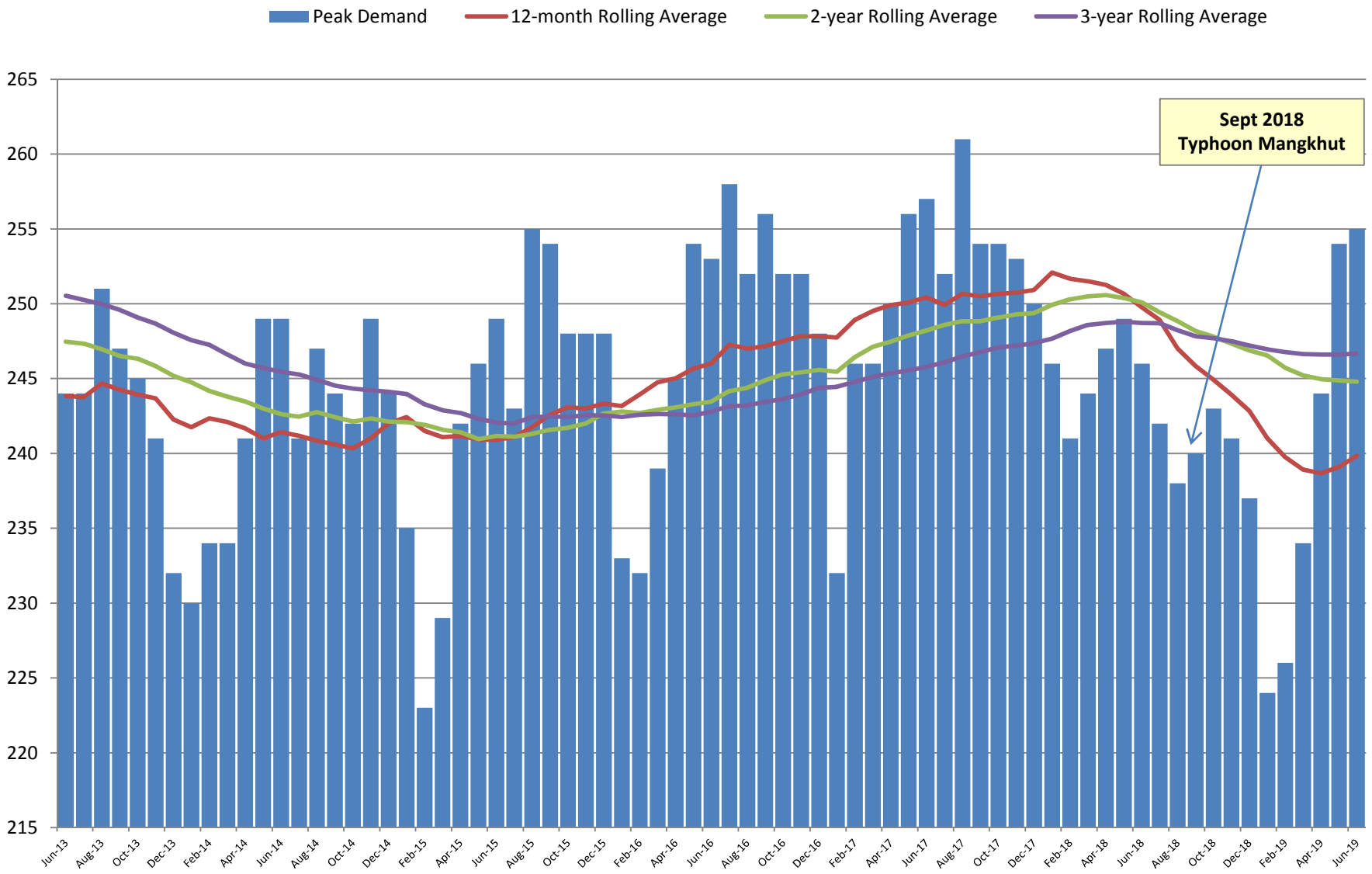
8. **American Public Power Association:**

The National Conference was held in Austin, Texas in June 2019. The Association consist of about 2,000 municipal utilities from among the nation. GPA ranks in the top 100 of the members in terms of revenue, sales and number of customers. APPA membership helps keep GPA abreast with issues and developments of utilities including providing member utilities with training and networking opportunities for all facets of municipal utility operations. Highlights from this year's conference includes:

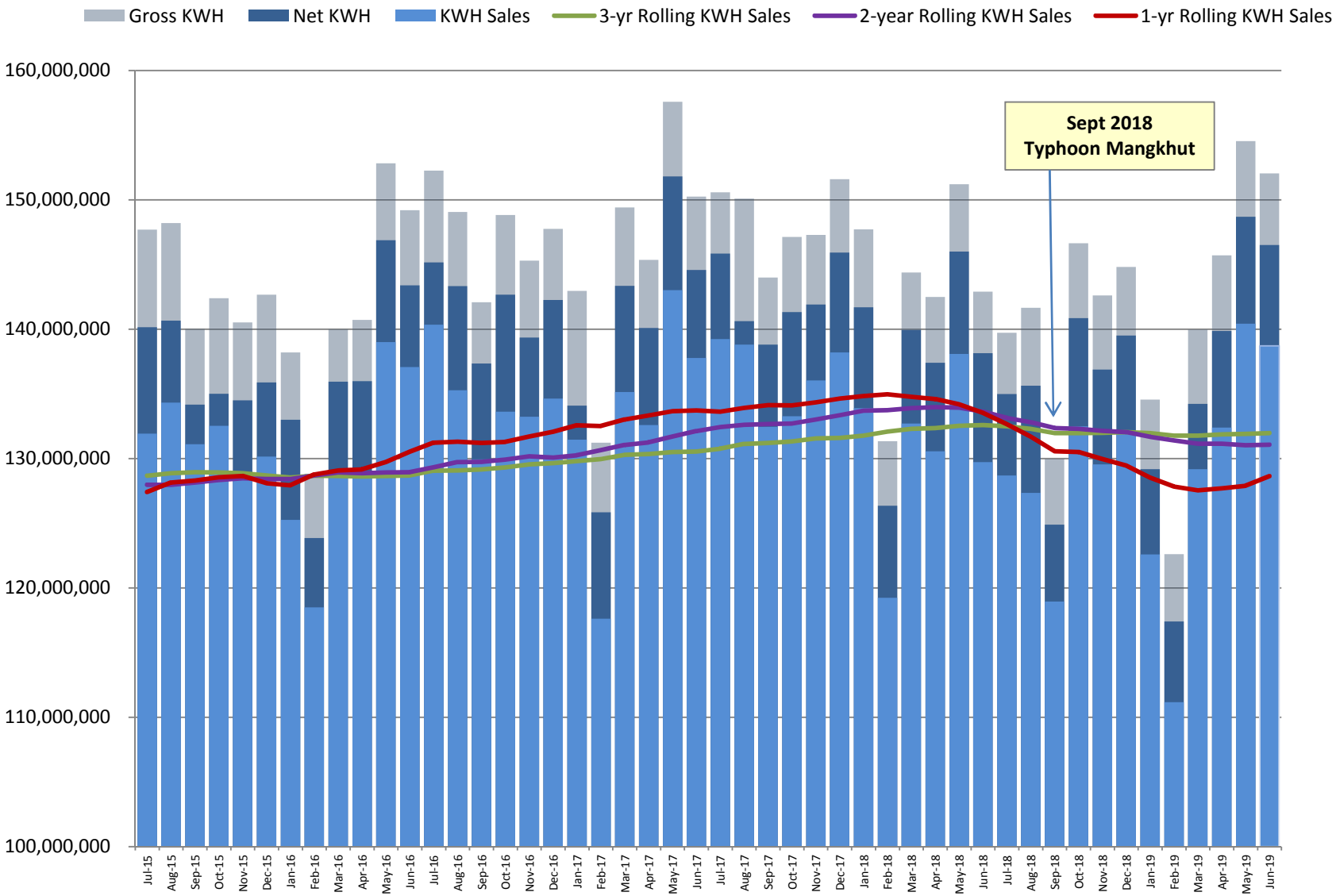
- My re-election for another 3-year term on the Board of Directors. I represent Region X which consist of member utilities of Puerto Rico, American Samoa, Virgin Islands, CNMI and Guam.
- Presented on the topic "Resiliency of Guam's Infrastructure" and the Mutual Aid to CNMI for recovery efforts from Typhoon Yutu.

8. **Updated Metrics:** The following are updates on key metrics

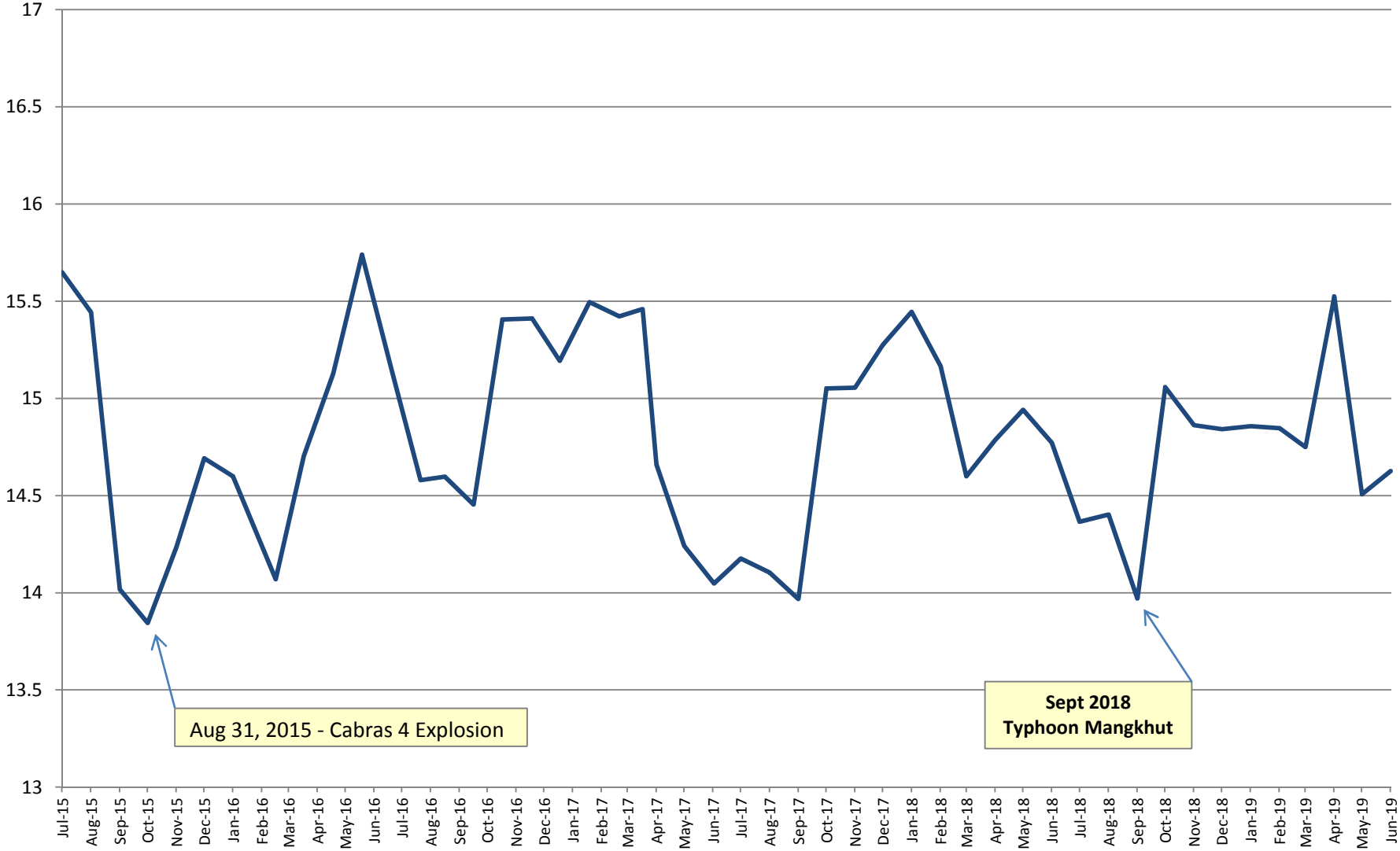
Historical Monthly Peak Demand
June 2013 - June 2019



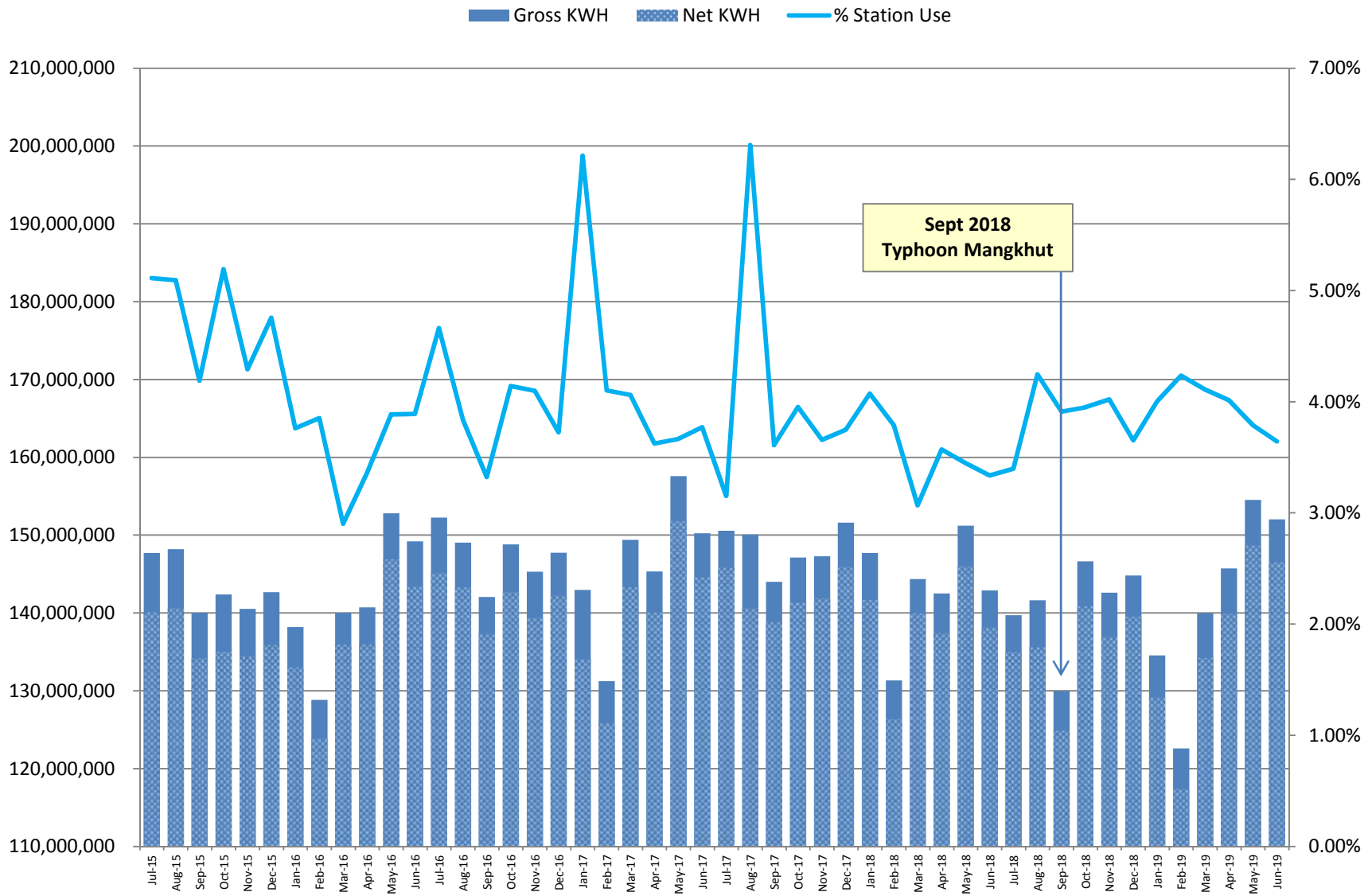
Historical KWH Sales
July 2015 - June 2019



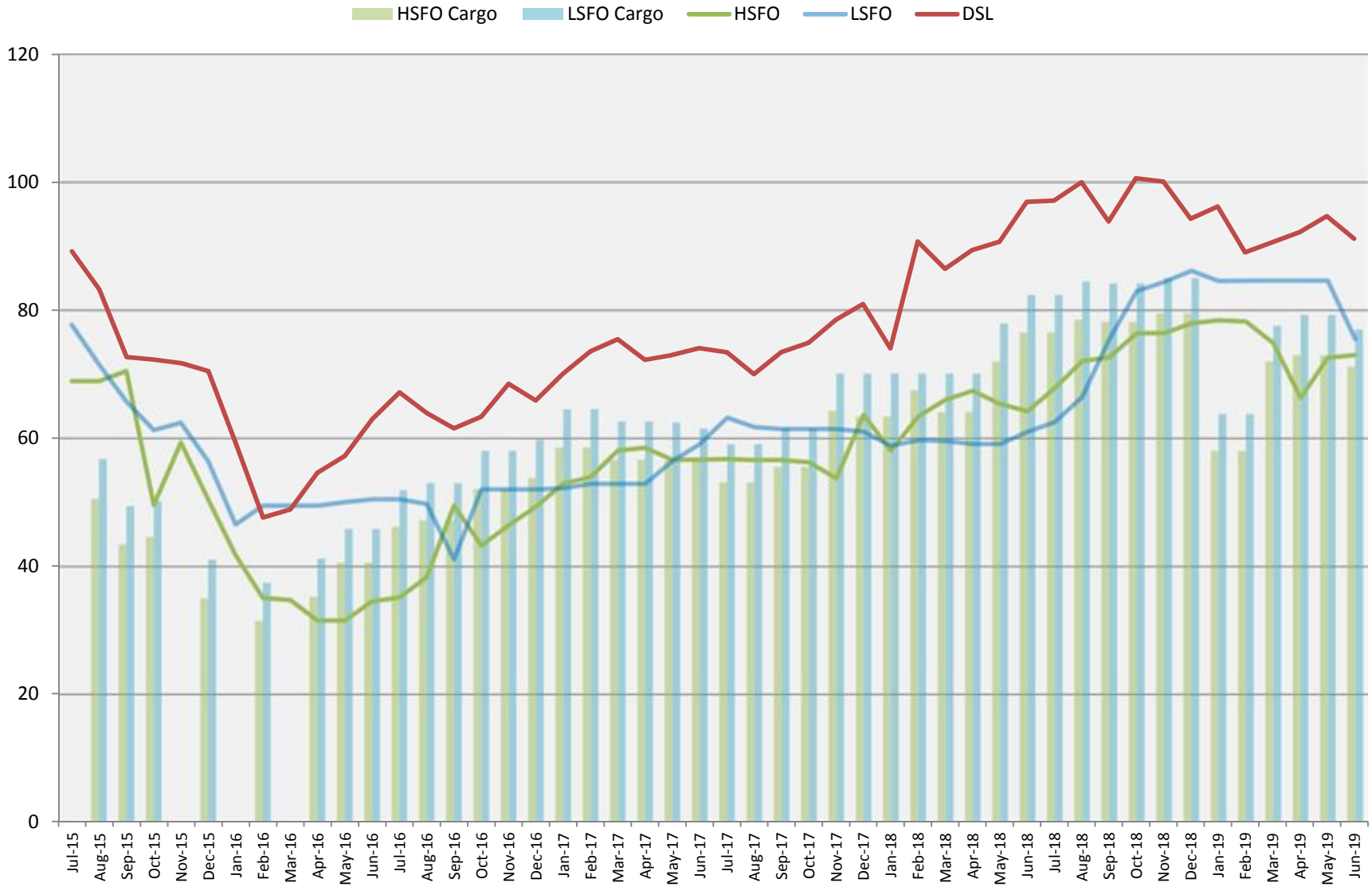
SYSTEM GROSS HEAT RATE
(KWH/Gal)
July 2015 - June 2019



Gross and Net Generation (KWH)
July 2015 - June 2019



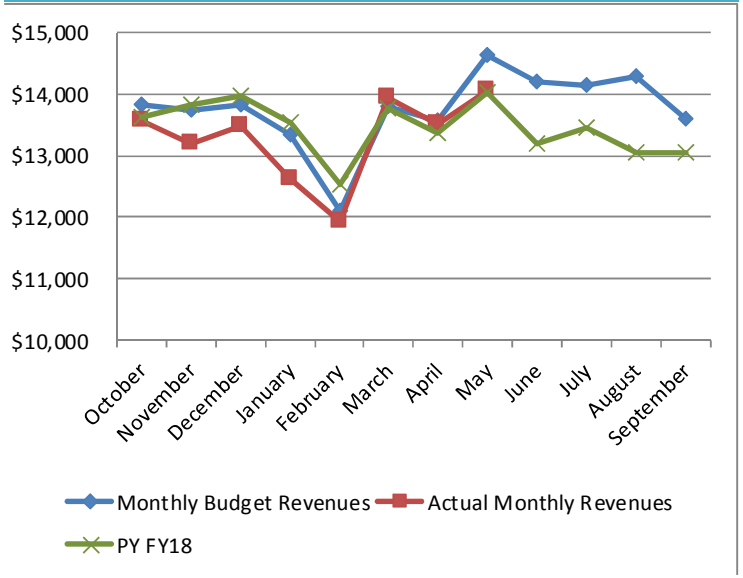
Fuel Cargo and Fuel Consumption Costs ($/bbl)
July 2015 - June 2019



CFO
FINANCIAL HIGHLIGHTS
MAY 2019

May 2019 Monthly Financial Highlights

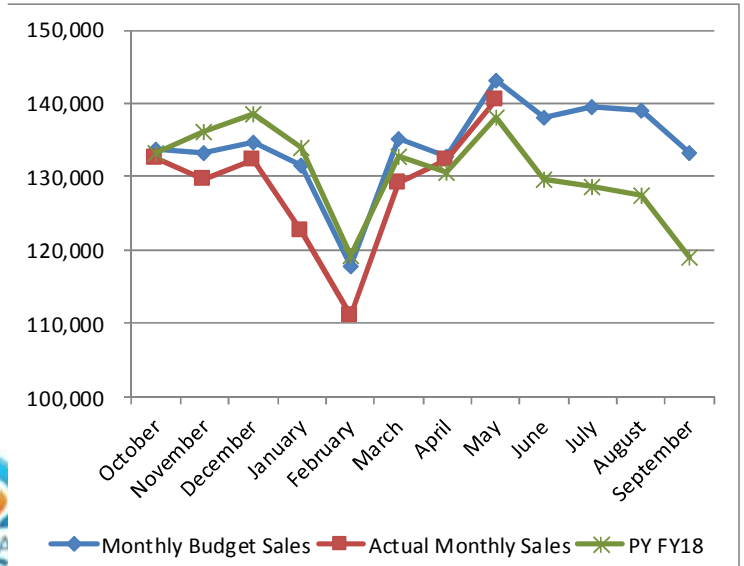
Base Rate Revenue $000



Through May 31, 2019

$000	Monthly Budget Revenues	Actual Monthly Revenues	Variance		PY FY18	CY vs PY Variance	
October	$ 13,811	$ 13,564	$ (246)	↓	$ 13,625	$ (61)	↓
November	13,723	13,203	$ (519)	↓	13,827	$ (624)	↓
December	13,833	13,467	$ (365)	↓	13,968	$ (501)	↓
January	13,321	12,616	$ (705)	↓	13,534	$ (918)	↓
February	12,114	11,915	$ (199)	↓	12,522	$ (607)	↓
March	13,790	13,926	$ 135	↑	13,776	$ 150	↑
April	13,562	13,520	$ (42)	↓	13,351	$ 169	↑
May	14,630	14,057	$ (573)	↓	14,011	$ 46	↑
June	14,196				13,201		
July	14,152				13,446		
August	14,280				13,041		
September	13,590				13,041		
Total	**$ 165,002**	**$ 106,269**	**$ (2,515)**		**$ 161,343**	**$ (2,346)**	

MWh Sales

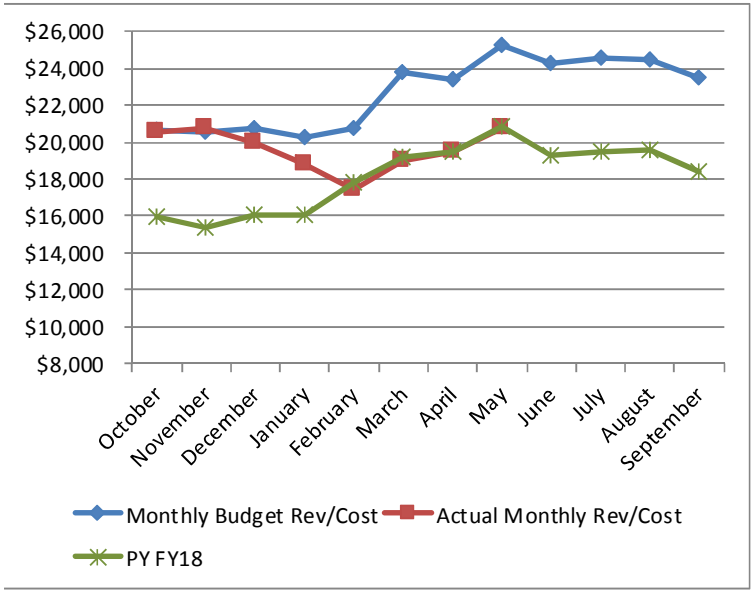


Through May 31, 2019

gwh	Monthly Budget Sales	Actual Monthly Sales	Variance		PY FY18	CY vs PY Variance	
October	133,797	132,489	(1,308)	↓	133,262	(773)	↓
November	133,346	129,537	(3,809)	↓	136,044	(6,506)	↓
December	134,715	132,190	(2,525)	↓	138,587	(6,397)	↓
January	131,547	122,590	(8,958)	↓	133,882	(11,292)	↓
February	117,775	111,159	(6,616)	↓	119,241	(8,082)	↓
March	135,196	129,170	(6,026)	↓	132,693	(3,523)	↓
April	132,763	132,396	(367)	↓	130,565	1,830	↑
May	143,236	140,412	(2,824)	↓	138,085	2,327	↑
June	138,016				129,728		
July	139,434				128,681		
August	139,030				127,348		
September	133,149				118,935		
Total	**1,612,003**	**1,029,942**	**(32,432)**		**1,567,052**	**(32,418)**	

May 2019 Monthly Financial Highlights (Continued)

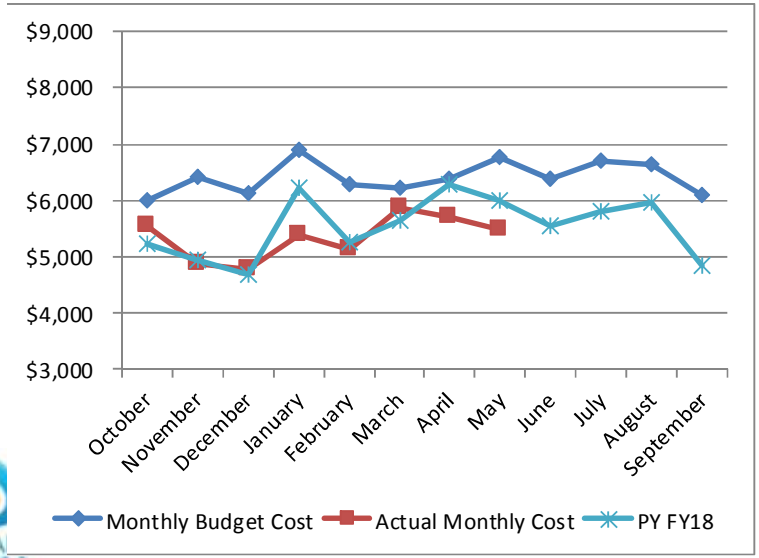
Fuel Revenue/ Cost $000



Through May 31, 2019

$000	Monthly Budget Rev/Cost	Actual Monthly Rev/Cost	Variance		PY FY18	CY vs PY Variance	
October	$ 20,637	$ 20,550	$ (87)	↓	$ 15,936	$ 4,615	↑
November	20,568	20,711	$ 143	↑	15,400	$ 5,310	↑
December	20,779	19,969	$ (810)	↓	16,007	$ 3,961	↑
January	20,290	18,822	$ (1,468)	↓	16,036	$ 2,785	↑
February	20,718	17,368	$ (3,350)	↓	17,763	$ (395)	↓
March	23,783	19,017	$ (4,765)	↓	19,180	$ (163)	↓
April	23,354	19,442	(3,912)	↓	19,441	2	↑
May	25,197	20,711	(4,486)	↓	20,854	(143)	↓
June	24,279				19,252		
July	24,528				19,457		
August	24,457				19,608		
September	23,422				18,390		
Total	**$ 272,011**	**$ 156,589**	**$(18,736)**		**$ 217,324**	**$ 15,972**	

O&M Cost $000



Through May 31, 2019

$000	Monthly Budget Cost	Actual Monthly Cost	Variance		PY FY18	CY vs PY Variance	
October	$ 5,986	5,551	435	↑	5,239	(312)	↓
November	6,419	4,875	1,544	↑	4,941	66	↑
December	6,119	4,762	1,358	↑	4,694	(68)	↓
January	6,882	5,399	1,483	↑	6,204	805	↑
February	6,291	5,114	1,177	↑	5,252	138	↑
March	6,231	5,869	362	↑	5,638	(231)	↓
April	6,374	5,704	670	↑	6,269	565	↑
May	6,753	5,485	1,268	↑	6,005	520	↓
June	6,373				5,558		
July	6,710				5,797		
August	6,648				5,961		
September	6,079				4,836		
Total	**$ 76,866**	**$ 42,759**	**$ 8,297**		**$ 66,394**	**$ 1,483**	

May 2019 Monthly Financial Highlights

Through May 31, 2019

	2Q2018	3Q2018	4Q2018	1Q2019	2Q2019	3Q2019
Residential	44,065	44,074	43,887	43,920	44,144	44,640
Commercial	5,262	5,278	5,261	5,273	5,291	5,317
Government	1,086	1,092	1,077	1,090	1,074	1,073
Streetlights	1,005	1,091	1,152	1,151	1,152	1,138
Navy	1	1	1	1	1	1
	51,419	51,536	51,378	51,435	51,662	52,169

Debt service coverage (DSC) calculation-indenture	2013	2014	2015	2016	2017	2018	YTD May 2019
Senior lien coverage	3.36	3.16	3.62	3.28	2.65	2.53	1.98
Aggregate debt service coverage	1.88	1.98	2.62	3.28	2.65	2.53	1.98
Debt service coverage (DSC) calculation-IPP as O&M							
Senior lien coverage	2.16	2.55	2.56	2.45	1.79	1.65	1.58
Aggregate debt service coverage	1.21	1.41	1.85	2.45	1.79	1.65	1.58

GUAM POWER AUTHORITY
ATURIDAT ILEKTRESEDAT GUAHAN
P O BOX 2977, AGANA, GUAM 96932-2977
Telephone: (671) 648-3066 Fax: (671) 648-3168

GUAM POWER AUTHORITY
FINANCIAL STATEMENT OVERVIEW
May 2019

Attached are the financial statements and supporting schedules for the month and fiscal year ended May 31, 2019.

Summary
The increase in net assets for the month ended was $2.4 million as compared to the anticipated net increase of $1.2 million projected at the beginning of the year. The total kWh sales for the month were 1.97% less than projected and non-fuel revenues were $0.6 million less than the estimated amount. O & M expenses for the month were $5.4 million which was $1.4 million less than our projections for the month. Other expenses for the month such as interest expense, IPP costs, (net of interest income and other income) totaled to $3.2 million, which was $0.4 less than the projected amounts. There were no other significant departures from the budget during the period.

Analysis

Description	Previous Month	Current Month	Target
Quick Ratio	2.55	2.42	2
Days in Receivables	40	41	52
Days in Payables	28	29	30
LEAC (Over)/Under Recovery Balance -YTD	$11,753,573	$12,975,911	$12,817,628
T&D Losses	5.45%	5.44%	<7.00%
Debt Service Coverage	1.52	1.58	1.75
Long-term equity ratio	-0.013%	-0.009%	30 – 40%
Days in Cash	201	200	60

The Quick Ratio has been a challenge for GPA historically. However, the influx of cash from insurance proceeds continued to improve this ratio. GPA has current obligations of approximately $75 million and approximately $180 million in cash and current receivables. The LEAC under recovery for the month is $1.2 million. Debt Service Coverage ratio is calculated using the methodology in use before the Fiscal Year 2002 change in accounting practice.

Financial Statements
May 2019

Significant Assumptions

The significant assumptions in the financial statements are as follows:

- Accrual cutoff procedures were performed at month end
- An inventory valuation is performed at year-end only
- Accounts Receivable includes accruals based on prior months' usage.

Prepared by:	Reviewed by:	Approved by:
Lenora M. Sanz Controller	John J.E. Kim Chief Financial Officer	John M. Benavente, P.E. General Manager

GUAM POWER AUTHORITY
(A COMPONENT UNIT OF THE GOVERNMENT OF GUAM)
Statements of Net Position
May 31, 2019 and September 30, 2018

	Unaudited May 2019	Audited September 2018	Change from Sept 30 2018
ASSETS AND DEFERRED OUTFLOWS OF RESOURCES			
Current assets:			
Cash and cash equivalents:			
Held by trustee for restricted purposes:			
Interest and principal funds	$ 17,815,378	$ 17,997,927	$ (182,549)
Bond indenture funds	31,090,684	49,970,719	(18,880,035)
Held by Guam Power Authority:			
Bond indenture funds	136,298,589	142,583,470	(6,284,881)
Self insurance fund-restricted	19,275,733	19,258,353	17,380
Energy sense fund	309,339	1,085,472	(776,133)
Total cash and cash equivalents	204,789,723	230,895,941	(26,106,218)
Accounts receivable, net	43,079,584	37,851,906	5,227,678
Total current receivables	43,079,584	37,851,906	5,227,678
Materials and supplies inventory	13,043,669	12,812,072	231,597
Fuel inventory	60,578,979	67,993,103	(7,414,124)
Prepaid expenses	4,893,166	979,828	3,913,338
Total current assets	326,385,121	350,532,850	(24,147,729)
Utility plant, at cost:			
Electric plant in service	1,070,324,885	1,063,192,955	7,131,930
Construction work in progress	40,020,073	28,021,290	11,998,783
Total	1,110,344,958	1,091,214,245	19,130,713
Less: Accumulated depreciation	(620,960,307)	(597,426,905)	(23,533,402)
Total utility plant	489,384,651	493,787,340	(4,402,689)
Other non-current assets:			
Investment - bond reserve funds held by trustee	48,455,424	48,600,660	(145,236)
Unamortized debt issuance costs	2,315,256	2,503,448	(188,192)
Total other non-current assets	50,770,680	51,104,108	(333,428)
Total assets	866,540,452	895,424,298	(28,883,846)
Deferred outflow of resources:			
Deferred fuel revenue	12,975,911	8,370,542	4,605,369
Unamortized loss on debt refunding	25,519,948	27,093,636	(1,573,688)
Pension	8,932,987	8,932,987	0
Other post employment benefits	13,798,017	13,798,017	0
Unamortized forward delivery contract costs	371,758	477,998	(106,240)
Total deferred outflows of resources	61,598,621	58,673,180	2,925,441
	$ 928,139,073	$ 954,097,478	$ (25,958,405)

GUAM POWER AUTHORITY
(A COMPONENT UNIT OF THE GOVERNMENT OF GUAM)
Statement of Net Position, Continued
May 31, 2019 and September 30, 2018

	Unaudited May 2019	Audited September 2018	Change from Sept 30 2018
LIABILITIES, DEFERRED INFLOWS OF RESOURCES AND NET POSITION			
Current liabilities:			
Current maturities of long-term debt	$ 16,130,000	$ 1,630,000	$ 14,500,000
Current obligations under capital leases	3,304,531	13,613,066	(10,308,535)
Accounts payable			
Operations	34,806,180	47,761,928	(12,955,748)
Others	1,338,518	662,541	675,977
Accrued payroll and employees' benefits	1,392,201	1,949,080	(556,879)
Current portion of employees' annual leave	2,357,104	2,101,168	255,936
Interest payable	5,321,910	14,745,285	(9,423,375)
Customer deposits	9,909,806	9,387,519	522,287
Total current liabilities	74,560,250	91,850,587	(17,290,337)
Regulatory liabilities:			
Provision for self insurance	19,345,291	19,345,291	0
Total regulatory liabilities	19,345,291	19,345,291	0
Long term debt, net of current maturities	586,180,138	604,881,434	(18,701,296)
Obligations under capital leases, net of current portion	10,180,094	10,808,951	(628,857)
Net Pension liability	74,115,014	76,554,735	(2,439,721)
Other post employment benefits liability	145,955,861	145,955,861	0
DCRS sick leave liability	1,331,151	1,331,151	0
Employees' annual leave net of current portion	1,204,085	1,204,085	0
Customer advances for construction	385,483	385,293	190
Total liabilities	913,257,367	952,317,388	(39,060,021)
Deferred inflows of resources:			
Unearned forward delivery contract revenue	1,362,708	1,752,053	(389,345)
Pension	3,532,642	3,532,642	0
Other post employment benefits	14,804,043	14,804,043	0
Total deferred inflows of resources	19,699,393	20,088,738	(389,345)
Commitments and contigencies			
Net Position:			
Net investment in capital assets	(47,249,486)	(38,960,024)	(8,289,462)
Restricted	25,431,569	47,856,103	(22,424,534)
Unrestricted	17,000,229	(27,204,727)	44,204,957
Total net position	(4,817,688)	(18,308,648)	13,490,962
	$ 928,139,073	$ 954,097,478	$ (25,958,405)

GUAM POWER AUTHORITY
(A COMPONENT UNIT OF THE GOVERNMENT OF GUAM
Statement of Revenues, Expenses and Changes in Net Assets

	May 31			Eight Months Ended May 31		
	Unaudited 2019	Audited 2018	% of change Inc (dec)	Unaudited 2019	Audited 2018	% of change Inc (dec)
Revenues						
Sales of electricity	$ 34,767,531	$ 34,865,003	(0)	$ 262,857,771	$ 249,231,087	5
Miscellaneous	(68,392)	173,842	(139)	2,277,926	1,256,765	81
Total	34,699,139	35,038,845	(1)	265,135,697	250,487,852	6
Bad debt expense	(91,500)	(83,583)	9	(732,000)	(668,664)	9
Total revenues	34,607,639	34,955,262	(1)	264,403,697	249,819,188	6
Operating and maintenance expenses						
Production fuel	20,710,545	20,853,541	(1)	156,589,106	140,622,284	11
Other production	1,304,426	1,494,243	(13)	10,060,005	11,044,059	(9)
	22,014,971	22,347,784	(1)	166,649,111	151,666,343	10
Depreciation	3,015,829	2,947,511	2	24,918,134	25,580,227	(3)
Energy conversion cost	1,012,670	1,436,403	(29)	9,866,390	11,970,389	(18)
Transmission & distribution	1,203,922	1,085,365	11	7,789,405	8,634,551	(10)
Customer accounting	465,939	577,591	(19)	3,486,309	3,586,616	(3)
Administrative & general	2,419,052	2,847,590	(15)	20,691,101	20,391,525	1
Total operating and maintenance expenses	30,132,383	31,242,244	(4)	233,400,450	221,829,651	5
Operating income	4,475,256	3,713,018	21	31,003,247	27,989,537	11
Other income (expenses)						
Interest income	344,696	373,878	(8)	2,921,990	1,687,508	73
Interest expense and amortization	(2,449,393)	(2,606,335)	(6)	(19,368,457)	(21,460,093)	(10)
Bond issuance costs	88,022	67,464	30	703,176	(1,979,129)	(136)
Bid bond forfeiture	0	0	0	(1,245,000)	0	
Allowance for funds used during construction	0	190,759	(100)	0	1,180,090	(100)
Losses due to typhoon	(66,912)	(294,555)		(705,196)	(491,854)	
Other expense	(4,298)	(4,291)	0	(34,335)	(34,328)	0
Total other income (expenses)	(2,087,885)	(2,273,080)	(8)	(17,727,822)	(21,097,806)	(16)
Income (loss) before capital contributions	2,387,371	1,439,938	66	13,275,425	6,891,731	93
Capital contributions	0	7,906	0	215,537	102,672	0
Increase (decrease) in net assets	2,387,371	1,447,844	65	13,490,962	6,994,403	93
Total net assets at beginning of period (restated)	(7,205,059)	115,723,116	0	(18,308,650)	110,176,557	(117)
Total net assets at end of period	$ (4,817,688)	$ 117,170,960	(104)	$ (4,817,688)	$ 117,170,960	(104)

GUAM POWER AUTHORITY
(A COMPONENT UNIT OF THE GOVERNMENT OF GUAM)
Statements of Cash Flows
Period Ended May 31, 2019

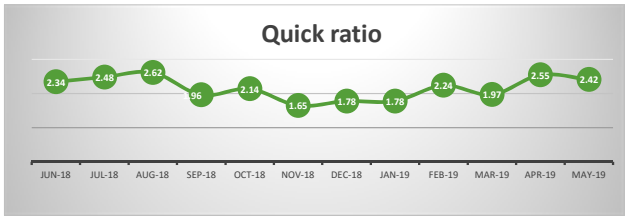
	Month Ended 5/31/2019	YTD Ended 5/31/2019
Increase(decrease) in cash and cash equivalents		
Cash flows from operating activities:		
Cash received from customers	$ 33,924,310	$ 259,203,840
Cash payments to suppliers and employees for goods and services	29,584,239	223,370,722
Net cash provided by operating activities	4,340,071	35,833,118
Cash flows from investing activities:		
Interest and dividends on investments and bank accounts	344,696	2,921,990
Net cash provided by investing activities	344,696	2,921,990
Cash flows from non-capital financing activities		
Interest paid on short term debt	(6,532)	(53,120)
Provision for self insurance funds	-	(17,380)
Net cash provided by noncapital financing activities	(6,532)	(70,500)
Cash flows from capital and related financing activities		
Acquisition of utility plant	(1,365,950)	(20,515,444)
Principal paid on bonds and other long-term debt	-	(1,630,000)
Interest paid on bonds(net of capitalized interest)	-	(28,066,875)
Interest paid on capital lease obligations	(102,742)	(671,839)
Interest & principal funds held by trustee	(3,680,352)	182,549
Reserve funds held by trustee	(44,564)	145,236
Bond funds held by trustee	1,119,544	18,880,035
Principal payment on capital lease obligations	(628,857)	(10,937,392)
Grant from DOI/FEMA	-	215,537
Debt issuance costs/loss on defeasance	(321,537)	(2,571,296)
Net cash provided by (used in) capital and related financing activities	(5,024,458)	(44,969,489)
Net (decrease) increase in cash and cash equivalents	(346,224)	(6,284,881)
Cash and cash equivalents, beginning	136,644,812	142,583,470
Cash and cash equivalents-Funds held by GPA, May 31, 2019	**$ 136,298,589**	**$ 136,298,589**

GUAM POWER AUTHORITY
(A COMPONENT UNIT OF THE GOVERNMENT OF GUAM)
Statements of Cash Flows, continued
Period Ended May 31, 2019

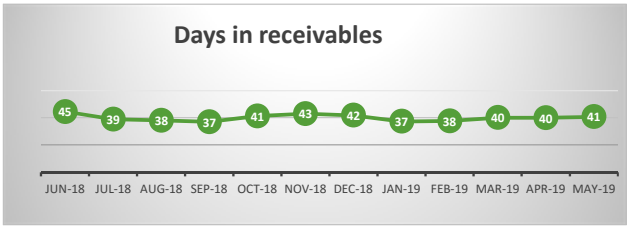
	Month Ended 5/31/2019	YTD Ended 5/31/2019
Reconciliation of operating earnings to net cash provided by operating activities:		
Operating earnings net of depreciation expense and excluding interest income	$ 4,475,256	$ 31,003,247
Adjustments to reconcile operating earnings to net cash provided by operating activities:		
Depreciation and amortization	3,015,829	24,918,134
Other expense	16,812	(1,281,355)
(Increase) decrease in assets:		
Accounts receivable	(673,035)	(5,227,678)
Materials and inventory	(1,126,842)	(231,597)
Fuel inventory	(2,285,394)	7,414,124
Prepaid expenses	459,989	(3,913,338)
Unamortized debt issuance cost	23,524	188,192
Deferred fuel revenue	(1,222,338)	(4,605,369)
Unamortized loss on debt refunding	196,711	1,573,688
Unamortized forward delivery contract costs	13,280	106,240
Increase (decrease) in liabilities:		
Accounts payable-operations	2,413,076	(12,955,748)
Accounts payable-others	(58,230)	1,452,110
Accrued payroll and employees' benefits	(1,123,563)	(556,879)
Net pension liability	(278,590)	(2,439,721)
Employees' annual leave	76,815	255,936
Customers deposits	465,439	522,287
Customer advances for construction	-	190
Unearned forward delivery contract revenue	(48,668)	(389,345)
Net cash provided by operating activities	**$ 4,340,071**	**$ 35,833,118**

Guam Power Authority
Financial Analysis
05/31/19

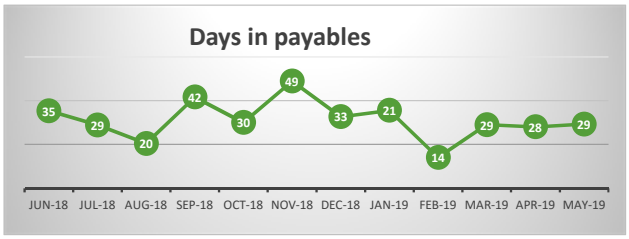
	Quick Ratio		
A	Reserve Funds Held by GPA		136,298,589
B	Current Accounts Receivable		43,811,834
C	Total Cash and A/R (A+B)		180,110,423
D	Total Current Liabilities		74,560,250
E	**Quick Ratio (F/G)**		**2.42**



	Days in Receivables		
A	FY 18 Moving 12 Mos.-Actual		391,955,555
B	No. of Days		365
C	Average Revenues per day (A/B)		1,073,851
D	Current Accounts Receivable		43,811,834
E	**Days in Receivables (D/C)**		**41**

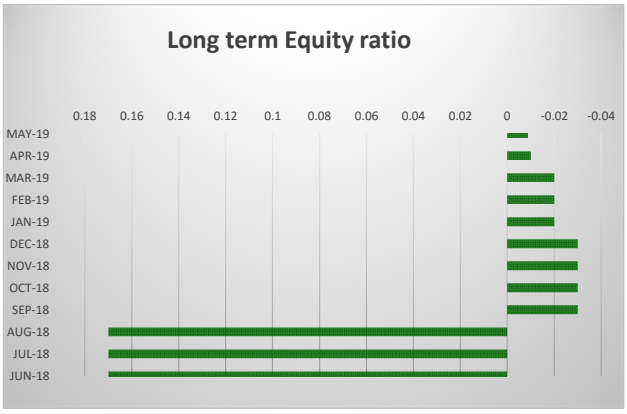


	Days in Payables		
A	FY 18 Moving 12 Months-Actual		450,548,561
B	No. of Days		365
C	Average Payables per day (A/B)		1,234,380
D	Current Accounts Payables		36,144,698
E	**Days in Payables (D/C)**		**29**

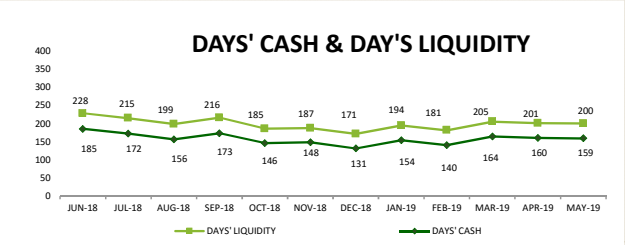


	Long term equity ratio		
A	Equity	$	(4,817,688.00)
B	Total Long term Liability	$	554,845,871.00
C	Total Equity and liability	$	550,028,183.00
D	**Long term equity ratio (A/C)**		**-0.88%**

	Days cash on hand		
A	Unresctricted cash & cash equivalents		136,299
B	No. of Days -YTD		243
C	A x B		33,120,557
D	Total Operating expenses excluding depreciation		208,482
E	**Days cash on hand**		**159**



	Days' Liquidity		
A	Unresctricted cash , cash equivalents & revolving		171,299
B	No. of Days -YTD		243
C	A x B		41,625,557
D	Total Operating expenses excluding depreciation		208,482
E	**Days liquidity**		**200**



GPA 302
11-Jun-19

GUAM POWER AUTHORITY
ACCRUED REVENUE
MAY 2019

	FOR THE MONTH ENDED MAY		EIGHT MONTHS ENDED MAY	
	2019	2018	2019	2018
KWH SALES:				
Residential	45,901,332	44,782,019	323,106,661	334,973,180
Small Gen. Non Demand	6,785,836	7,216,684	52,447,689	54,969,964
Small Gen. Demand	16,473,837	16,316,998	121,729,655	124,781,697
Large General	25,831,230	26,377,222	199,110,602	208,467,322
Independent Power Producer	31,329	26,295	250,760	364,430
Private St. Lights	33,473	34,126	262,764	263,236
Sub-total	95,057,036	94,753,344	696,908,132	723,819,828
Government Service:				
Small Non Demand	1,265,906	1,224,286	9,287,022	9,745,582
Small Demand	8,650,402	8,098,401	63,726,952	63,634,757
Large	6,344,614	6,622,597	47,742,351	50,993,697
Street Lighting	838,818	761,901	5,983,567	5,770,092
Sub-total	17,099,740	16,707,185	126,739,891	130,144,128
Total	112,156,776	111,460,529	823,648,023	853,963,956
U. S. Navy	28,255,054	26,624,376	206,294,381	208,396,216
GRAND TOTAL	140,411,830	138,084,906	1,029,942,404	1,062,360,172
REVENUE:				
Residential	$ 11,457,009	$ 11,371,498	$ 81,020,690	$ 77,648,495
Small Gen. Non Demand	$ 1,943,284	$ 2,127,563	$ 15,337,544	$ 14,978,149
Small Gen. Demand	$ 4,442,708	$ 4,513,787	$ 33,433,320	$ 31,836,542
Large General	$ 6,615,844	$ 6,798,955	$ 51,307,464	$ 49,276,449
Independent Power Producer	$ 8,600	$ 7,068	$ 70,165	$ 84,575
Private St. Lights	$ 25,670	$ 26,776	$ 206,441	$ 202,614
Sub-total	$ 24,493,115	$ 24,845,648	$ 181,375,624	$ 174,026,823
Government Service:				
Small Non Demand	$ 383,585	$ 372,707	$ 2,826,212	$ 2,757,215
Small Demand	$ 2,465,281	$ 2,323,025	$ 18,298,879	$ 16,981,217
Large	$ 1,743,611	$ 1,840,797	$ 13,222,015	$ 13,161,573
Street Lighting	$ 497,965	$ 477,272	$ 3,880,510	$ 3,535,184
Sub-total	$ 5,090,441	$ 5,013,801	$ 38,227,616	$ 36,435,189
Total	$ 29,583,556	$ 29,859,448	$ 219,603,239	$ 210,462,012
U. S. Navy	$ 5,183,974	$ 5,005,555	$ 43,254,530	$ 38,769,075
GRAND TOTAL	$ 34,767,531	$ 34,865,003	$ 262,857,769	$ 249,231,087
NUMBER OF CUSTOMERS:				
Residential	44,640	44,086	44,125	44,013
Small Gen. Non Demand	4,213	4,172	4,182	4,150
Small Gen. Demand	983	988	984	985
Large General	119	119	119	119
Independent Power Producer	2	2	2	2
Private St. Lights	520	533	523	530
Sub-total	50,477	49,900	49,936	49,798
Government Service:				
Small Non Demand	676	691	677	684
Small Demand	355	350	353	351
Large	42	47	43	47
Street Lighting	618	526	626	433
Sub-total	1,691	1,614	1,698	1,515
Total	52,168	51,514	51,634	51,312
US Navy	1	1	1	1
GRAND TOTAL	52,169	51,515	51,635	51,313

GPA403
11-Jun-19

GUAM POWER AUTHORITY
ACCRUED REVENUE

	TWELVE MONTHS ENDING	MAY 2019	APRIL 2019	MARCH 2019	FEBRUARY 2019	JANUARY 2019	DECEMBER 2018	NOVEMBER 2018	OCTOBER 2018	SEPTEMBER 2018	AUGUST 2018	JULY 2018	JUNE 2018
KWH SALES:													
Residential	483,480,229	45,901,332	42,026,049	40,399,698	33,484,048	36,661,215	41,291,151	41,148,899	42,194,270	37,207,511	39,748,314	41,361,122	42,056,621
Small General Non Demand	78,897,330	6,785,836	7,066,118	6,549,399	5,421,847	6,252,665	6,871,789	6,712,433	6,787,602	6,128,698	6,737,467	6,743,157	6,840,318
Small General Demand	181,553,111	16,473,837	15,551,604	15,250,813	13,414,678	14,926,054	15,425,672	15,054,686	15,632,311	14,018,162	15,283,605	15,161,689	15,360,000
Large General	298,011,529	25,831,230	24,717,184	24,793,966	22,118,423	24,846,497	25,790,483	26,074,017	24,938,803	23,573,240	24,724,982	25,339,577	25,263,128
Private Outdoor Lighting	402,584	33,473	30,560	32,171	32,766	32,878	33,401	33,984	33,531	34,933	33,511	34,288	37,088
Independent Power Producer	366,045	31,329	28,130	34,407	25,891	36,117	28,494	35,867	30,526	29,708	30,251	30,088	25,238
Sub-Total	1,042,710,829	95,057,036	89,419,645	87,060,454	74,497,653	82,755,426	89,440,990	89,059,886	89,617,042	80,992,253	86,558,130	88,669,920	89,582,394
Government Service:													
Small Non Demand	13,868,424	1,265,906	1,195,401	1,192,582	1,019,279	1,066,520	1,218,540	1,096,422	1,232,371	1,089,787	1,205,730	1,128,046	1,157,839
Small Demand	93,038,132	8,650,402	8,019,578	8,144,760	7,207,579	7,752,635	8,107,721	7,758,614	8,085,662	7,082,161	7,641,330	7,182,975	7,404,715
Large	71,398,961	6,344,614	5,914,002	5,983,823	5,273,740	5,782,397	6,098,140	5,989,384	6,356,251	5,873,776	6,179,381	5,707,305	5,896,149
Street Lighting (Agencies)	9,259,693	838,818	763,841	710,856	791,792	714,935	805,684	744,605	613,035	734,966	842,364	903,135	795,661
Sub-Total	187,565,210	17,099,740	15,892,823	16,032,021	14,292,390	15,316,487	16,230,084	15,589,026	16,287,319	14,780,690	15,868,805	14,921,461	15,254,364
Total	1,230,276,039	112,156,776	105,312,468	103,092,475	88,790,044	98,071,914	105,671,074	104,648,912	105,904,361	95,772,942	102,426,935	103,591,381	104,836,757
U.S. Navy	304,358,337	28,255,054	27,083,234	26,077,843	22,368,909	24,517,651	26,518,827	24,888,490	26,584,373	23,161,867	24,921,140	25,089,942	24,891,007
Grand Total	1,534,634,376	140,411,830	132,395,702	129,170,318	111,158,952	122,589,564	132,189,902	129,537,402	132,488,734	118,934,809	127,348,076	128,681,323	129,727,764
REVENUE:													
Residential	$ 121,195,626	$ 11,457,009	$ 10,559,992	$ 10,171,326	$ 8,491,117	$ 9,109,499	$ 10,347,514	$ 10,286,420	$ 10,597,812	$ 9,335,975	$ 9,971,178	$ 10,379,963	$ 10,487,819
Small General Non Demand	$ 23,038,235	$ 1,943,284	$ 2,086,044	$ 1,927,366	$ 1,599,494	$ 1,844,100	$ 2,002,603	$ 1,938,660	$ 1,995,993	$ 1,793,407	$ 1,962,561	$ 1,975,429	$ 1,969,294
Small General Demand	$ 49,850,727	$ 4,442,708	$ 4,275,919	$ 4,237,399	$ 3,714,204	$ 4,135,462	$ 4,234,344	$ 4,091,967	$ 4,301,317	$ 3,892,588	$ 4,192,538	$ 4,181,623	$ 4,150,658
Large General	$ 76,950,076	$ 6,615,844	$ 6,321,363	$ 6,456,767	$ 5,778,637	$ 6,433,966	$ 6,618,506	$ 6,715,109	$ 6,367,272	$ 6,170,948	$ 6,427,049	$ 6,510,707	$ 6,533,909
Private Outdoor Lighting	$ 312,867	$ 25,670	$ 25,155	$ 25,651	$ 25,784	$ 26,100	$ 25,860	$ 26,021	$ 26,201	$ 26,392	$ 26,189	$ 26,302	$ 27,542
Independent Power Producer	$ 102,701	$ 8,600	$ 7,310	$ 9,896	$ 7,681	$ 10,117	$ 7,355	$ 10,699	$ 8,507	$ 8,392	$ 7,924	$ 9,619	$ 6,601
Sub-Total	$ 271,450,232	$ 24,493,115	$ 23,275,783	$ 22,828,405	$ 19,616,918	$ 21,559,243	$ 23,236,182	$ 23,068,875	$ 23,297,103	$ 21,227,703	$ 22,587,439	$ 23,083,643	$ 23,175,823
Government Service:													
Small Non Demand	$ 4,226,886	$ 383,585	$ 361,853	$ 364,404	$ 311,171	$ 328,284	$ 373,332	$ 335,403	$ 368,179	$ 335,723	$ 366,623	$ 343,795	$ 354,533
Small Demand	$ 26,857,922	$ 2,465,281	$ 2,284,016	$ 2,363,416	$ 2,065,940	$ 2,248,023	$ 2,372,119	$ 2,230,742	$ 2,269,343	$ 2,104,471	$ 2,213,718	$ 2,081,391	$ 2,159,463
Large	$ 19,913,053	$ 1,743,611	$ 1,632,794	$ 1,668,683	$ 1,492,275	$ 1,614,932	$ 1,688,786	$ 1,646,650	$ 1,734,285	$ 1,680,530	$ 1,733,549	$ 1,609,173	$ 1,667,786
Street Lighting (Agencies)	$ 5,902,809	$ 497,965	$ 482,529	$ 472,435	$ 488,836	$ 465,560	$ 498,967	$ 479,197	$ 495,021	$ 477,638	$ 499,032	$ 568,447	$ 477,183
Sub-Total	$ 56,900,670	$ 5,090,441	$ 4,761,191	$ 4,868,938	$ 4,358,222	$ 4,656,799	$ 4,933,204	$ 4,691,993	$ 4,866,827	$ 4,598,362	$ 4,812,921	$ 4,602,806	$ 4,658,965
Total	$ 328,350,902	$ 29,583,556	$ 28,036,974	$ 27,697,343	$ 23,975,139	$ 26,216,042	$ 28,169,387	$ 27,760,868	$ 28,163,930	$ 25,826,065	$ 27,400,361	$ 27,686,449	$ 27,834,788
U.S. Navy	$ 63,604,654	$ 5,183,974	$ 4,925,354	$ 5,245,421	$ 5,307,473	$ 5,221,857	$ 5,266,617	$ 6,152,798	$ 5,951,036	$ 5,271,574	$ 5,243,314	$ 5,217,194	$ 4,618,042
Grand Total	$ 391,955,555	$ 34,767,531	$ 32,962,328	$ 32,942,764	$ 29,282,613	$ 31,437,899	$ 33,436,004	$ 33,913,666	$ 34,114,966	$ 31,097,639	$ 32,643,674	$ 32,903,643	$ 32,452,830
NUMBER OF CUSTOMERS:													
Residential	44,081	44,640	44,200	44,144	44,018	44,091	43,920	43,876	44,112	43,887	44,005	44,003	44,074
Small General Non Demand	4,180	4,213	4,185	4,183	4,173	4,180	4,166	4,176	4,183	4,159	4,185	4,183	4,173
Small General Demand	984	983	985	985	984	986	987	981	984	982	984	982	984
Large General	119	119	118	121	119	119	118	119	117	118	118	119	119
Private Outdoor Lighting	525	520	522	523	521	522	523	524	527	525	525	531	532
Independent Power Producer	2	2	2	2	2	2	2	3	2	3	3	3	3
Sub-Total	49,890	50,477	50,012	49,958	49,817	49,900	49,716	49,679	49,925	49,674	49,820	49,821	49,885
Government Service:													
Small Non Demand	680	676	672	675	678	679	683	667	686	677	683	690	694
Small Demand	352	355	356	357	357	356	360	327	352	353	354	351	351
Large	44	42	42	42	42	42	47	38	47	47	47	47	47
Street Lighting (Agencies)	618	618	621	629	628	628	628	628	629	627	614	612	559
Sub-Total	1,695	1,691	1,691	1,703	1,705	1,705	1,718	1,660	1,714	1,704	1,698	1,700	1,651
Total	51,585	52,168	51,703	51,661	51,522	51,605	51,434	51,339	51,639	51,378	51,518	51,521	51,536
U.S. Navy	1	1	1	1	1	1	1	1	1	1	1	1	1
Grand Total	51,586	52,169	51,704	51,662	51,523	51,606	51,435	51,340	51,640	51,379	51,519	51,522	51,537

GPA303

GUAM POWER AUTHORITY
ACCRUED REVENUE
MAY 2019

RATE	NUMBER OF CUSTOMERS	KWH SALES	TOTAL REVENUE AMOUNT	TOTAL REVENUE C/KWH	BASE RATE REVENUE C/KWH	BASE RATE REVENUE AMOUNT	AVERAGE PER CUSTOMER KWH	AVERAGE PER CUSTOMER REVENUE	NON-FUEL C/KWH	NON-FUEL AMOUNT	0.154242 C/KWH	0.154242 AMOUNT
Month												
R Residential	44,640	45,901,332	$ 11,457,009	$ 24.96	$ 24.96	$ 11,457,009	1,028	$ 257	$ 9.54	$ 4,377,096	$ 15.42	$ 7,079,913
G Small Gen. Non Demand	4,213	6,785,836	$ 1,943,284	$ 28.64	$ 28.64	$ 1,943,284	1,611	$ 461	$ 13.21	$ 896,623	$ 15.42	$ 1,046,661
J Small Gen. Demand	983	16,473,837	$ 4,442,708	$ 26.97	$ 26.97	$ 4,442,708	16,759	$ 4,520	$ 11.55	$ 1,902,944	$ 15.42	$ 2,539,764
P Large General	119	25,831,230	$ 6,615,844	$ 25.61	$ 25.61	$ 6,615,844	217,069	$ 55,595	$ 10.26	$ 2,650,598	$ 15.35	$ 3,965,246
I Independent Power Producer	2	31,329	$ 8,600	$ 27.45	$ 27.45	$ 8,600	15,665	$ 4,300	$ 12.56	$ 3,936	$ 14.89	$ 4,664
H Private St. Lights	520	33,473	$ 25,670	$ 76.69	$ 76.69	$ 25,670	64	$ 49	$ 61.26	$ 20,507	$ 15.42	$ 5,163
Sub-Total	50,477	95,057,036	$ 24,493,115	$ 25.77	$ 25.77	$ 24,493,115	1,883	$ 485	$ 10.36	$ 9,851,705	$ 15.40	$ 14,641,410
Government Service:												
S Small Non Demand	676	1,265,906	$ 383,585	$ 30.30	$ 30.30	$ 383,585	1,873	$ 567	$ 14.88	$ 188,330	$ 15.42	$ 195,256
K Small Demand	355	8,650,402	$ 2,465,281	$ 28.50	$ 28.50	$ 2,465,281	24,367	$ 6,944	$ 13.07	$ 1,131,025	$ 15.42	$ 1,334,255
L Large	42	6,344,614	$ 1,743,611	$ 27.48	$ 27.48	$ 1,743,611	151,062	$ 41,515	$ 12.24	$ 776,546	$ 15.24	$ 967,064
F Street Lighting (Agencies)	618	838,818	$ 497,965	$ 59.37	$ 59.37	$ 497,965	1,357	$ 806	$ 43.94	$ 368,584	$ 15.42	$ 129,381
Sub-Total	1,691	17,099,740	$ 5,090,441	$ 29.77	$ 29.77	$ 5,090,441	10,112	$ 3,010	$ 14.41	$ 2,464,485	$ 15.36	$ 2,625,956
	52,168	112,156,776	$ 29,583,556	$ 26.38	$ 26.38	$ 29,583,556	2,150	$ 567	$ 10.98	$ 12,316,190	$ 15.40	$ 17,267,367
U.S. Navy	1	28,255,054	$ 5,183,974	$ 18.35	$ 18.35	$ 5,183,974			$ 6.16	$ 1,740,797	$ 12.19	$ 3,443,178
TOTAL	52,169	140,411,830	$ 34,767,531	$ 24.76	$ 24.76	$ 34,767,531	2,691	$ 666	$ 10.01	$ 14,056,987	$ 14.75	$ 20,710,544
Eight Months Ending May 2019												
R Residential	44,125	323,106,661	$ 81,020,690	$ 25.08	$ 25.08	$ 81,020,690	7,323	$ 1,836	$ 9.65	$ 31,184,072	$ 15.42	$ 49,836,618
G Small Gen. Non Demand	4,182	52,447,689	$ 15,337,544	$ 29.24	$ 29.24	$ 15,337,544	12,540	$ 3,667	$ 13.82	$ 7,247,907	$ 15.42	$ 8,089,636
J Small Gen. Demand	984	121,729,655	$ 33,433,320	$ 27.47	$ 27.47	$ 33,433,320	123,662	$ 33,964	$ 12.05	$ 14,665,716	$ 15.42	$ 18,767,604
P Large General	119	199,110,602	$ 51,307,464	$ 25.77	$ 25.77	$ 51,307,464	1,676,721	$ 432,063	$ 10.42	$ 20,740,637	$ 15.35	$ 30,566,827
I Independent Power Producer	2	250,760	$ 70,165	$ 27.98	$ 27.98	$ 70,165	118,005	$ 33,019	$ 13.10	$ 32,847	$ 14.88	$ 37,318
H Private St. Lights	523	262,764	$ 206,441	$ 78.57	$ 78.57	$ 206,441	503	$ 395	$ 63.14	$ 165,912	$ 15.42	$ 40,529
Sub-Total	49,936	696,908,132	$ 181,375,624	$ 26.03	$ 26.03	$ 181,375,624	13,956	$ 3,632	$ 10.62	$ 74,037,091	$ 15.40	$ 107,338,532
Government Service:												
S Small Non Demand	677	9,287,022	$ 2,826,212	$ 30.43	$ 30.43	$ 2,826,212	13,718	$ 4,175	$ 15.01	$ 1,393,763	$ 15.42	$ 1,432,449
K Small Demand	353	63,726,952	$ 18,298,879	$ 28.71	$ 28.71	$ 18,298,879	180,786	$ 51,912	$ 13.29	$ 8,469,507	$ 15.42	$ 9,829,373
L Large	43	47,742,351	$ 13,222,015	$ 27.69	$ 27.69	$ 13,222,015	1,116,780	$ 309,287	$ 12.46	$ 5,946,475	$ 15.24	$ 7,275,540
F Street Lighting (Agencies)	626	5,983,567	$ 3,880,510	$ 64.85	$ 64.85	$ 3,880,510	9,557	$ 6,198	$ 49.43	$ 2,957,592	$ 15.42	$ 922,917
Sub-Total	1,698	126,739,891	$ 38,227,616	$ 30.16	$ 30.16	$ 38,227,616	74,624	$ 22,508	$ 14.81	$ 18,767,337	$ 15.35	$ 19,460,279
U.S. Navy	1	206,294,381	$ 43,254,530	$ 20.97	$ 20.97	$ 43,254,530			$ 6.53	$ 13,464,235	$ 14.44	$ 29,790,295
TOTAL	51,635	1,029,942,404	$ 262,857,769	$ 25.52	$ 25.52	$ 262,857,769	19,947	$ 5,091	$ 10.32	$ 106,268,664	$ 15.20	$ 156,589,106
Twelve Months Ending May 2019												
R Residential	44,081	483,480,229	$ 121,195,626	$ 25.07	$ 25.07	$ 121,195,626	10,968	$ 2,749	$ 9.64	$ 46,622,668	$ 15.42	$ 74,572,958
G Small Gen. Non Demand	4,180	78,897,330	$ 23,038,235	$ 29.20	$ 29.20	$ 23,038,235	18,875	$ 5,512	$ 13.78	$ 10,868,953	$ 15.42	$ 12,169,282
J Small Gen. Demand	984	181,553,111	$ 49,850,727	$ 27.46	$ 27.46	$ 49,850,727	184,521	$ 50,666	$ 12.04	$ 21,859,167	$ 15.42	$ 27,991,560
P Large General	119	298,011,529	$ 76,950,076	$ 25.82	$ 25.82	$ 76,950,076	2,511,333	$ 648,456	$ 10.47	$ 31,192,682	$ 15.35	$ 45,757,394
I Independent Power Producer	2	366,045	$ 102,701	$ 28.06	$ 28.06	$ 102,701	151,467	$ 42,497	$ 68.51	$ 250,772	$ 14.89	$ 54,492
H Private St. Lights	525	402,584	$ 312,867	$ 77.71	$ 77.71	$ 312,867	767	$ 596	$ 11.97	$ 48,208	$ 15.42	$ 62,095
Sub-Total	49,890	1,042,710,829	$ 271,450,232	$ 26.03	$ 26.03	$ 271,450,232	20,900	$ 5,441	$ 10.63	$ 110,842,451	$ 15.40	$ 160,607,781
Government Service:												
S Small Non Demand	680	13,868,424	$ 4,226,886	$ 30.48	$ 30.48	$ 4,226,886	20,395	$ 6,216	$ 15.05	$ 2,087,793	$ 15.42	$ 2,139,094
K Small Demand	352	93,038,132	$ 26,857,922	$ 28.87	$ 28.87	$ 26,857,922	264,000	$ 76,211	$ 13.44	$ 12,507,534	$ 15.42	$ 14,350,388
L Large	44	71,398,961	$ 19,913,053	$ 27.89	$ 27.89	$ 19,913,053	1,616,580	$ 450,862	$ 12.65	$ 9,032,887	$ 15.24	$ 10,880,166
F Street Lighting (Agencies)	618	9,259,693	$ 5,902,809	$ 63.75	$ 63.75	$ 5,902,809	14,973	$ 9,545	$ 48.32	$ 4,474,575	$ 15.42	$ 1,428,233
Sub-Total	1,695	187,565,210	$ 56,900,670	$ 30.34	$ 30.34	$ 56,900,670	110,658	$ 33,570	$ 14.98	$ 28,102,789	$ 15.35	$ 28,797,880
	51,585	1,230,276,039	$ 328,350,902	$ 26.69	$ 26.69	$ 328,350,902	23,849	$ 6,365	$ 11.29	$ 138,945,240	$ 15.40	$ 189,405,661
U.S. Navy	1	304,358,337	$ 63,604,654	$ 20.90	$ 20.90	$ 63,604,654			$ 6.48	$ 19,718,978	$ 14.42	$ 43,885,676
TOTAL	51,586	1,534,634,376	$ 391,955,555	$ 25.54	$ 25.54	$ 391,955,555	29,749	$ 7,598	$ 10.34	$ 158,664,218	$ 15.20	$ 233,291,337

GPA-318 **ENERGY ACCOUNT** **FOR INTERNAL USE ONLY**

318May19 **FY 2019 Versus FY 2018**

	May 2019		May 2018		Y T D 2019		Y T D 2018		MOVING TWELVE MONTHS	
Gross Generation										
Number of days in Period	**31**		**31**		**243**		**61**		**365**	
Peak demand	**254**		**249**		**254**		**254**		**249**	
Date	**05/30/19**		**05/14/18**		**05/30/19**		**10/30/17**		**05/14/18**	
	KWH	**% change**	**KWH**	**% change**	**KWH**	**% change**	**KWH**	**% change**	**KWH**	**% change**
Energy Account:										
Kilowatt hours GPA:										
Cabras 1 & 2	70,945,000		56,512,000		499,806,000		453,754,000		697,287,000	
Cabras No. 3	0		0		0		0		0	
Cabras No. 4	0		0		0		0		0	
MEC (ENRON) Piti 8 (IPP)	14,423,000		27,409,700		174,444,300		212,560,900		280,257,300	
MEC (ENRON) Piti 9 (IPP)	28,683,200		29,215,300		201,916,200		222,460,200		303,291,900	
TEMES Piti 7 (IPP)	3,916,718		2,215,440		39,823,424		16,148,831		63,988,090	
Tanguisson 2	0		0		0		0		0	
Tanguisson 1	0		0		0		0		0	
Diesels/CT's & Others:							0			
MDI 10MW	506,376		0		623,389		946,580		977,067	
NRG Solar Dandan	4,762,146		4,537,268		32,604,547		32,346,595		46,559,298	
Dededo CT #1	864,240		543,500		4,579,500		5,696,850		10,688,720	
Dededo CT #2	1,844,430		713,680		6,416,340		4,568,900		14,073,910	
Macheche CT	3,374,689		6,000,136		35,234,080		36,364,273		47,224,548	
Yigo CT (Leased)	4,826,186		5,203,060		34,300,479		28,050,249		55,163,396	
Tenjo	3,041,310		3,061,560		18,054,570		30,371,570		29,181,130	
Talofofo 10 MW	722,170		1,125,490		5,150,130		10,527,260		7,934,770	
Aggreko	16,530,113		15,031,436		83,766,875		109,724,453		134,770,511	
Wind Turbine*	10,850		9,594		123,147		293,592		141,859	
Orote	0		0		0		0		0	
Marbo	0		0		0		0		0	
	154,450,428		**151,578,165**		**1,136,842,980**		**1,163,814,253**		**1,691,539,498**	
Ratio to last year		101.89		96.26		97.68		**99.77**		**96.09**
Station use	5,872,738		5,209,578		44,274,757		42,597,775		64,392,922	
Ratio to Gross generation		3.80		3.44		3.89		3.66		**3.81**
Net send out	148,577,689		146,368,586		1,092,568,223		1,121,216,477		1,627,146,576	
Ratio to last year		101.51		96.49		97.44		**100.07**		**95.83**
KWH deliveries:										
Sales to Navy (@34.5kv)	**28,255,054**		**26,624,376**		**206,294,381**		**208,396,216**		**304,358,337**	
Ratio to last year		106.12		96.08		98.99		**98.34**		**96.60**
GPA-metered	**120,322,635**		**119,744,210**		**886,273,842**		**912,820,261**		**1,322,788,239**	
Ratio to last year		100.48		96.58		97.09		**100.47**		**95.65**
Power factor adj.	0		0		0		0		0	
Adjusted	120,322,635		119,744,210		886,273,842		912,820,261		1,322,788,239	
GPA KWH Accountability:										
Sales to civilian customers-										
accrual basis	**112,156,776**		**111,460,529**		**823,648,024**		**853,963,955**		**1,230,276,039**	
Ratio to last year		100.62		96.67		96.45		**100.54**		**94.92**
GPA use-KWH	365,521		369,108		2,720,860		2,557,628		4,050,801	
Unaccounted For	7,800,338		7,914,573		59,904,958		56,298,678		88,461,400	
Ratio to deliveries		6.48		6.61		6.76		6.17		6.69
Ratio to Gross Generation		5.05		5.22		5.27		4.84		5.23
Ratio to Net Send Out		5.25		5.41		5.48		5.02		5.44

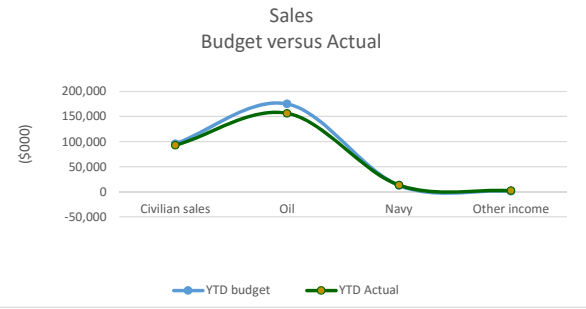
GPA-317May19

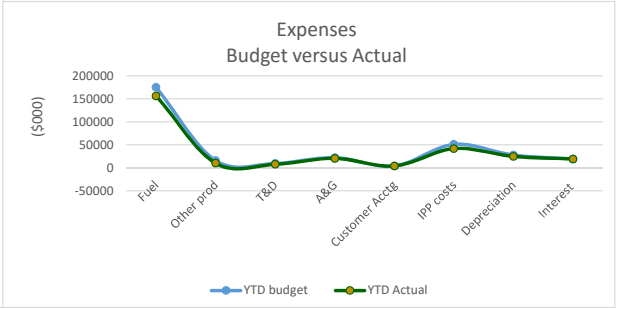
Guam Power Authority
Fuel Consumption
FY 2019

Description	May 2019 BARRELS	May 2019 AMOUNT	YEAR-TO-DATE BARRELS	YEAR-TO-DATE AMOUNT	MOVING 12 MONTHS BARREL S	MOVING 12 MONTHS AMOUNT
FUEL FURNISHED:						
NAVY:						
Diesel	0	0	0	0	0	0
Low Sulfur	0	0	0	0	0	0
	0	**0**	**0**	**0**	**0**	**0**
GPA:						
RFO	141,108	$10,243,922	941,120	$ 69,839,188	1,323,452	$ 96,073,815
Diesel	74,491	$7,055,124	483,795	$ 46,125,726	774,032	$ 74,168,650
Low Sulfur	36,718	$3,107,878	396,400	$ 33,522,584	629,406	$ 49,235,309
Deferred Fuel Costs	0	-$1,222,338	0	$ (4,605,370)	0	$ (2,333,070)
Fuel Adjustments	0	-$1,832		$ 54,766	0	$ (162,394)
Fuel Handling Costs	0	$1,527,791	0	$ 11,652,211	0	$ 17,088,318
	252,317	**$20,710,545**	**1,821,315**	**$ 156,589,106**	**2,726,890**	**$ 234,070,629**
IWPS:						
GPA RFO	141,108	$10,243,922	941,120	$ 69,839,188	1,323,452	$ 96,073,815
Diesel	74,491	$7,055,124	483,795	$ 46,125,726	774,032	$ 74,168,650
Low Sulfur	36,718	$3,107,878	396,400	$ 33,522,584	629,406	$ 49,235,309
Deferred Fuel Costs	0	-$1,222,338	0	$ (4,605,370)	0	$ (2,333,070)
Fuel Variance	0	-$1,832	0	$ 54,766		$ (162,394)
Fuel Handling Costs	0	$1,527,791	0	$ 11,652,211	0	$ 17,088,318
	252,317	**$20,710,545**	**1,821,315**	**$ 156,589,106**	**2,726,890**	**$ 234,070,629**
AVERAGE COST/Bbl.						
GPA RFO		**$72.60**		**$74.21**		**$72.59**
Diesel		**$94.71**		**$95.34**		**$95.82**
Low Sulfur		**$84.64**		**$84.57**		**$78.23**
AS BURNED						
Cabras 1 & 2						
RFO	93,347	$ 6,785,647	675,580	$ 50,554,872	875,518	$ 64,357,639
Low Sulfur	25,965	$ 2,197,674	160,809	$ 13,527,788	300,399	$ 22,955,944
Diesel	226	$ 20,950	1,240	$ 120,703	2,317	$ 219,964
	119,538	$ 9,004,271	837,629	$ 64,203,363	1,178,234	$ 87,533,547
Cabras 3 & 4						
RFO	0	$ -	0	$ -	0	$ -
Low Sulfur	0	$ -	0	$ -	0	$ -
Diesel	0	$ -	0	$ -	0	$ -
	0	$ -	0	$ -	0	$ -
MEC (Piti Units 8&9)						
RFO	47,761	$ 3,458,275	265,540	$ 19,284,316	447,934	$ 31,716,176
Low Sulfur	10,754	$ 910,204	235,591	$ 19,994,797	329,007	$ 26,279,365
Diesel	0	$ -	26	$ 1,866	56	$ 3,930
	58,515	$ 4,368,479	501,157	$ 39,280,979	776,997	$ 57,999,472
Diesel & CT's - GPA:						
MDI Dsl	811	$ 67,138	944	$ 77,170	1,583	$ 124,621
Macheche CT	7,323	$ 695,227	76,396	$ 7,220,750	101,730	$ 9,635,920
Yigo CT	10,259	$ 933,349	74,274	$ 7,006,102	118,394	$ 11,265,514
Talofofo 10 MW	1,256	$ 112,997	8,991	$ 820,838	13,319	$ 1,248,101
Aggreko	30,372	$ 2,918,550	154,066	$ 14,473,981	248,139	$ 23,706,851
Tenjo	5,237	$ 569,367	31,963	$ 3,357,023	49,406	$ 5,134,560
TEMES (IPP)	10,816	$ 998,128	101,940	$ 9,810,812	163,469	$ 15,687,404
GWA Generators	6	$ 761	858	$ 110,579	2,216	$ 270,244
	74,265	$ 7,034,174	482,529	$ 46,003,156	771,659	$ 73,944,755
Deferred Fuel Costs	0	$ (1,222,338)		$ (4,605,370)		$ (2,333,070)
Adjustment		$ (1,832)		$ 54,766		$ (162,394)
Fuel Handling Costs	0	$ 1,527,791		$ 11,652,211		$ 17,088,318
TOTAL	**252,318**	**$ 20,710,545**	**1,821,315**	**$ 156,589,106**	**2,726,890**	**$ 234,070,629**

Statement of operations
Comparison-Budget versus Actual
For the month and year to date ended May 31, 2019

	Budget	Actual May-19	Variance	YTD Budget	YTD Actual	Variance
KwH Sales-Civilian	116,325	112,157	4,168	856,569	823,647	32,922
Non-fuel yield	$ 0.105171	$ 0.109810	$ (0.004639)	$ 0.105171	$ 0.112674	$ (0.007504)
KwH Sales-Navy	26,910	28,255	(1,345)	205,805	206,294	(489)
Non-fuel yield	$ 0.062350	$ 0.061617	$ 0.000733	$ 0.062350	$ 0.065271	$ (0.002921)
Operating revenue						
Civilian sales	$ 12,952	$ 12,316	$ 636	$ 95,951	$ 92,804	$ 3,147
Oil	25,197	20,711	4,486	175,325	156,590	18,735
Navy	1,678	1,741	(63)	12,832	13,465	(633)
Other income	168	(68)	237	1,347	2,278	(931)
	$ 39,995	$ 34,700	$ 5,296	$ 285,455	$ 265,137	$ 20,318
Bad debts expense	92	92	-	732	732	-
Total operating revenues	$ 39,904	$ 34,608	$ 5,296	$ 284,723	$ 264,405	$ 20,318
Operating expenses:						
Production fuel	$ 25,197	$ 20,711	$ 4,486	$ 175,325	$ 156,589	$ 18,736
O & M expenses:						
Other production	2,016	1,304	712	15,885	10,060	5,825
Transmission distribution	1,197	1,204	(7)	9,623	7,789	1,833
Administrative expense	3,140	2,419	721	22,342	20,691	1,651
Customer accounting	399	466	(67)	3,206	3,486	(280)
	6,753	5,393	1,359	51,056	42,027	9,029
IPP costs	1,347	1,013	335	10,778	9,866	912
Depreciation	3,501	3,016	486	28,011	24,918	3,093
	$ 36,798	$ 30,132	$ 6,666	$ 265,170	$ 233,400	$ 31,770
Operating income	$ 3,106	$ 4,476	$ (1,370)	$ 19,553	$ 31,004	$ (11,452)
Other revenue (expenses):						
Investment income	177	345	(168)	1,416	2,922	(1,506)
Interest expense	(2,414)	(2,449)	36	(19,469)	(19,368)	(101)
AFUDC	202	-	202	1,613	-	1,613
Bid bond forfeiture	-	-	-	-	(1,245)	1,245
Losses due to typhoon	-	(67)	67	-	(705)	705
Bond issuance costs/Other expenses	142	84	59	1,139	669	470
Net income before capital contribution	1,213	2,388	(1,176)	4,251	13,276	(9,026)
Grants from the U.S. Government	-	-	-	-	216	(216)
Increase (decrease) in net assets	$ 1,213	$ 2,388	$ (1,176)	$ 4,251	$ 13,492	$ (9,242)





Guam Power Authority
Debt service coverage
May 31, 2019

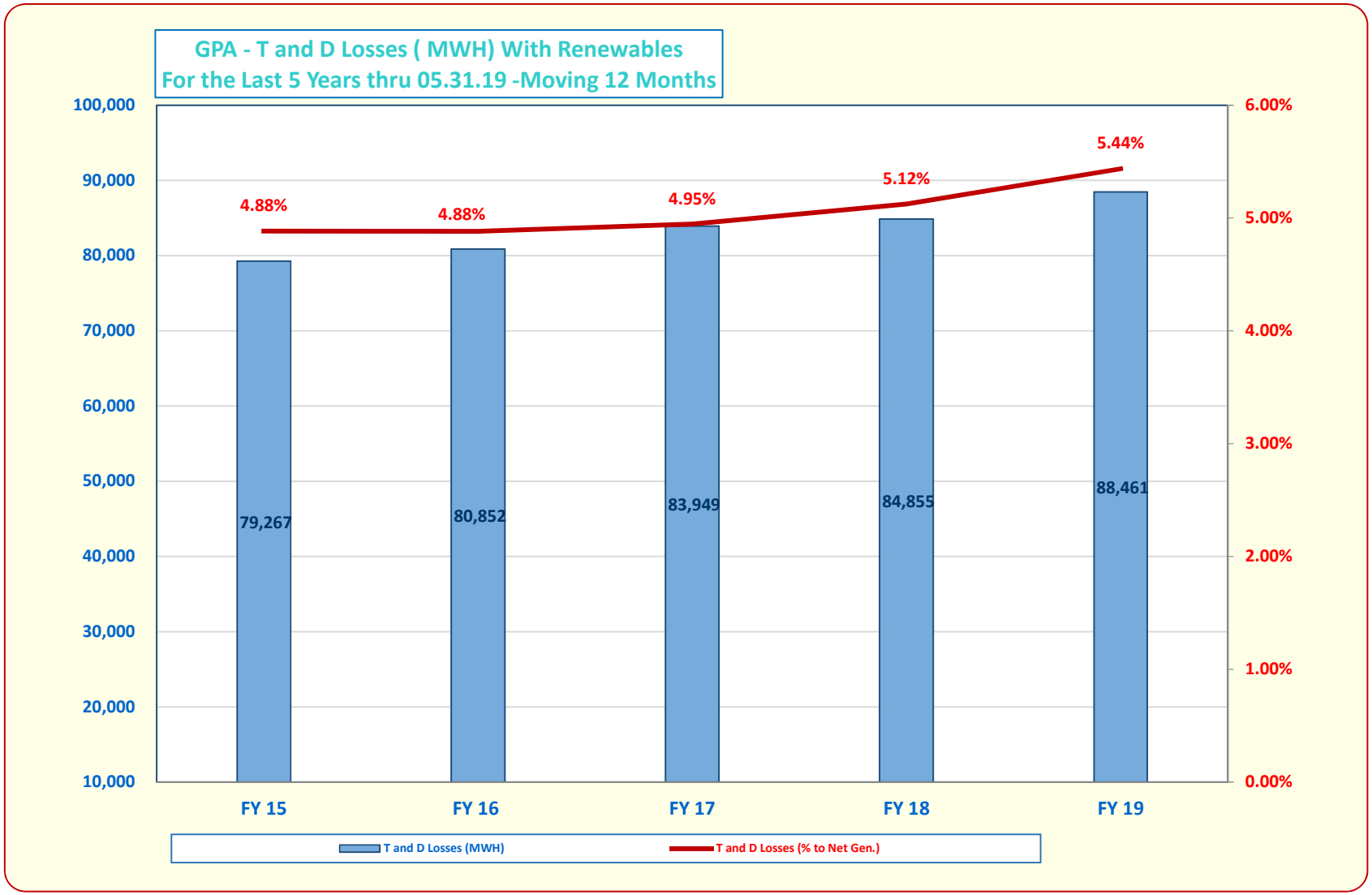
	2015	2016	Restated 2017	Audited 2018	YTD Unaudited 2019
Funds Available for Debt Service					
Earnings from Operations	$ 48,758	$ 37,981	$ 36,522	$ 38,164	$ 31,003
Interest Income	256	57	122	620	2,223
Depreciation Expense	41,766	44,240	44,292	37,184	24,918
Balance Available for Debt Service	$ 90,780	$ 82,278	$ 80,936	$ 75,968	$ 58,144
IPP - Capital Costs					
Principal	$ 18,144	$ 14,819	$ 20,796	$ 23,210	$ 10,955
Interest	8,478	5,970	5,609	3,159	768
Total IPP Payments	$ 26,622	$ 20,789	$ 26,405	$ 26,369	$ 11,723
Bond Debt Service					
Principal (1993 & 1999 Revenue Bond)	$ -	$ -	$ -	$ -	$ -
Interest (1993 & 1999 Revenue Bond)	-	-	-	-	-
Principal and Interest (2010 Subordinate Bond)	9,605	-	-	-	-
Principal and Interest (2010 Senior TE Bond)	7,999	7,999	7,999	2,000	-
Principal and Interest (2012 Senior TE Bond)	17,096	17,098	17,449	17,086	20,978
Principal and Interest (2014 Senior TE Bond)	-	10	5,084	5,083	3,389
Principal and Interest (2017 Senior TE Bond)				5,916	5,071
Total	$ 34,700	$ 25,107	$ 30,532	$ 30,086	$ 29,439
Debt Service Coverage (DSC) Calculation					
Existing DSC Methodology (Senior)	2.56 x	2.45 x	1.79 x	1.65 x	1.58 x
Existing DSC Methodology (Senior+Subordinate)	1.85 x	2.45 x	1.79 x	1.65 x	1.58 x
Bond Covenant DSC	2.62 x	3.28 x	2.65 x	2.53 x	1.98 x
Debt Service Coverage Requirements					
Existing Ratemaking DSC Target	1.75 x	1.75 x	1.75 x	1.75 x	1.75 x
Minimum Bond Covenant Requirement (Senior Bond)	1.30 x	1.30 x	1.30 x	1.30 x	1.30 x
Minimum Bond Covenant Requirement (Subordinate Bonc	1.20 x	1.20 x	1.20 x	1.20 x	1.20 x

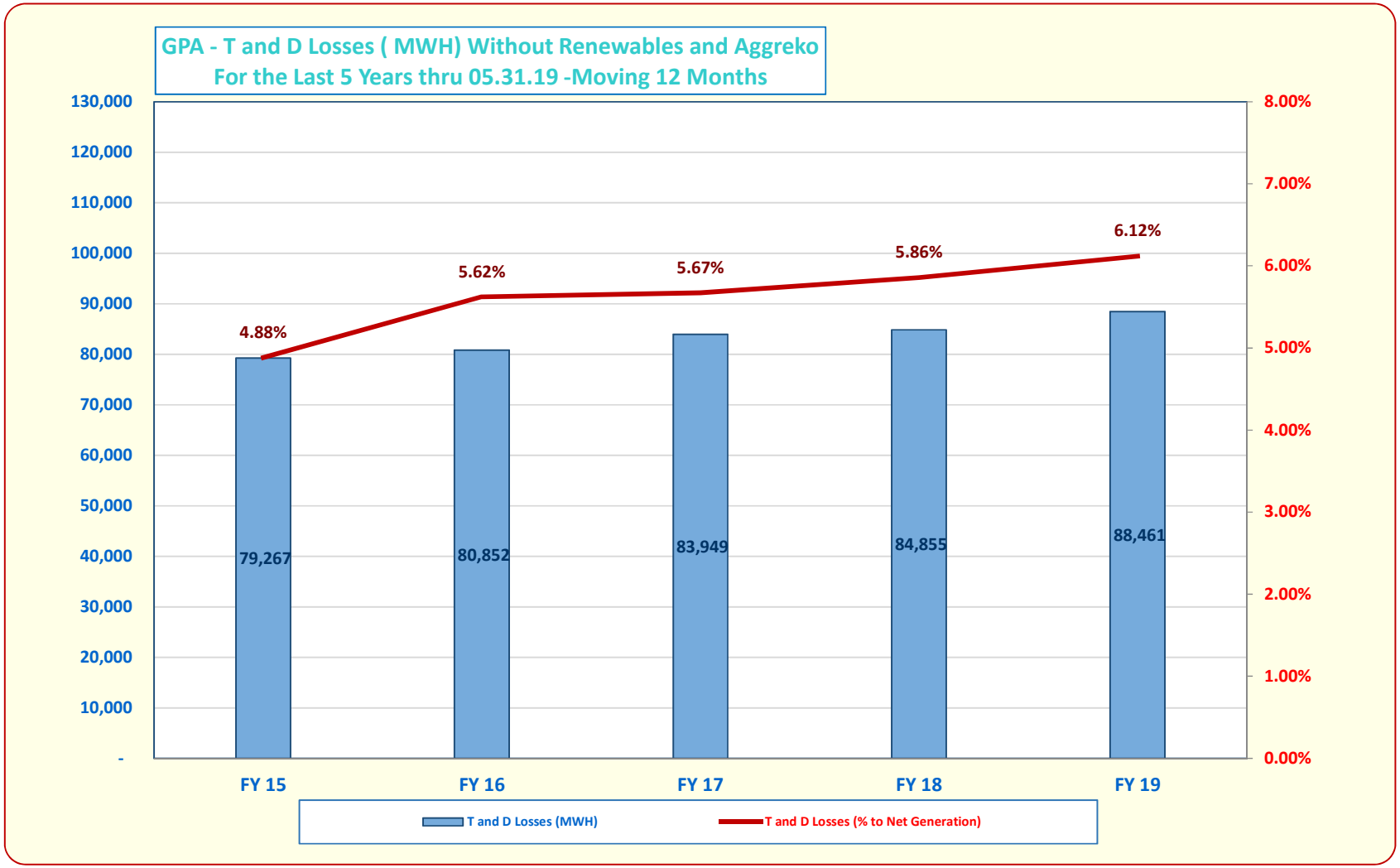
Notes:
(1) Source: Guam Power Authority, 2014 - 2017 Audited Financial Statements
(2) Interest income is net of interest earnings in the Construction Fund and the amortization of deferred credit.
(3) Existing DSC Methodology (Rating Agency Method):
(Operating Earnings + Depreciation Expense - IPP Principal & Interest Payments)/
(Senior and Subordinate Bond Principal & Interest Payments)
(4) Bond Covenant DSC Methodology: (Operating Earnings + Depreciation Expense)/
(Senior and Subordinate Bond Principal & Interest Payments)

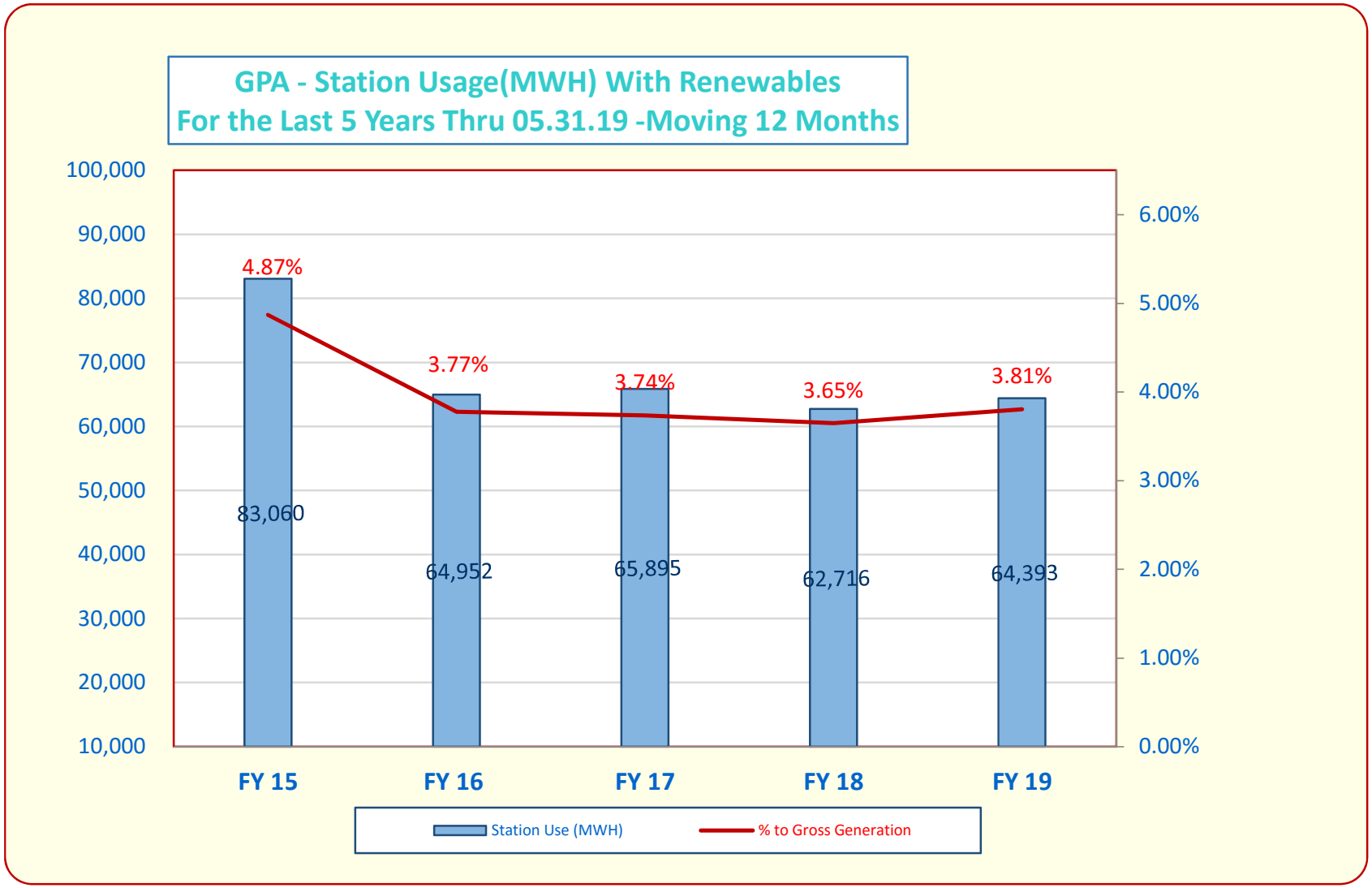
REVENUES-ACTUAL VS PROJECTIONS

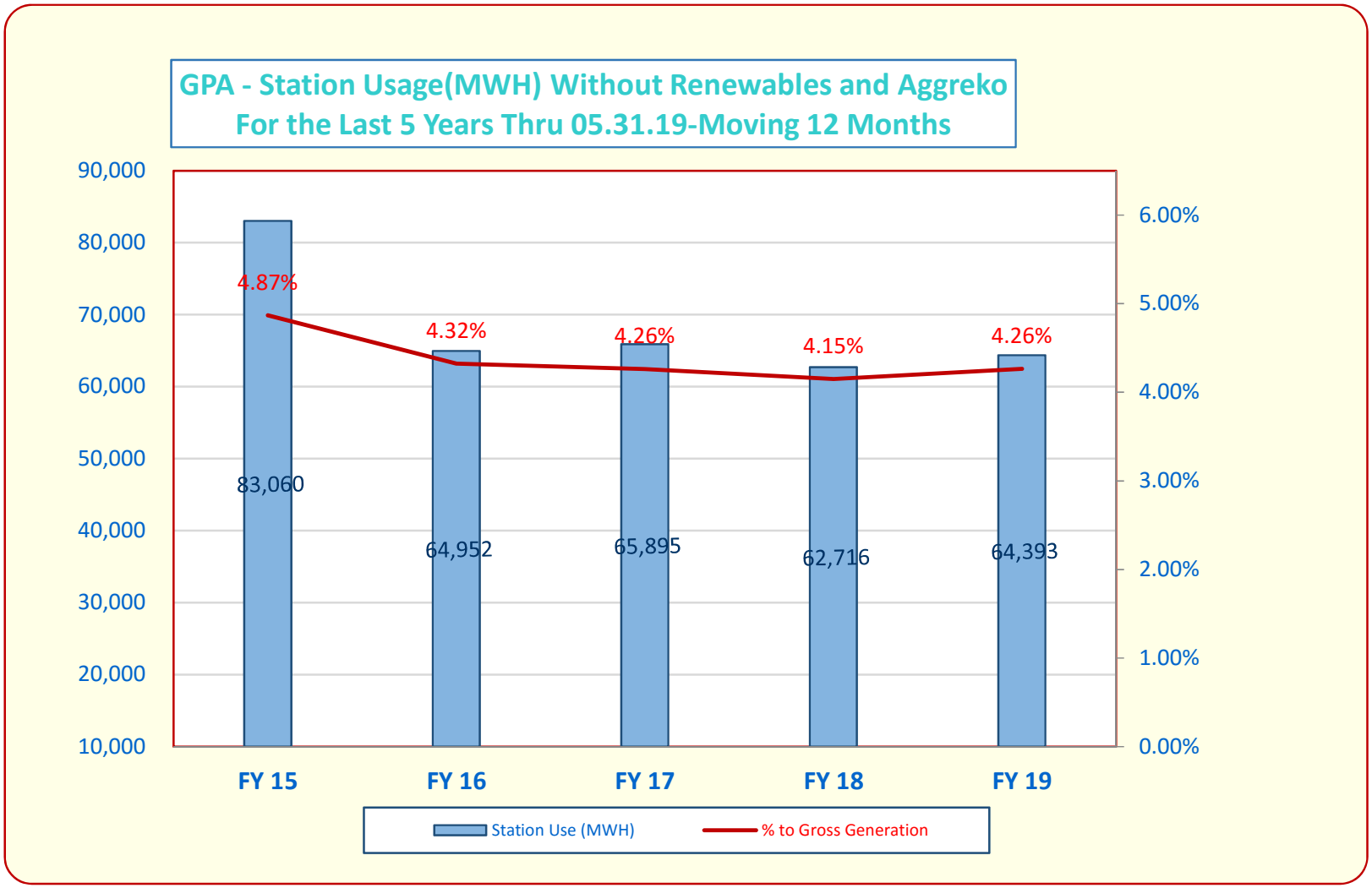
	MONTHLY - MAY 2019				YTD THRU 05/31/19			
	PROJECTIONS	ACTUAL	VARIANCE	% VARIANCE	PROJECTIONS	ACTUAL	VARIANCE	% VARIANCE
KWH								
Residential	47,815,445	45,901,332	(1,914,114)	-4.00%	335,760,203	323,106,661	(12,653,542)	-3.77%
Small General-Non-Demand	7,524,793	6,785,836	(738,958)	-9.82%	56,009,290	52,447,689	(3,561,601)	-6.36%
Small General-Demand	16,084,954	16,473,837	388,882	2.42%	122,835,466	121,729,655	(1,105,811)	-0.90%
Large	27,534,905	25,831,230	(1,703,676)	-6.19%	211,080,297	199,110,602	(11,969,694)	-5.67%
Independent Power Producers	48,112	31,329	(16,783)	-34.88%	368,820	250,760	(118,060)	-32.01%
Private St. Lites	26,929	33,473	6,544	24.30%	262,027	262,764	737	0.28%
Sub-total	**99,035,139**	**95,057,036**	**(3,978,103)**	**-4.02%**	**726,316,103**	**696,908,132**	**(29,407,971)**	**-4.05%**
Government								
Small_Non Demand	1,294,474	1,265,906	(28,568)	-2.21%	9,379,539	9,287,022	(92,517)	-0.99%
Small-Demand	8,444,582	8,650,402	205,820	2.44%	64,360,072	63,726,952	(633,120)	-0.98%
Large	6,844,855	6,344,614	(500,241)	-7.31%	50,602,152	47,742,351	(2,859,801)	-5.65%
Public St. Lites	706,263	838,818	132,556	18.77%	5,911,584	5,983,567	71,982	1.22%
Sub-total	**17,290,173**	**17,099,740**	**(190,433)**	**-1.10%**	**130,253,347**	**126,739,891**	**(3,513,456)**	**-2.70%**
Total-Civilian	**116,325,312**	**112,156,776**	**(4,168,536)**	**-3.58%**	**856,569,450**	**823,648,023**	**(32,921,427)**	**-3.84%**
USN	26,910,442	28,255,054	1,344,612	5.00%	205,804,564	206,294,381	489,816	0.24%
Grand Total	**143,235,755**	**140,411,830**	**(2,823,925)**	**-1.97%**	**1,062,374,015**	**1,029,942,404**	**(32,431,611)**	**-3.05%**
					-	-		
Non-Oil Yield								
Residential	0.096102	0.095359	(0.000743)	-0.77%	0.096102	0.096513	0.000411	0.43%
Small General-Non-Demand	0.136352	0.132132	(0.004220)	-3.10%	0.136352	0.138193	0.001841	1.35%
Small General-Demand	0.119289	0.115513	(0.003776)	-3.17%	0.119289	0.120478	0.001189	1.00%
Large	0.103671	0.102612	(0.001059)	-1.02%	0.103671	0.104166	0.000495	0.48%
Independent Power Producers	0.120485	0.125637	0.005152	0.00%	0.120485	0.130991	0.010506	0.00%
Private St. Lites	0.568458	0.612647	0.044189	7.77%	0.568458	0.631410	0.062952	11.07%
Sub-total	**0.105171**	**0.103640**	**(0.001531)**	**-1.46%**	**0.105510**	**0.106237**	**0.000727**	**0.69%**
Government					-			
Small_Non Demand	0.150024	0.148771	(0.001253)	-0.84%	0.150024	0.150076	0.000052	0.03%
Small-Demand	0.134359	0.130748	(0.003611)	-2.69%	0.134359	0.132903	(0.001456)	-1.08%
Large	0.126658	0.122395	(0.004263)	-3.37%	0.126658	0.124553	(0.002105)	-1.66%
Public St. Lites	0.482817	0.439408	(0.043409)	-8.99%	0.482817	0.494286	0.011469	2.38%
Sub-total	**0.146717**	**0.144124**	**(0.002593)**	**-1.77%**	**0.148310**	**0.148078**	**(0.000233)**	**-0.16%**
Total-Civilian	**0.175911**	**0.109812**	**(0.066099)**	**-37.58%**	**0.165044**	**0.112675**	**(0.052369)**	**-31.73%**
USN	0.062350	0.061610	(0.000740)	-1.19%	0.062350	0.065267	0.002917	4.68%
Grand Total	**0.102141**	**0.100113**	**(0.002028)**	**-1.99%**	**0.102396**	**0.103179**	**0.000783**	**0.76%**
Non-Oil Revenues								
Residential	4,595,160	4,377,096	(218,064)	-4.75%	32,267,227	31,184,072	(1,083,155)	-3.36%
Small General-Non-Demand	1,026,021	896,623	(129,398)	-12.61%	7,636,979	7,247,907	(389,072)	-5.09%
Small General-Demand	1,918,758	1,902,944	(15,814)	-0.82%	14,652,920	14,665,716	12,796	0.09%
Large	2,854,571	2,650,598	(203,973)	-7.15%	21,882,905	20,740,637	(1,142,269)	-5.22%
Independent Power Producers	5,797	3,936	(1,861)	-32.10%	44,437	32,847	(11,590)	-26.08%
Private St. Lites	15,308	20,507	5,199	33.96%	148,951	165,912	16,961	11.39%
Sub-total	**10,415,615**	**9,851,705**	**(563,910)**	**-5.41%**	**76,633,420**	**74,037,091**	**(2,596,329)**	**-3.39%**
Government								
Small_Non Demand	194,202	188,330	(5,873)	-3.02%	1,407,156	1,393,763	(13,393)	-0.95%
Small-Demand	1,134,606	1,131,025	(3,580)	-0.32%	8,647,355	8,469,507	(177,848)	-2.06%
Large	866,956	776,546	(90,409)	-10.43%	6,409,167	5,946,475	(462,692)	-7.22%
Public St. Lites	340,996	368,584	27,588	8.09%	2,854,213	2,957,592	103,379	3.62%
Sub-total	**2,536,759**	**2,464,485**	**(72,274)**	**-2.85%**	**19,317,892**	**18,767,337**	**(550,554)**	**-2.85%**
Total-Civilian	**12,952,374**	**12,316,190**	**(636,184)**	**-4.91%**	**95,951,311**	**92,804,428**	**(3,146,883)**	**-3.28%**
USN	1,677,866	1,740,797	62,931	3.75%	12,831,915	13,464,235	632,321	4.93%
Grand Total	**14,630,240**	**14,056,987**	**(573,253)**	**-3.92%**	**108,783,226**	**106,268,664**	**(2,514,562)**	**-2.31%**
% of Total Revenues	36.73%	40.43%			38.29%	40.43%		
Oil Revenues								
Residential	8,411,281	7,079,913	(1,331,367)	-15.83%	55,450,145	49,836,618	(5,613,528)	-10.12%
Small General-Non-Demand	1,323,697	1,046,661	(277,036)	-20.93%	9,248,457	8,089,636	(1,158,821)	-12.53%
Small General-Demand	2,829,526	2,539,764	(289,762)	-10.24%	20,268,031	18,767,604	(1,500,427)	-7.40%
Large	4,843,703	3,965,246	(878,457)	-18.14%	34,812,910	30,566,827	(4,246,083)	-12.20%
Independent Power Producers	8,463	4,664	(3,800)	-44.89%	60,829	37,318	(23,510)	-38.65%
Private St. Lites	4,737	5,163	426	8.99%	42,838	40,529	(2,309)	-5.39%
Sub-total	**17,421,407**	**14,641,410**	**(2,779,997)**	**-15.96%**	**119,883,211**	**107,338,533**	**(12,544,678)**	**-10.46%**
Government								
Small_Non Demand	227,713	195,256	(32,457)	-14.25%	1,547,892	1,432,449	(115,443)	-7.46%
Small-Demand	1,485,498	1,334,255	(151,243)	-10.18%	10,614,317	9,829,373	(784,944)	-7.40%
Large	1,204,088	967,064	(237,024)	-19.68%	8,354,166	7,275,540	(1,078,626)	-12.91%
Public St. Lites	124,240	129,381	5,141	4.14%	971,901	922,917	(48,984)	-5.04%
Sub-total	**3,041,538**	**2,625,956**	**(415,582)**	**-13.66%**	**21,488,275**	**19,460,278**	**(2,027,997)**	**-9.44%**
Total-Civilian	**20,462,945**	**17,267,367**	**(3,195,579)**	**-15.62%**	**141,371,486**	**126,798,812**	**(14,572,674)**	**-10.31%**
USN	4,733,853	3,443,178	(1,290,675)	-27.26%	33,953,638	29,790,295	(4,163,343)	-12.26%
Grand Total	**25,196,798**	**20,710,544**	**(4,486,254)**	**-17.80%**	**175,325,124**	**156,589,106**	**(18,736,017)**	**-10.69%**
% of Total Revenues	63.27%	59.57%			61.71%	59.57%		
Grand Total								
Residential	13,006,441	11,457,009	(1,549,431)	-11.91%	87,717,372	81,020,690	(6,696,682)	-7.63%
Small General-Non-Demand	2,349,717	1,943,284	(406,433)	-17.30%	16,885,436	15,337,544	(1,547,892)	-9.17%
Small General-Demand	4,748,285	4,442,708	(305,576)	-6.44%	34,920,951	33,433,320	(1,487,632)	-4.26%
Large	7,698,274	6,615,844	(1,082,430)	-14.06%	56,695,816	51,307,464	(5,388,352)	-9.50%
Independent Power Producers	14,260	8,600	(5,660)	-39.69%	105,266	70,166	(35,100)	-33.34%
Private St. Lites	20,045	25,670	5,625	28.06%	191,789	206,441	14,652	7.64%
Sub-total	**27,837,022**	**24,493,115**	**(3,343,907)**	**-12.01%**	**196,516,630**	**181,375,624**	**(15,141,006)**	**-7.70%**
Government					-			
Small_Non Demand	421,915	383,585	(38,329)	-9.08%	2,955,048	2,826,212	(128,836)	-4.36%
Small-Demand	2,620,104	2,465,281	(154,823)	-5.91%	19,261,671	18,298,879	(962,792)	-5.00%
Large	2,071,043	1,743,611	(327,433)	-15.81%	14,763,333	13,222,015	(1,541,318)	-10.44%
Public St. Lites	465,235	497,965	32,730	7.04%	3,826,115	3,880,510	54,395	1.42%
Sub-total	**5,578,297**	**5,090,441**	**(487,856)**	**-8.75%**	**40,806,167**	**38,227,616**	**(2,578,551)**	**-6.32%**
Total-Civilian	**33,415,319**	**29,583,556**	**(3,831,762)**	**-11.47%**	**237,322,797**	**219,603,240**	**(17,719,557)**	**-7.47%**
USN	6,411,719	5,183,974	(1,227,744)	-19.15%	46,785,553	43,254,530	(3,531,022)	-7.55%
Grand Total	**39,827,038**	**34,767,531**	**(5,059,507)**	**-12.70%**	**284,108,350**	**262,857,770**	**(21,250,580)**	**-7.48%**
	-	-	-					

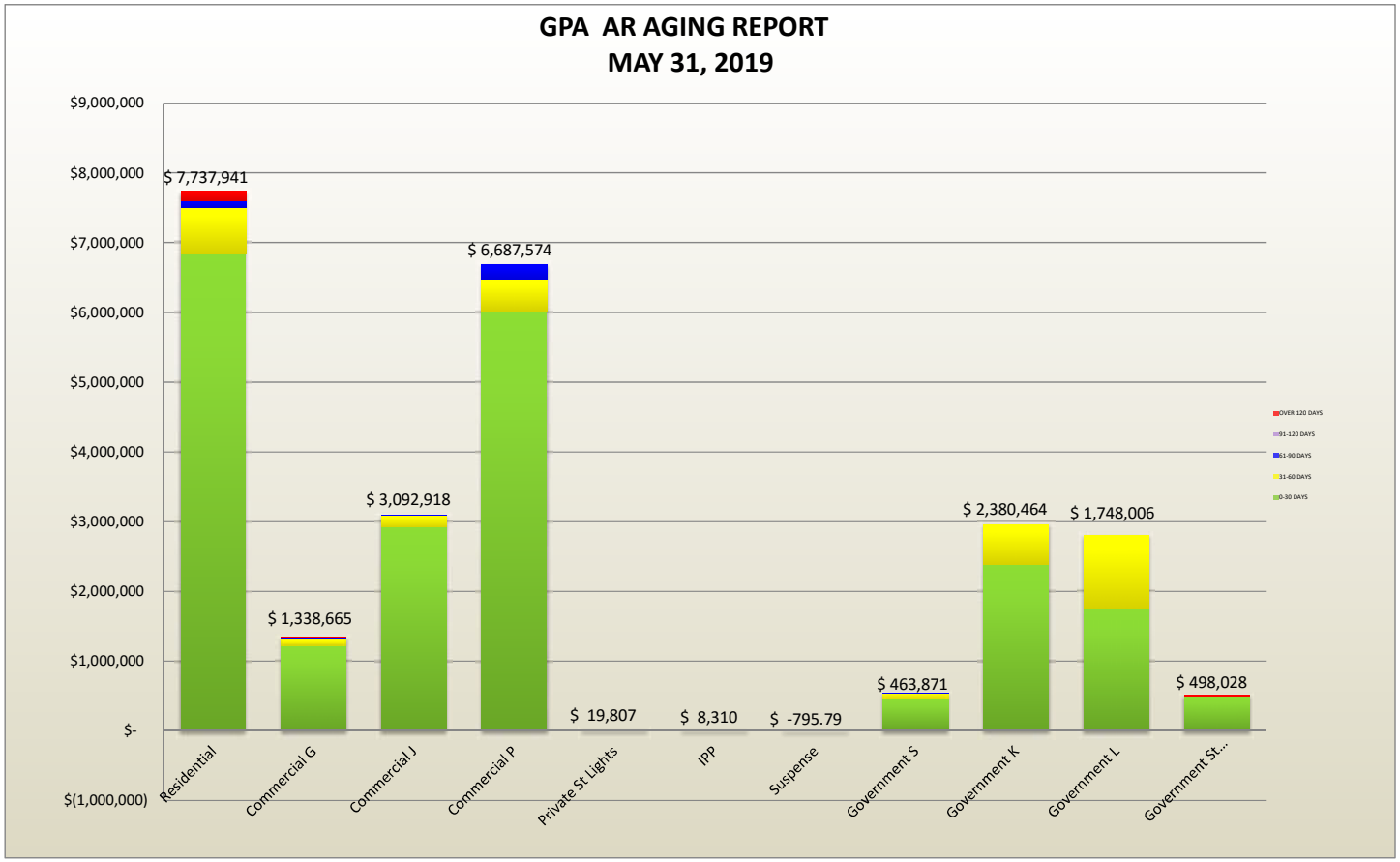
	YTD REVENUES - CURRENT YEAR VS PRIOR YEAR				MTD REVENUES - CURRENT YEAR VS PRIOR YEAR			
	ACTUALS - 8 MONTHS ENDED MAY 31				ACTUALS - MONTH ENDED MAY 31			
	2019	2018	VARIANCE	% VARIANCE	2019	2018	VARIANCE	% VARIANCE
KWH								
Residential	323,106,661	334,973,180	(11,866,519)	-3.54%	45,901,332	44,782,019	1,119,313	2.50%
Small General-Non-Demand	52,447,689	54,969,964	(2,522,275)	-4.59%	6,785,836	7,216,684	(430,848)	-5.97%
Small General-Demand	121,729,655	124,781,697	(3,052,042)	-2.45%	16,473,837	16,316,998	156,839	0.96%
Large	199,110,602	208,467,322	(9,356,719)	-4.49%	25,831,230	26,377,222	(545,992)	-2.07%
Independent Power Producers	250,760	364,430	(113,669)	-31.19%	31,329	26,295	5,034	19.14%
Private St. Lites	262,764	263,236	(472)	-0.18%	33,473	34,126	(654)	-1.92%
Sub-total	**696,908,132**	**723,819,828**	**(26,911,696)**	**-3.72%**	**95,057,036**	**94,753,344**	**303,692**	**0.32%**
Government								
Small_Non Demand	9,287,022	9,745,582	(458,560)	-4.71%	1,265,906	1,224,286	41,620	3.40%
Small-Demand	63,726,952	63,634,757	92,195	0.14%	8,650,402	8,098,401	552,001	6.82%
Large	47,742,351	50,993,697	(3,251,346)	-6.38%	6,344,614	6,622,597	(277,983)	-4.20%
Public St. Lites	5,983,567	5,770,092	213,474	3.70%	838,818	761,901	76,917	10.10%
Sub-total	**126,739,891**	**130,144,128**	**(3,404,237)**	**-2.62%**	**17,099,740**	**16,707,185**	**392,555**	**2.35%**
Total-Civilian	**823,648,023**	**853,963,956**	**(30,315,933)**	**-3.55%**	**112,156,776**	**111,460,529**	**696,246**	**0.62%**
USN	206,294,381	208,396,216	(2,101,835)	-1.01%	28,255,054	26,624,376	1,630,678	6.12%
Grand Total	**1,029,942,404**	**1,062,360,172**	**(32,417,768)**	**-3.05%**	**140,411,830**	**138,084,906**	**2,326,924**	**1.69%**
Non-Oil Yield								
Residential	0.096513	0.096264	0.000250	0.26%	0.095359	0.096207	-0.000848	-0.88%
Small General-Non-Demand	0.138193	0.136864	0.001329	0.97%	0.132132	0.137053	-0.004922	-3.59%
Small General-Demand	0.120478	0.119962	0.000516	0.43%	0.115513	0.119560	-0.004047	-3.38%
Large	0.104166	0.103509	0.000658	0.64%	0.102612	0.103537	-0.000925	-0.89%
Independent Power Producers	0.130991	0.109135	0.021856	20.03%	0.125637	0.119682	0.005954	4.98%
Private St. Lites	0.631410	0.636841	-0.005431	-0.85%	0.612647	0.630365	-0.017718	-2.81%
Sub-total	**0.106237**	**0.105722**	**0.000514**	**0.49%**	**0.103640**	**0.105579**	**-0.001939**	**-1.84%**
Government								
Small_Non Demand	0.150076	0.150014	0.000062	0.04%	0.148771	0.150180	-0.001410	-0.94%
Small-Demand	0.132903	0.133814	-0.000911	-0.68%	0.130748	0.132608	-0.001859	-1.40%
Large	0.124553	0.126643	-0.002090	-1.65%	0.122395	0.125484	-0.003089	-2.46%
Public St. Lites	0.494286	0.479314	0.014972	3.12%	0.439408	0.472181	-0.032772	-6.94%
Sub-total	**0.148078**	**0.147536**	**0.000542**	**0.37%**	**0.144124**	**0.146557**	**-0.002433**	**-1.66%**
Total-Civilian	**0.112675**	**0.112094**	**0.000580**	**0.52%**	**0.109812**	**0.111721**	**-0.001909**	**-1.71%**
USN	0.065267	0.061825	0.003442	5.57%	0.061610	0.058553	0.003057	5.22%
Grand Total	**0.103179**	**0.102234**	**0.000946**	**0.93%**	**0.100113**	**0.101470**	**-0.001357**	**-1.34%**
Non-Oil Revenues								
Residential	31,184,072	32,245,704	(1,061,632)	-3.29%	4,377,096	4,308,342	68,754	1.60%
Small General-Non-Demand	7,247,907	7,523,396	(275,489)	-3.66%	896,623	989,072	(92,449)	-9.35%
Small General-Demand	14,665,716	14,969,052	(303,337)	-2.03%	1,902,944	1,950,862	(47,918)	-2.46%
Large	20,740,637	21,578,149	(837,512)	-3.88%	2,650,598	2,731,023	(80,425)	-2.94%
Independent Power Producers	32,847	39,772	(6,925)	-17.41%	3,936	3,147	789	25.07%
Private St. Lites	165,912	167,639	(1,728)	-1.03%	20,507	21,512	(1,005)	-4.67%
Sub-total	**74,037,091**	**76,523,713**	**(2,486,622)**	**-3.25%**	**9,851,705**	**10,003,958**	**(152,253)**	**-1.52%**
Government								
Small_Non Demand	1,393,763	1,461,976	(68,213)	-4.67%	188,330	183,864	4,466	2.43%
Small-Demand	8,469,507	8,515,236	(45,729)	-0.54%	1,131,025	1,073,911	57,114	5.32%
Large	5,946,475	6,458,002	(511,527)	-7.92%	776,546	831,027	(54,481)	-6.56%
Public St. Lites	2,957,592	2,765,683	191,909	6.94%	368,584	359,755	8,829	2.45%
Sub-total	**18,767,337**	**19,200,897**	**(433,560)**	**-2.26%**	**2,464,485**	**2,448,557**	**15,928**	**0.65%**
Total-Civilian	**92,804,428**	**95,724,611**	**(2,920,182)**	**-3.05%**	**12,316,190**	**12,452,514**	**(136,324)**	**-1.09%**
USN	13,464,235	12,884,194	580,041	4.50%	1,740,797	1,558,948	181,849	11.66%
Grand Total	**106,268,664**	**108,608,805**	**(2,340,141)**	**-2.15%**	**14,056,987**	**14,011,462**	**45,524**	**0.32%**
% of Total Revenues								
Oil Revenues								
Residential	49,836,618	45,402,791	4,433,827	9.77%	7,079,913	7,063,156	16,757	0.24%
Small General-Non-Demand	8,089,636	7,454,753	634,884	8.52%	1,046,661	1,138,492	(91,831)	-8.07%
Small General-Demand	18,767,604	16,867,490	1,900,114	11.26%	2,539,764	2,562,926	(23,161)	-0.90%
Large	30,566,827	27,698,300	2,868,527	10.36%	3,965,246	4,067,932	(102,686)	-2.52%
Independent Power Producers	37,318	44,803	(7,484)	-16.70%	4,664	3,921	743	18.96%
Private St. Lites	40,529	34,974	5,555	15.88%	5,163	5,264	(101)	-1.92%
Sub-total	**107,338,533**	**97,503,110**	**9,835,423**	**10.09%**	**14,641,410**	**14,841,690**	**(200,279)**	**-1.35%**
Government								
Small_Non Demand	1,432,449	1,295,239	137,210	10.59%	195,256	188,843	6,412	3.40%
Small-Demand	9,829,373	8,465,981	1,363,392	16.10%	1,334,255	1,249,114	85,142	6.82%
Large	7,275,540	6,703,571	571,969	8.53%	967,064	1,009,770	(42,706)	-4.23%
Public St. Lites	922,917	769,500	153,417	19.94%	129,381	117,517	11,864	10.10%
Sub-total	**19,460,278**	**17,234,291**	**2,225,987**	**12.92%**	**2,625,956**	**2,565,244**	**60,712**	**2.37%**
Total-Civilian	**126,798,812**	**114,737,401**	**12,061,410**	**10.51%**	**17,267,367**	**17,406,934**	**(139,567)**	**-0.80%**
USN	29,790,295	25,884,881	3,905,414	15.09%	3,443,178	3,446,607	(3,429)	-0.10%
Grand Total	**156,589,106**	**140,622,282**	**15,966,824**	**11.35%**	**20,710,544**	**20,853,541**	**(142,996)**	**-0.69%**
% of Total Revenues								
Grand Total								
Residential	81,020,690	77,648,495	3,372,195	4.34%	11,457,009	11,371,498	85,511	0.75%
Small General-Non-Demand	15,337,544	14,978,149	359,395	2.40%	1,943,284	2,127,563	(184,279)	-8.66%
Small General-Demand	33,433,320	31,836,542	1,596,778	5.02%	4,442,708	4,513,787	(71,079)	-1.57%
Large	51,307,464	49,276,449	2,031,015	4.12%	6,615,844	6,798,955	(183,111)	-2.69%
Independent Power Producers	70,166	84,575	(14,409)	-17.04%	8,600	7,068	1,532	21.68%
Private St. Lites	206,441	202,614	3,828	1.89%	25,670	26,776	(1,106)	-4.13%
Sub-total	**181,375,624**	**174,026,823**	**7,348,801**	**4.22%**	**24,493,115**	**24,845,648**	**(352,532)**	**-1.42%**
Government								
Small_Non Demand	2,826,212	2,757,215	68,996	2.50%	383,585	372,707	10,878	2.92%
Small-Demand	18,298,879	16,981,217	1,317,662	7.76%	2,465,281	2,323,025	142,256	6.12%
Large	13,222,015	13,161,573	60,442	0.46%	1,743,611	1,840,797	(97,187)	-5.28%
Public St. Lites	3,880,510	3,535,184	345,326	9.77%	497,965	477,272	20,693	4.34%
Sub-total	**38,227,616**	**36,435,189**	**1,792,427**	**4.92%**	**5,090,441**	**5,013,801**	**76,640**	**1.53%**
Total-Civilian	**219,603,240**	**210,462,012**	**9,141,228**	**4.34%**	**29,583,556**	**29,859,448**	**(275,892)**	**-0.92%**
USN	43,254,530	38,769,075	4,485,455	11.57%	5,183,974	5,005,555	178,420	3.56%
Grand Total	**262,857,770**	**249,231,087**	**13,626,683**	**5.47%**	**34,767,531**	**34,865,003**	**(97,472)**	**-0.28%**


GPA - T and D Losses (MWH) With Renewables
For the Last 5 Years thru 05.31.19 -Moving 12 Months
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
4.88%
4.88%
4.95%
5.12%
5.44%
79,267
80,852
83,949
84,855
88,461
FY 15
FY 16
FY 17
FY 18
FY 19
T and D Losses (MWH)
T and D Losses (% to Net Gen.)


GPA - T and D Losses (MWH) Without Renewables and Aggreko
For the Last 5 Years thru 05.31.19 -Moving 12 Months
130,000
120,000
110,000
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
-
8.00%
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
4.88%
5.62%
5.67%
5.86%
6.12%
79,267
80,852
83,949
84,855
88,461
FY 15
FY 16
FY 17
FY 18
FY 19
T and D Losses (MWH)
T and D Losses (% to Net Generation)


GPA - Station Usage(MWH) With Renewables
For the Last 5 Years Thru 05.31.19 -Moving 12 Months
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
4.87%
3.77%
3.74%
3.65%
3.81%
83,060
64,952
65,895
62,716
64,393
FY 15
FY 16
FY 17
FY 18
FY 19
Station Use (MWH)
% to Gross Generation


GPA - Station Usage(MWH) Without Renewables and Aggreko
For the Last 5 Years Thru 05.31.19-Moving 12 Months
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
4.87%
4.32%
4.26%
4.15%
4.26%
83,060
64,952
65,895
62,716
64,393
FY 15
FY 16
FY 17
FY 18
FY 19
Station Use (MWH)
% to Gross Generation


GPA AR AGING REPORT
MAY 31, 2019
$9,000,000
$8,000,000
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$-
$(1,000,000)
$ 7,737,941
$ 1,338,665
$ 3,092,918
$ 6,687,574
$ 19,807
$ 8,310
$ -795.79
$ 463,871
$ 2,380,464
$ 1,748,006
$ 498,028
Residential
Commercial G
Commercial J
Commercial P
Private St Lights
IPP
Suspense
Government S
Government K
Government L
Government St...
OVER 120 DAYS
91-120 DAYS
61-90 DAYS
31-60 DAYS
0-30 DAYS

GUAM POWER AUTHORITY
GOVERNMENT ACCOUNTS RECEIVABLE
Billing As of 06/30/2019 and Payments as of 07/10/2019

Current (06/19 Billing due 07/31/19)
30 days Arrears (5/31/19 due 06/30/19)
60 days and over Arrears (04/19 billing due 3/31/19)

CC&B ACCT NUMBER	CC&B New Acct Numer	DEPARTMENT	BALANCE 05/31/2019	CANCEL/REBILL/ SPEC CHARGE July 10, 2019	BILLING 06/30/2019	PAYMENT July 10, 2019	BALANCE 07/10/2019
		Line Agencies					
0237100000	1073430238	Dept. of Corrections	88,255.45		84,268.29	(88,255.45)	84,268.29
0437100000	0040515913	Dept. of Parks & Rec.	22,086.24	143.80	21,648.05		43,878.09
0537100000	0453170939	Guam Fire Department	16,976.45	310.47	16,647.40	(17,030.51)	16,903.81
6995000000	8564647941	DOA Supply Mgmt (NET METERED)	1,339.70		1,676.44	(1,339.70)	1,676.44
7895000000	4211873236	Dept. of Administration	4,636.41		4,426.26	(4,636.41)	4,426.26
1337100000	4554808900	Nieves Flores Library	10,756.29		10,910.32	(10,756.29)	10,910.32
2206200000	9541109130	General Services Agency	270.02		257.29	(270.02)	257.29
2237100000	1621790133	DOA-Data Processing	9,414.97		8,874.99	(9,414.97)	8,874.99
2337100000	1896187753	Dept. of PH&SS	67,263.82	35.30	63,290.21	(67,263.82)	63,325.51
3237100000	7252821074	Dept. of Education	2,421,671.39	17,168.02	949,056.94	(1,191,118.78)	2,196,777.57
3337100000	0266069082	Guam Police Department	56,983.22		50,402.35	(56,983.22)	50,402.35
3569100000	6069461950	Dept of Youth Affairs (Federal)	916.73		768.93	(916.73)	768.93
4437100000	2913461537	Dept. of Youth Affair* (Local)	11,796.77		12,369.74	(11,796.77)	12,369.74
4737100000	3404311949	Guam Environmental Protect	7,244.84	54.33	6,865.53	(7,244.84)	6,919.86
5437100000	3227759982	Mental Health/Subst.	44,352.97	(12.03)	46,028.33	(44,340.94)	46,028.33
7200300000	0070861777	Veteran Affairs	1,174.05	8.81	1,083.52		2,266.38
	6243861917	GUAM VETERAN AFFAIRS OFFICE	-	32.79	2,561.96		2,594.75
7437100000	8300435373	Civil Defense (Military Affairs)	11,863.38	88.98	11,211.03		23,163.39
7463300000	7813165805	Pacific Energy Resource Center	749.83		650.24	(749.83)	650.24
8137100000	1595188609	Dept. of Agriculture	10,672.85		9,925.98	(10,672.85)	9,925.98
8337100000	2535590089	DPW-FAC Adm Account	30,957.44		30,677.38	(30,957.44)	30,677.38
8437100000	7928924534	Guam Visitors Bureau	4,766.43		4,541.76	(4,766.43)	4,541.76
8446300000	7663706771	Yona Senior Citizen Center	1,082.72		1,039.32	(1,082.72)	1,039.32
9437100000	4129948191	Dept of Chamorro Affairs/Chamorro Village	4,441.27	529.72	3,802.79	(4,441.27)	4,332.51
5247210000	5247210000	Mayors Council	3,129.81		8,524.65	(3,129.81)	8,524.65
6293410000	6293410000	Office of the Governor	29,567.43		26,971.54	(29,567.43)	26,971.54
8555858369	8555858369	Dept of Chamorro Affairs (Guam Museum)	24,373.25		23,416.73	(24,373.25)	23,416.73
	1099514147	Dept of Chamorro Affairs/Repository	405.75		292.78	(405.75)	292.78
	3558733700	Dept of Chamorro Affairs/Chamorro Village	-		455.92	-	455.92
		Sub Total	**2,887,149.48**	**18,360.19**	**1,402,646.67**	**(1,621,515.23)**	**2,686,641.11**
		MAYORS					
0637100000	3832327736	Santa Rita Mayor	3,649.69		3,298.17	(3,649.69)	3,298.17
0737100000	9351070242	Ordot/Chalan Pago Mayor	1,426.35		1,435.46	(1,426.35)	1,435.46
1537100000	6393530237	Hagatna Mayor	2,002.76		1,708.07	(2,002.76)	1,708.07
1637100000	3293808984	Piti Mayor	1,196.70		1,284.24	(1,196.70)	1,284.24
1737100000	8715052935	Mongmong/Toto/Maite Mayor	1,642.72		1,645.25	(1,642.72)	1,645.25
2637100000	0492244686	Asan/Maina/Adelup Mayor	892.57		805.05	(892.57)	805.05
2737100000	8433959204	Sinajana Mayor	4,925.64		5,188.73	(4,925.64)	5,188.73
3637100000	8041715847	Dededo Mayor	7,026.23	33.16	6,689.27	(7,026.23)	6,722.43
4637100000	7037924246	Yigo Mayor	4,716.65		4,804.97	(4,716.65)	4,804.97
5637100000	7202265287	Umatac Mayor	1,491.33		1,412.08	(1,491.33)	1,412.08
6537100000	8472200165	Agana Hts. Mayor	5,148.39		4,046.23	(5,148.39)	4,046.23
6637100000	4469579998	Merizo Mayor	1,480.49		941.50	(1,480.49)	941.50
6737100000	5763167341	Barrigada Mayors Office	2,925.27		2,603.19	(2,925.27)	2,603.19
7537100000	7247791682	Agat Mayor	2,858.84	63.47	2,522.49	(2,858.84)	2,585.96
7637100000	6078244037	Inarajan Mayor	2,786.84		2,609.32	(2,786.84)	2,609.32
8537100000	6957205325	Tamuning Mayor	6,196.18		5,788.96	(6,196.18)	5,788.96
8637100000	1880297633	Talofofo Mayor	4,367.92	(1,296.44)	2,745.08	(4,367.92)	1,448.64
9537100000	3631627996	Mangilao Mayor	4,588.28		4,520.24	(4,588.28)	4,520.24
9637100000	1837525565	Yona Mayor	1,692.91		1,565.98	(1,692.91)	1,565.98
		Sub Total	**$ 61,015.76**	**$ (1,199.81)**	**$ 55,614.28**	**$ (61,015.76)**	**$ 54,414.47**
		DPW ACCOUNTS				-	
4337100000	3045433600	DPW-Village St. Lights	378,048.49		358,016.83	(378,048.49)	358,016.83
5337100000	0930959866	DPW- Primary St. Lights	88,059.85	660.38	83,219.15		171,939.38
6337100000	3088040552	DPW-Sec/Coll St. Lights	26,776.55	200.81	25,348.17		52,325.53
7337100000	0832698062	DPW-Signal Lights	10,421.97		9,606.91	(10,421.97)	9,606.91
		Sub Total	**$ 503,306.86**	**$ 861.19**	**$ 476,191.06**	**$ (388,470.46)**	**$ 591,888.65**
		(B) AUTONOMOUS/PUBLIC CORP					
1437100000	1540692986	Retirement Fund	7,040.45		6,849.67	(7,040.45)	6,849.67
1915500000	0563872892	Guam Housing Corp Rental Division	1,210.45	25.00	1,427.86	(1,210.45)	1,452.86
2437100000	5434075703	University of Guam	195,805.68	30.55	182,018.81	(195,836.23)	182,018.81
4237100000	7736362694	Guam Airport Authority	527,327.23		522,386.12	(527,327.23)	522,386.12
5357510000	5357510000	University of Guam (NET METERED)	83,651.31		77,083.89	(83,651.31)	77,083.89
6237100000	1699407298	G H U R A	15,528.78	8.65	25,780.53	(27,178.99)	14,138.97
6437100000	6518220019	Guam Community College	55,461.60		51,715.08	(55,461.60)	51,715.08
7237100000	8302337726	Guam Memorial Hospital	39,962.78		36,888.87	(39,962.78)	36,888.87
8426836906	8426836906	Guam Memorial Hospital (NET METERED)	146,839.39		140,804.18	(146,839.39)	140,804.18
9137100000	4474308144	Port Authority of Guam	103,779.44		95,255.31	(103,779.44)	95,255.31
9157510000	9157510000	Guam Community College (NET METERED)	39,269.08		35,509.64	(39,269.08)	35,509.64
9173210000	9173210000	Guam Solid Waste Authority	6,713.27		6,437.43	(6,713.27)	6,437.43
9337100000	0838495949	Guam Waterworks Authority	1,371,929.73	25.00	1,236,235.86	(1,372,147.86)	1,236,042.73
8237100000	4075914809	GPA	-		101,735.51	(101,735.51)	-
		Sub Total	**$ 2,594,519.19**	**$ 89.20**	**$ 2,520,128.76**	**$ (2,708,153.59)**	**$ 2,406,583.56**

		(C) OTHERS					
0337100000	7541928173	Guam Legislature	545.55	(4.46)	520.30	(545.55)	515.84
9503154359	9503154359	Guam Legislature (NET METERED)	8,551.36		8,187.21	(8,551.36)	8,187.21
1237100000	8353274954	Superior Court of Guam	67,681.43		64,211.36	(67,681.43)	64,211.36
2537100000	8108458168	Guam Post Office (Agana)	6,574.48		6,444.70	(6,574.48)	6,444.70
2570200000	8972267005	Customs & Quarantine Agency	724.90	5.44	729.04	(724.90)	734.48
3537100000	4530787043	U.S. Post Office	39,635.91		39,129.15	(39,635.91)	39,129.15
5537100000	8607446612	Dept. of Military Affairs	81,420.78	610.66	79,301.90	(81,420.78)	79,912.56
3209463043	3209463043	Dept. of Military Affairs (NET METERED)	16,508.55	123.81	15,353.79	(16,508.55)	15,477.60
5737100000	6000770566	KGTF	7,388.06	55.41	7,104.12	(7,388.06)	7,159.53
7281000000	6602566745	Tamuning Post Office	5,344.37		5,169.39	(5,344.37)	5,169.39
		Sub Total	**$ 234,375.39**	**$ 790.86**	**$ 226,150.96**	**$ (234,375.39)**	**$ 226,941.82**
		GRAND TOTAL	**$ 6,280,366.68**	**$ 18,901.63**	**$ 4,680,731.73**	**$ (5,013,530.43)**	**$ 5,966,469.61**

GUAM POWER AUTHORITY
ATURIDÅT ILEKTRESEDÅT GUAHAN
P.O.BOX 2977 • AGANA, GUAM U.S.A. 96932-2977

Issues for Decision

Resolution No. 2019-10:

RELATIVE TO AUTHORIZING THE MANAGEMENT OF THE GUAM POWER AUTHORITY TO PETITION THE PUBLIC UTILITIES COMMISSION TO AWARD THE CONTRACT FOR THE SUPPLY OF DIESEL FUEL OIL NO.2 FOR THE BASELOADS POWER PLANTS AND PEAKING UNITS

What is the project's objective? Is it necessary and urgent?

The Guam Power Authority's current contracts for Supply of Diesel Fuel Oil No.2 for the Baseload and Peaking Plants expire on December 31, 2019. The new fuel supply contracts are necessary to provide uninterrupted supply of fuel for the power plants.

Where is the location?

These contract service the Baseload and Peaking Power Plants which were split into four (4) specified delivery sites:

- **Site Location 1 (Yigo CT and Aggreko)**
- **Site Location 2 (Macheche CT and Dededo CT)**
- **Site Location 3 (Piti 7)**
- **Site Location 4 (Cabras 1&2, MEC 8&9, Manenggon Diesel Plant, and Talofofo Diesel Plant)**

How much will it cost?

The aggregate cost for the two-year contract base period with *Mobil Oil Guam for Sites 1, 3 & 4* is $113,384,400 (subject to change depending on prevailing market price for diesel) of which $12,254,800.00 is for the Fixed Service Fee cost.

The total cost for the two-year contract base period with *IP&E Holdings, LLC for Site 2* is estimated at $33,280,000 (subject to change depending on prevailing market price for diesel) of which $3,536,000.00 is for the Fixed Service Fee cost.

The aggregate *contract value* for all the site locations for the two-year contract base period is estimated at $146,664,400 (subject to change depending on prevailing market price for diesel) of which *$15,790,800.00 is for the Fixed Service Fee cost.*

When will it be completed?

Contract is a two-year base period with three one-year extension options.

What is its funding source?

LEAC

@BCL@D4107C22

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

RESOLUTION NO. 2019-10

AUTHORIZING THE MANAGEMENT OF THE GUAM POWER AUTHORITY TO PETITION THE PUBLIC UTILITIES COMMISSION TO AWARD THE CONTRACT FOR THE SUPPLY OF DIESEL FUEL OIL NO.2 FOR THE BASELOADS POWER PLANTS AND PEAKING UNITS

WHEREAS, Diesel Fuel Oil No.2 is used by GPA's baseload plants and peaking units for plant operations; and

WHEREAS, GPA's final extension of the current contract with Mobil Oil Guam, Inc. for the supply of Diesel Fuel Oil No.2 under GPA-029-14 will expire on December 31, 2019; and

WHEREAS, in anticipation of this expiration date, GPA was authorized by the CCU under Resolution No. 2017-33 and approved by the PUC under Docket 17-18 to issue bids for the procurement of a new Diesel Fuel Oil No.2 supply contract; and

WHEREAS, the Procurement Officer has provided adequate public announcement for the need for such supply services through Invitation for Bid No. GPA-008-18 describing the type of supply services required and specifying the type of information and data required of each offeror; and

WHEREAS, Mobil Oil Guam, Inc. ("Mobil") and Isla Petroleum and Energy ("IP&E") Holdings, LLC were the only qualified bidders that submitted price proposals for GPA consideration; and

WHEREAS, price proposals were evaluated for four (4) specified delivery sites: **Site Location 1** (*Yigo CT and Aggreko*)**, Site Location 2** (*Macheche CT and Dededo CT*)**, Site Location 3** (*Piti 7*)**, and Site Location 4** (*Cabras 1&2, MEC 8&9, Manenggon Diesel Plant, and Talofofo Diesel Plant***)**; and

WHEREAS, Mobil Oil Guam was determined to be the lowest, most responsive bidder meeting the requirements of the solicitation to provide diesel fuel oil for **Site Location 1** (*Yigo CT and Aggreko*) as

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provided for in **Exhibit A**. The Fixed Service Fee of $0.226/gal is approximately 7% lower than the current Fixed Service Fee of $0.242/gal. The estimated Fixed Service fee cost based on the estimated supply quantities has a value of approximately $3,842,000.00 for the first year and $3,842,000.00 for the second year for a total of $7,684,000.00 for the two-year contract base period. The estimated savings in Fixed Service Fee for the 2-year period is approximately $544,000.00; and

WHEREAS, IP&E Holdings, LLC was determined to be the lowest, most responsive bidder meeting the requirements of the solicitation to provide diesel fuel oil for **Site Location 2 (*Macheche CT and Dededo CT*)** as provided for in **Exhibit B**. The Fixed Service Fee of $0.221/gal is approximately 9% lower than the current Fixed Service Fee of $0.242/gal. The estimated Fixed Service fee cost based on the estimated supply quantities has a value of approximately $1,768,000.00 for the first year and $1,768,000.00 for the second year for a total of $3,536,000.00 for the two-year contract base period. The estimated savings in Fixed Service Fee for the 2-year period is approximately $336,000.00; and

WHEREAS, Mobil Oil Guam was determined to be the lowest, most responsive bidder meeting the requirements of the solicitation to provide diesel fuel oil for **Site Location 3** (*Piti 7*) as provided for in **Exhibit C**. The Fixed Service Fee of $0.215/gal is approximately 18% lower than the current Fixed Service Fee of $0.262/gal. The estimated Fixed Service fee cost based on the estimated supply quantities has a value of approximately $1,720,000.00 for the first year and $1,720,000.00 for the second year for a total of $3,440,000.00 for the two-year contract base period. The estimated savings in Fixed Service Fee for the 2-year period is approximately $752,000.00; and

WHEREAS, Mobil Oil Guam was determined to be the lowest, most responsive bidder meeting the requirements of the solicitation to provide diesel fuel oil for **Site Location 4** (*Cabras 1&2, MEC 8&9, Manenggon Diesel Plant, and Talofofo Diesel Plant*) as provided for in **Exhibit D**. The Fixed Service Fee of $0.257/gal is approximately 6% higher than the current Fixed Service Fee of $0.242/gal. The estimated Fixed Service fee cost based on the estimated supply quantities has a value of approximately $565,400.00 for the first year and $565,400.00 for the second year for a total of $1,130,800.00 for the two-year contract base period. *The estimated cost increase in Fixed Service Fee for the 2-year period is approximately $66,000.00;* and

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WHEREAS, the aggregate contract value for all the site locations for the two-year contract base period is estimated at **$146,664,400.00** (subject to change depending on prevailing market price for diesel) of which $*15,790,800.00* is for the Fixed Service Fee cost; and

WHEREAS, the *total savings* for the two-year contract base period for all the site locations is estimated at ***$1,566,000.00****;* and

WHEREAS, the Diesel Fuel Oil No.2 Supply Contract shall be for a period of two years to commence on January 1, 2020 and shall expire on December 31, 2021 with three one-year extension options renewable annually upon mutual agreement of both parties; and

NOW THEREFORE, BE IT RESOLVED, by the CONSOLIDATED COMMISSION ON UTILITIES subject to the review and approval of the Public Utilities Commission as follows:

1. The General Manager of the Guam Power Authority is hereby authorized to enter into a two-year contract with **Mobil Oil Guam, Inc.** for supply of Diesel Fuel Oil No.2 for **Site Location 1** (*Yigo CT and Aggreko*), **Site Location 3** (*Piti 7*) **and Site Location 4** (C*abras 1&2, MEC 8&9, Manenggon Diesel Plant, and Talofofo Diesel Plant*). The aggregate contract cost for the two-year contract base period with Mobil Oil Guam is estimated at **$113,384,400.00** of which $101,129,600.00 is for the direct fuel cost (subject to change depending on prevailing market price for diesel) and $12,254,800.00 is for the Fixed Service Fee cost.

2. The General Manager of the Guam Power Authority is hereby authorized to enter into a two-year contract with **IP&E Holdings, LLC** for supply of Diesel Fuel Oil No.2 for **Site Location 2** (*Macheche CT and Dededo CT*)**.** The total contract cost for the two-year contract base period with IP&E Holdings, LLC is estimated at **$33,280,000.00** of which $29,744,000.00 is for the direct fuel cost (subject to change depending on prevailing market price for diesel) and **$**3,536,000.00 is for the Fixed Service Fee cost.

3. The General Manager of the Guam Power Authority is hereby authorized an increase in obligating authority to the annual value of the services and execute such agreements and documents necessary for a contract with **Mobil Oil Guam, Inc.** and **IP&E Holdings, LLC**. The over-all contract cost for the two-year contract base period with **Mobil Oil Guam, Inc.** and

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IP&E Holdings, LLC is estimated at **$146,664,400.00** (subject to change depending on prevailing market price for diesel).

RESOLVED, that the Chairman of the Commission certifies and the Board Secretary of this Resolution.

DULY and REGULARY ADOPTED AND APPROVED THIS this 23rd DAY of July 2019

Certified by:	**Attested by:**
JOSEPH T. DUENAS Chairperson Consolidated Commission on Utilities	**MICHAEL LIMTIACO** Secretary Consolidated Commission on Utilities

I, Michael Limtiaco, Secretary for the Consolidated Commission on Utilities (CCU), as evidenced by my signature above do certify as follows:

The foregoing is a full, true, and correct copy of the resolution duly adopted at a regular meeting of the members of Guam Consolidated Commission on Utilities, duly and legally held at the meeting place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

Ayes: _____

Nays: _____

Absent: _____

Abstain: _____

@BCL@D4107C22

EXHIBIT A

SITE LOCATION 1: YIGO CT AND AGGREKO

Bidders Price Proposal	2-Year Base Period		3-Year Extension Option		
	1st Yr Fixed Service Fee $/gal	2nd Yr Fixed Service Fee $/gal	1st Yr Extn Fixed Service Fee $/gal	2nd Yr Extn Fixed Service Fee $/gal	3rd Yr Extn Fixed Service Fee $/gal
Mobil Oil Guam, Inc.	**$0.226**	**$0.226**	**$0.231**	**$0.235**	**$0.240**
IP&E Guam, LLC	**$0.282**	**$0.282**	**$0.282**	**$0.282**	**$0.282**

2-YEAR CONTRACT BASE PERIOD	Current Contract MOG	1st YEAR- CONTRACT BASE PERIOD		2nd YEAR- CONTRACT BASE PERIOD		2-YEAR CONTRACT BASE PERIOD	
		Bidder #1 (Mobil Oil Guam, Inc)	Bidder #2 (IP&E Holdings, LLC)	Bidder #1 (Mobil Oil Guam, Inc)	Bidder #2 (IP&E Holdings, LLC)	Bidder #1 (Mobil Oil Guam, Inc)	Bidder #2 (IP&E Holdings, LLC)
a. Estimated Quantity (gal/yr) [1]	17,000,000	17,000,000	17,000,000	17,000,000	17,000,000	34,000,000	34,000,000
b. Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
c. Bid Fixed Service Fee Cost ($/gal)	$0.242	$0.226	$0.282	$0.226	$0.282	$0.226	$0.282
d. Estimated Contract Price ($/gal)	$2.101	$2.085	$2.141	$2.085	$2.141	$2.085	$2.141
e. **Estimated Contract Cost, $/yr** (a x d)	**$ 35,717,000.00**	**$ 35,445,000.00**	**$ 36,397,000.00**	**$ 35,445,000.00**	**$ 36,397,000.00**	**$ 70,890,000.00**	**$ 72,794,000.00**
f. Fixed Service Fee Cost, $/yr (a x c)	$4,114,000.00	$3,842,000.00	$4,794,000.00	$3,842,000.00	$4,794,000.00	$7,684,000.00	$9,588,000.00
g. Variance w/ Current Contract		($272,000.00)	$680,000.00	($272,000.00)	$680,000.00	($544,000.00)	$1,360,000.00
		-7%	17%	-7%	17%		
		(Savings)	(Additonal Expense)	(Savings)	(Additonal Expense)	(Savings)	(Additonal Expense)
Ranking (1 as the Lowest Bidder)						**1**	**2**

Based on the analysis for the two (2) year contract base period, the lowest bidder is **Mobil Oil Guam, Inc**.

Notes:

[1] See Bid Package: Volume II- Schedule B for Estimated Quantities

[2] See Bid Package: Volume II- Section 5 for Sample Reference Price ($1.859/gal)

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EXHIBIT B

SITE LOCATION 2: MACHECHE CT & DEDEDO CT

Bidders Price Proposal	2-Year Base Period		3-Year Extension Option		
	1st Yr Fixed Service Fee $/gal	2nd Yr Fixed Service Fee $/gal	1st Yr Extn Fixed Service Fee $/gal	2nd Yr Extn Fixed Service Fee $/gal	3rd Yr Extn Fixed Service Fee $/gal
Mobil Oil Guam, Inc.	**$0.260**	**$0.260**	**$0.265**	**$0.271**	**$0.276**
IP&E Guam, LLC	**$0.221**	**$0.221**	**$0.224**	**$0.227**	**$0.230**

2 year Base Contract	Current Contract IP&E	1st YEAR- CONTRACT BASE PERIOD		2nd YEAR- CONTRACT BASE PERIOD		2-YEAR CONTRACT BASE PERIOD	
		Bidder #1 (Mobil Oil Guam, Inc)	Bidder #2 (IP&E Holdings, LLC)	Bidder #1 (Mobil Oil Guam, Inc)	Bidder #2 (IP&E Holdings, LLC)	Bidder #1 (Mobil Oil Guam, Inc)	Bidder #2 (IP&E Holdings, LLC)
a. Estimated Quantity (gal/yr) [1]	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	16,000,000	16,000,000
b. Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
c. Bid Fixed Service Fee Cost ($/gal)	$0.242	$0.260	$0.221	$0.260	$0.221	$0.260	$0.221
d. Estimated Contract Price ($/gal)	$2.101	$2.119	$2.080	$2.119	$2.080	$2.119	$2.080
e. **Estimated Contract Cost, $/yr** (a x d)	**$ 16,808,000.00**	**$ 16,952,000.00**	**$ 16,640,000.00**	**$ 16,952,000.00**	**$ 16,640,000.00**	**$ 33,904,000.00**	**$ 33,280,000.00**
f. Fixed Service Fee Cost, $/yr (a x c)	$ 1,936,000.00	$2,080,000.00	$1,768,000.00	$2,080,000.00	$1,768,000.00	$4,160,000.00	$3,536,000.00
g. Variance w/ Current Contract		$144,000.00	($168,000.00)	$144,000.00	($168,000.00)	$288,000.00	($336,000.00)
		7%	-9%	7%	-9%		
		(Additonal Expense)	(Savings)	(Additonal Expense)	(Savings)	(Additonal Expense)	(Savings)
Ranking (1 as the Lowest Bidder)						**2**	**1**

Based on the analysis for the two (2) year contract base period, the lowest bidder is **IP&E Guam**.

Notes:

[1] See Bid Package: Volume II- Schedule B for Estimated Quantities

[2] See Bid Package: Volume II- Section 5 for Sample Reference Price ($1.859/gal)

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EXHIBIT C

SITE LOCATION 3: PITI 7

Bidders Price Proposal	2-Year Base Period		3-Year Extension Option		
	1st Yr Fixed Service Fee $/gal	2nd Yr Fixed Service Fee $/gal	1st Yr Extn Fixed Service Fee $/gal	2nd Yr Extn Fixed Service Fee $/gal	3rd Yr Extn Fixed Service Fee $/gal
Mobil Oil Guam, Inc.	**$0.215**	**$0.215**	**$0.219**	**$0.224**	**$0.228**
IP&E Guam, LLC	**$0.249**	**$0.249**	**$0.252**	**$0.255**	**$0.258**

2 year Base Contract	Current Contract IP&E	1st YEAR- CONTRACT BASE PERIOD		2nd YEAR- CONTRACT BASE PERIOD		2-YEAR CONTRACT BASE PERIOD	
		Bidder #1 (Mobil Oil Guam, Inc)	Bidder #2 (IP&E Holdings, LLC)	Bidder #1 (Mobil Oil Guam, Inc)	Bidder #2 (IP&E Holdings, LLC)	Bidder #1 (Mobil Oil Guam, Inc)	Bidder #2 (IP&E Holdings, LLC)
a. Estimated Quantity (gal/yr) [1]	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	16,000,000	16,000,000
b. Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
c. Bid Fixed Service Fee Cost ($/gal)	$0.262	$0.215	$0.249	$0.215	$0.249	$0.215	$0.249
d. Estimated Contract Price ($/gal)	$2.121	$2.074	$2.108	$2.074	$2.108	$2.074	$2.108
e. **Estimated Contract Cost, $/yr** (a x d)	**$ 16,968,000.00**	**$16,592,000.00**	**$16,864,000.00**	**$16,592,000.00**	**$16,864,000.00**	**$33,184,000.00**	**$33,728,000.00**
f. Fixed Service Fee Cost, $/yr (a x c)	$ 2,096,000.00	$1,720,000.00	$1,992,000.00	$1,720,000.00	$1,992,000.00	$3,440,000.00	$3,984,000.00
g. Variance w/ Current Contract		($376,000.00)	($104,000.00)	($376,000.00)	($104,000.00)	($752,000.00)	($208,000.00)
		-18%	-5%	-18%	-5%		
		(Savings)	(Savings)	(Savings)	(Savings)	(Savings)	(Savings)
Ranking (1 as the Lowest Bidder)						**1**	**2**

Based on the analysis for the two (2) year contract base period, the lowest bidder is **Mobil Oil Guam, Inc**.

Notes:

[1] See Bid Package: Volume II- Schedule B for Estimated Quantities

[2] See Bid Package: Volume II- Section 5 for Sample Reference Price ($1.859/gal)

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EXHIBIT D

SITE LOCATION 4: CABRAS 1&2, MEC 8&9, MANENGGON, AND TALOFOFO

Bidders Price Proposal	2-Year Base Period		3-Year Extension Option		
	1st Yr Fixed Service Fee $/gal	2nd Yr Fixed Service Fee $/gal	1st Yr Extn Fixed Service Fee $/gal	2nd Yr Extn Fixed Service Fee $/gal	3rd Yr Extn Fixed Service Fee $/gal
Mobil Oil Guam, Inc.	**$0.257**	**$0.257**	**$0.262**	**$0.268**	**$0.273**
IP&E Guam, LLC	**$0.300**	**$0.300**	**$0.303**	**$0.307**	**$0.310**

2 year Base Contract	Current Contract MOG	1st YEAR- CONTRACT BASE PERIOD		2nd YEAR- CONTRACT BASE PERIOD		2-YEAR CONTRACT BASE PERIOD	
		Bidder #1 Mobil Oil Guam, Inc.	Bidder #2 IP&E Holdings, LLC	Bidder #1 Mobil Oil Guam, Inc.	Bidder #2 IP&E Holdings, LLC	Bidder #1 Mobil Oil Guam, Inc.	Bidder #2 IP&E Holdings, LLC
a. Estimated Quantity (gal/yr) [1]	2,200,000	2,200,000	2,200,000	2,200,000	2,200,000	4,400,000	4,400,000
b. Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
c. Bid Fixed Service Fee Cost ($/gal)	$0.242	$0.257	$0.300	$0.257	$0.300	$0.257	$0.300
d. Estimated Contract Price ($/gal)	$2.101	$2.116	$2.159	$2.116	$2.159	$2.116	$2.159
e. **Estimated Contract Cost, $/yr** (a x d)	**$ 4,622,200.00**	**$4,655,200.000**	**$4,749,800.000**	**$4,655,200.00**	**$4,749,800.00**	**$9,310,400.00**	**$9,499,600.00**
f. Fixed Service Fee Cost, $/yr (a x c)	$ 532,400.00	$565,400	$660,000	$565,400	$660,000	$1,130,800.00	$1,320,000.00
g. Variance w/ Current Contract		$33,000.00	$127,600.00	$33,000.00	$127,600.00	$66,000.00	$255,200.00
		6%	24%	6%	24%		
		(Additonal Expense)	(Additonal Expense)	(Additonal Expense)	(Additonal Expense)	(Additonal Expense)	(Additonal Expense)
Ranking (1 as the Lowest Bidder)						**1**	**2**

Based on the analysis for the two (2) year contract base period, the lowest bidder is **MOBIL OIL GUAM, INC.**

Notes:

[1] See Bid Package: Volume II- Schedule B for Estimated Quantities

[2] See Bid Package: Volume II- Section 5 for Sample Reference Price ($1.859/gal)

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EXHIBIT E

Historical Contract Fixed Service Fees

Contract Number	Contract Period	Contractor/ Supplier	Fixed Service Fee Cost ($/gal)							
			Aggreko	Yigo CT	Macheche CT	Dededo CT	Piti 7	Baseloads	MDI	Talofofo
GPA-008-18	Jan 2020-Dec 2021	Mobil Oil Guam	$0.226	$0.226			$0.215	$0.257	$0.257	$0.257
GPA-008-18	Jan 2020-Dec 2021	IP&E Guam			$0.221	$0.221				
GPA-029-14	Jan 2014-Dec 2019	Mobil Oil Guam	$0.242	$0.242	$0.242	$0.242	$0.262	$0.262	$0.242	$0.242
GPA-050-09	Dec 2009-Nov 2014	IP&E Guam		$0.661	$0.661	$0.661				
GPA-050-09	Dec 2009-Nov 2012	Shell Guam		$0.278	$0.278	$0.278				
GPA-049-09	Dec 2012-Dec 2014	IP&E Guam					$0.661	$0.661	$0.661	$0.661
GPA-049-09	Dec 2009-Nov 2012	Shell Guam					$0.601	$0.661	$0.660	$0.601
GPA-037-06	Dec 2006-Nov 2009	Shell Guam					$0.379	$0.944	$0.904	$0.904
GPA-034-06	Dec 2006-Nov 2009	Shell Guam		$0.454	$0.454	$0.454				
GPA-036-03	Oct 2003-Sep 2008	Shell Guam							$0.149	$0.149
GPA-036-03	Oct 2003-Nov 2006	Mobil Oil Guam					$0.123	$0.155		
GPA-022-01	Oct 2001-Nov 2006	Shell Guam		$0.149	$0.149	$0.149				
GPA-118-99	Oct 1999-Sep 2003	Mobil Oil Guam							$0.069	$0.069
GPA-117-99	Oct 1999-Sep 2003	Mobil Oil Guam						$0.157		
GPA-116-99	Oct 1999-Sep 2003	Shell Guam					$0.072			
GPA-149-98	Oct 1998-Sep 2001	Shell Guam		$0.065	$0.065	$0.065				

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IFB GPA-008-18: PRICE PROPOSAL ANALYSIS

SITE LOCATION 1: **YIGO CT & AGGREKO**

2 year Base Contract	Current Contract MOG	1st CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	1st CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2nd CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	2nd CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2-YEAR CONTRACT BASE PERIOD Bidder #1 (Mobil Oil Guam, Inc)	2-YEAR CONTRACT BASE PERIOD Bidder #2 (IP&E Holdings, LLC)
Estimated Quantity (gal/yr) [1]	17,000,000	17,000,000	17,000,000	17,000,000	17,000,000	34,000,000	34,000,000
Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
Bid Fixed Service Fee Cost ($/gal)	$0.242	$0.226	$0.282	$0.226	$0.282	$0.226	$0.282
Estimated Contract Price ($/gal)	$2.101	$2.085	$2.141	$2.085	$2.141	$2.085	$2.141
Estimated Contract Cost ($/yr)	**$ 35,717,000.00**	**$ 35,445,000.00**	**$ 36,397,000.00**	**$ 35,445,000.00**	**$ 36,397,000.00**	**$ 70,890,000.00**	**$ 72,794,000.00**
Fixed Service Fee Cost ($/yr)	$4,114,000.000	$3,842,000.000	$4,794,000.000	$3,842,000.000	$4,794,000.000	$7,684,000.000	$9,588,000.000
Variance w/ Current Contract		($272,000.00)	$680,000.00	($272,000.00)	$680,000.00	($544,000.00)	$1,360,000.00
		-7%	17%	-7%	17%	(Savings)	(Additional Expense)
Ranking (1 as the Lowest Bidder)						1	2

SITE LOCATION 2: **MACHECHE CT & DEDEDO CT**

2 year Base Contract	Current Contract MOG	1st CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	1st CONTRACT YEAR Bidder #2 (Name)	2nd CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	2nd CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2-YEAR CONTRACT BASE PERIOD Bidder #1 (Mobil Oil Guam, Inc)	2-YEAR CONTRACT BASE PERIOD Bidder #2 (IP&E Holdings, LLC)
Estimated Quantity (gal/yr) [1]	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	16,000,000	16,000,000
Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
Bid Fixed Service Fee Cost ($/gal)	$0.242	$0.260	$0.221	$0.260	$0.221	$0.260	$0.221
Estimated Contract Price ($/gal)	$2.101	$2.119	$2.080	$2.119	$2.080	$2.119	$2.080
% of Reference Price	13%	14%	12%	14%	12%	14%	12%
Estimated Contract Cost ($/yr)	**$ 16,808,000.00**	**$ 16,952,000.00**	**$ 16,640,000.00**	**$ 16,952,000.00**	**$ 16,640,000.00**	**$ 33,904,000.00**	**$ 33,280,000.00**
Fixed Service Fee Cost ($/yr)	$ 1,936,000.00	$2,080,000.00	$1,768,000.00	$2,080,000.00	$1,768,000.00	$4,160,000.00	$3,536,000.00
Variance w/ Current Contract		$144,000.00	($168,000.00)	$144,000.00	($168,000.00)	$288,000.00	($336,000.00)
		4%	-9%	7%	-9%	(Additional Expense)	(Savings)
Ranking (1 as the Lowest Bidder)						2	1

SITE LOCATION 3: **PITI 7**

2 year Base Contract	Current Contract MOG	1st CONTRACT YEAR (Mobil Oil Guam, Inc) (Name)	1st CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2nd CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	2nd CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2-YEAR CONTRACT BASE PERIOD Bidder #1 (Mobil Oil Guam, Inc)	2-YEAR CONTRACT BASE PERIOD Bidder #2 (IP&E Holdings, LLC)
Estimated Quantity (gal/yr) [1]	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	16,000,000	16,000,000
Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
Bid Fixed Service Fee Cost ($/gal)	$0.262	$0.215	$0.249	$0.215	$0.249	$0.215	$0.249
Estimated Contract Price ($/gal)	$2.121	$2.074	$2.108	$2.074	$2.108	$2.074	$2.108
% of Reference Price	14%	12%	13%	12%	13%	12%	13%
Estimated Contract Cost ($/yr)	**$ 16,968,000.00**	**$16,592,000.000**	**$16,864,000.000**	**$16,592,000.000**	**$16,864,000.000**	**$33,184,000.00**	**$33,728,000.00**
Fixed Service Fee Cost ($/yr)	$ 2,096,000.00	$1,720,000	$1,992,000	$1,720,000	$1,992,000	$3,440,000.00	$3,984,000.00
Variance w/ Current Contract		($376,000.00)	($104,000.00)	($376,000.00)	($104,000.00)	($752,000.00)	($208,000.00)
		-18%	-5%	-18%	-5%	(Savings)	(Savings)
Ranking (1 as the Lowest Bidder)						1	2

SITE LOCATION 4: **CABRAS 1&2, MEC 8&9, MANENGGON, AND TALOFOFO**

2 year Base Contract	Current Contract MOG	1st CONTRACT YEAR Bidder #1 Mobil Oil Guam, Inc.	1st CONTRACT YEAR Bidder #2 IP&E Holdings, LLC	2nd CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	2nd CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2-YEAR CONTRACT BASE PERIOD Bidder #1 (Mobil Oil Guam, Inc)	2-YEAR CONTRACT BASE PERIOD Bidder #2 (IP&E Holdings, LLC)
Estimated Quantity (gal/yr) [1]	2,200,000	2,200,000	2,200,000	2,200,000	2,200,000	4,400,000	4,400,000
Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
Bid Fixed Service Fee Cost ($/gal)	$0.242	$0.257	$0.300	$0.257	$0.300	$0.257	$0.300
Estimated Contract Price ($/gal)	$2.101	$2.116	$2.159	$2.116	$2.159	$2.116	$2.159
% of Reference Price	13%	14%	16%	14%	16%	14%	16%
Estimated Contract Cost ($/yr)	**$ 4,622,200.00**	**$4,655,200.000**	**$4,749,800.000**	**$4,655,200.000**	**$4,749,800.000**	**$9,310,400.00**	**$9,499,600.00**
Fixed Service Fee Cost ($/yr)	$ 532,400.00	$565,400	$660,000	$565,400	$660,000	$1,130,800.00	$1,320,000.00
Variance w/ Current Contract		$33,000.00	$127,600.00	$33,000.00	$127,600.00	$66,000.00	$255,200.00
		6%	24%	6%	24%	(Additional Expense)	(Additional Expense)
Ranking (1 as the Lowest Bidder)						1	2

Notes:

[1] See Bid Package: Volume II- Schedule B for Estimated Quantities

[2] See Bid Package: Volume II- Section 5 for Sample Reference Price ($1.859/gal)

Over-all:

SUMMARY 1: Contract Cost						
Lowest per Location	$ 56,692,200.000	$ 16,640,000.00	$ 56,692,200.000	$ 16,640,000.00	$ 113,384,400.000	$ 33,280,000.00
					$146,664,400.00	
SUMMARY 2: Fixed Service Fee Cost						
Lowest per Location	$ 6,127,400.000	$1,768,000.00	$ 6,127,400.000	$1,768,000.00	$ 12,254,800.000	$3,536,000.00
					$15,790,800.00	
SUMMARY 3: Savings						
Lowest bid per Location	($615,000.00)	($168,000.00)	($615,000.00)	($168,000.00)	$ (1,230,000.000)	$ (336,000.00)
					($1,566,000.00)	

IFB GPA-008-18: PRICE PROPOSAL ANALYSIS

SITE LOCATION 1: **YIGO CT & AGGREKO**

2 year Base Contract	Current Contract MOG	1st CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	1st CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2nd CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	2nd CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2-YEAR CONTRACT BASE PERIOD Bidder #1 (Mobil Oil Guam, Inc)	2-YEAR CONTRACT BASE PERIOD Bidder #2 (IP&E Holdings, LLC)
Estimated Quantity (gal/yr) [1]	17,000,000	17,000,000	17,000,000	17,000,000	17,000,000	34,000,000	34,000,000
Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
Bid Fixed Service Fee Cost ($/gal)	$0.242	$0.226	$0.282	$0.226	$0.282	$0.226	$0.282
Estimated Contract Price ($/gal)	$2.101	$2.085	$2.141	$2.085	$2.141	$2.085	$2.141
Estimated Contract Cost ($/yr)	**$ 35,717,000.00**	**$ 35,445,000.00**	**$ 36,397,000.00**	**$ 35,445,000.00**	**$ 36,397,000.00**	**$ 70,890,000.00**	**$ 72,794,000.00**
Fixed Service Fee Cost ($/yr)	$4,114,000.000	$3,842,000.000	$4,794,000.000	$3,842,000.000	$4,794,000.000	$7,684,000.000	$9,588,000.000
Variance w/ Current Contract		($272,000.00)	$680,000.00	($272,000.00)	$680,000.00	($544,000.00)	$1,360,000.00
		-7%	17%	-7%	17%	(Savings)	(Additional Expense)
Ranking (1 as the Lowest Bidder)						**1**	**2**

SITE LOCATION 2: **MACHECHE CT & DEDEDO CT**

2 year Base Contract	Current Contract MOG	1st CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	1st CONTRACT YEAR Bidder #2 (Name)	2nd CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	2nd CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2-YEAR CONTRACT BASE PERIOD Bidder #1 (Mobil Oil Guam, Inc)	2-YEAR CONTRACT BASE PERIOD Bidder #2 (IP&E Holdings, LLC)
Estimated Quantity (gal/yr) [1]	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	16,000,000	16,000,000
Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
Bid Fixed Service Fee Cost ($/gal)	$0.242	$0.260	$0.221	$0.260	$0.221	$0.260	$0.221
Estimated Contract Price ($/gal)	$2.101	$2.119	$2.080	$2.119	$2.080	$2.119	$2.080
% of Reference Price	13%	14%	12%	14%	12%	14%	12%
Estimated Contract Cost ($/yr)	**$ 16,808,000.00**	**$ 16,952,000.00**	**$ 16,640,000.00**	**$ 16,952,000.00**	**$ 16,640,000.00**	**$ 33,904,000.00**	**$ 33,280,000.00**
Fixed Service Fee Cost ($/yr)	$ 1,936,000.00	$2,080,000.00	$1,768,000.00	$2,080,000.00	$1,768,000.00	$4,160,000.00	$3,536,000.00
Variance w/ Current Contract		$144,000.00	($168,000.00)	$144,000.00	($168,000.00)	$288,000.00	($336,000.00)
		4%	-9%	7%	-9%	(Additional Expense)	(Savings)
Ranking (1 as the Lowest Bidder)						**2**	**1**

SITE LOCATION 3: **PITI 7**

2 year Base Contract	Current Contract MOG	1st CONTRACT YEAR (Mobil Oil Guam, Inc) (Name)	1st CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2nd CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	2nd CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2-YEAR CONTRACT BASE PERIOD Bidder #1 (Mobil Oil Guam, Inc)	2-YEAR CONTRACT BASE PERIOD Bidder #2 (IP&E Holdings, LLC)
Estimated Quantity (gal/yr) [1]	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	16,000,000	16,000,000
Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
Bid Fixed Service Fee Cost ($/gal)	$0.262	$0.215	$0.249	$0.215	$0.249	$0.215	$0.249
Estimated Contract Price ($/gal)	$2.121	$2.074	$2.108	$2.074	$2.108	$2.074	$2.108
% of Reference Price	14%	12%	13%	12%	13%	12%	13%
Estimated Contract Cost ($/yr)	**$ 16,968,000.00**	**$16,592,000.000**	**$16,864,000.000**	**$16,592,000.000**	**$16,864,000.000**	**$33,184,000.00**	**$33,728,000.00**
Fixed Service Fee Cost ($/yr)	$ 2,096,000.00	$1,720,000	$1,992,000	$1,720,000	$1,992,000	$3,440,000.00	$3,984,000.00
Variance w/ Current Contract		($376,000.00)	($104,000.00)	($376,000.00)	($104,000.00)	($752,000.00)	($208,000.00)
		-18%	-5%	-18%	-5%	(Savings)	(Savings)
Ranking (1 as the Lowest Bidder)						**1**	**2**

SITE LOCATION 4: **CABRAS 1&2, MEC 8&9, MANENGGON, AND TALOFOFO**

2 year Base Contract	Current Contract MOG	1st CONTRACT YEAR Bidder #1 Mobil Oil Guam, Inc.	1st CONTRACT YEAR Bidder #2 IP&E Holdings, LLC	2nd CONTRACT YEAR Bidder #1 (Mobil Oil Guam, Inc)	2nd CONTRACT YEAR Bidder #2 (IP&E Holdings, LLC)	2-YEAR CONTRACT BASE PERIOD Bidder #1 (Mobil Oil Guam, Inc)	2-YEAR CONTRACT BASE PERIOD Bidder #2 (IP&E Holdings, LLC)
Estimated Quantity (gal/yr) [1]	2,200,000	2,200,000	2,200,000	2,200,000	2,200,000	4,400,000	4,400,000
Sample Reference Price ($/gal) [2]	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859	$1.859
Bid Fixed Service Fee Cost ($/gal)	$0.242	$0.257	$0.300	$0.257	$0.300	$0.257	$0.300
Estimated Contract Price ($/gal)	$2.101	$2.116	$2.159	$2.116	$2.159	$2.116	$2.159
% of Reference Price	13%	14%	16%	14%	16%	14%	16%
Estimated Contract Cost ($/yr)	**$ 4,622,200.00**	**$4,655,200.000**	**$4,749,800.000**	**$4,655,200.000**	**$4,749,800.000**	**$9,310,400.00**	**$9,499,600.00**
Fixed Service Fee Cost ($/yr)	$ 532,400.00	$565,400	$660,000	$565,400	$660,000	$1,130,800.00	$1,320,000.00
Variance w/ Current Contract		$33,000.00	$127,600.00	$33,000.00	$127,600.00	$66,000.00	$255,200.00
		6%	24%	6%	24%	(Additional Expense)	(Additional Expense)
Ranking (1 as the Lowest Bidder)						**1**	**2**

Notes:

[1] See Bid Package: Volume II- Schedule B for Estimated Quantities

[2] See Bid Package: Volume II- Section 5 for Sample Reference Price ($1.859/gal)

Over-all:

SUMMARY 1: Contract Cost						
Lowest per Location	$ 56,692,200.000	$ 16,640,000.00	$ 56,692,200.000	$ 16,640,000.00	$ 113,384,400.000 / $ 33,280,000.00	**Lowest cost if awarded to lowest bidder per Location (Consistent with requirement in Volume I- Section 2.13)**
					$146,664,400.00	
SUMMARY 2: Fixed Service Fee Cost						
Lowest per Location	$ 6,127,400.000	$1,768,000.00	$ 6,127,400.000	$1,768,000.00	$ 12,254,800.000 / $3,536,000.00	
					$15,790,800.00	
SUMMARY 3: Savings						
Lowest bid per Location	($615,000.00)	($168,000.00)	($615,000.00)	($168,000.00)	$ (1,230,000.000) / $ (336,000.00)	**e/(savings) If awarded to lowest bidder per Location (Consistent with requirement in Volume I- Section 2.13)**
					($1,566,000.00)	

GUAM POWER AUTHORITY
ATURIDÅT ILEKTRESEDÅT GUAHAN
P.O.BOX 2977 • AGANA, GUAM U.S.A. 96932-2977

Issues for Decision

Resolution No. 2019-11

Relative to Authorizing Expenditure for the Out of Service Inspection and Refurbishment of GPA Bulk Storage Fuel Tanks

What is the project's objective and is it necessary and urgent?
The project's objective is to comply with regulatory requirements. GPA will comply with the regulatory requirements by procuring services for the bulk storage fuel tanks out of service inspection and refurbishment to ensure the structural integrity and safe operations of the tanks. The project also includes upgrading of the facility's auxiliary system to assure uninterrupted supply of fuel for the power plants. The last internal inspection was conducted in 2007 and inspections are required every ten (10) years. Upon completion of the project, they will be utilized to store ULSD fuel to supply Piti Power Plant 7 and upon ULSD conversion for Piti Power Plants 8 and 9 and the proposed 180 MW power plant.

On September 25, 2018 CCU approved Resolution 2018-20 authorizing GPA to solicit competitive bids for the Bulk Storage Fuel Tanks Out of Service Inspection and Refurbishment through an Invitation for Bid process and to petition the PUC for approval to issue bids to procure a contractor for the project. Then on October 25, 2018 the PUC approved GPA's petition to issue an Invitation for Bid related to the procurement of Bulk Storage Fuel Tanks Out of Service Inspection and Refurbishment.

Where is at?
GPA Bulk Storage Fuel Tanks Facility at Piti, Guam.

How much will it Cost?
The anticipated cost is $8,969,510.00 for Tristar Agility contract.

What is its funding Source?
Cabras 3&4 Insurance Proceeds

When will it be completed?
The anticipated schedule is as follows:

Planned Start:	August, 2019
Planned Finish:	August, 2021
Duration:	24 months

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

GPA RESOLUTION NO. 2019-11

RELATIVE TO AUTHORIZING EXPENDITURE FOR THE OUT OF SERVICE INSPECTION AND REFURBISHMENT OF GPA BULK STORAGE FUEL TANKS

WHEREAS, the Guam Power Authority (GPA) operates and maintains the bulk storage fuel tanks located at Piti, Guam, which are managed by the current Contractor, Isla Petroleum and Energy Holdings, LLC (IP&E) and are used to supply fuel to GPA's base load units; and

WHEREAS, the bulk storage fuel tanks last underwent internal inspection and refurbishment in 2007; and

WHEREAS, the tanks appurtenances including auxiliary equipment are required to be assessed, recalibrated and refurbished to comply with regulatory requirements; and

WHEREAS, upon completion of the out of service/internal inspection and refurbishment of the bulk storage fuel tanks, they will be utilized to store ULSD fuel to supply Piti Power Plant 7 and upon ULSD conversion for Piti Power Plants 8 and 9 and the proposed 180 MW power plant; and

WHEREAS, on September 25, 2018 CCU approved Resolution 2018-20 authorizing GPA to solicit competitive bids for the Bulk Storage Fuel Tanks Out of Service Inspection and Refurbishment through an Invitation for Bid process and to petition the PUC for approval to issue bids to procure a contractor for the project.

WHEREAS, on October 25, 2018 the PUC approved GPA's petition to issue an Invitation for Bid related to the procurement of Bulk Storage Fuel Tanks Out of Service Inspection and Refurbishment.

WHEREAS, the Procurement Officer has provided adequate public announcement for the Out of Service Inspection and Refurbishment of GPA Bulk Storage Tanks through Bid Invitation No. GPA-028-19; and,

WHEREAS, a sole qualified bidder submitted a bid for GPA's consideration (Attached Exhibit "A"); and

WHEREAS, GPA's Evaluation Committee has determined Tristar Agility to be the responsible and responsive bidder at a cost of $8,969,510.00.

WHEREAS, the award of the contract to Tristar Agility has been made pursuant to a written finding by the Procurement Officer that the Tristar Agility's offer meets the requirements of GPA and has been determined to be fair and reasonable.

WHEREAS, the total cost exceeds the $ 1.5M threshold requiring GPA to seek contract approval and authorization from PUC; and

WHEREAS, GPA is requesting the approval of the CCU to petition the PUC for the approval to award the contract to Tristar Agility for the Out of Service Inspection and Refurbishment of GPA Bulk Storage Fuel Tanks; and,

NOW, THEREFORE, BE IT RESOLVED, by the Consolidated Commission on Utilities, subject to the review and approval of the Public Utilities Commission, as follows:

1. GPA's request to award the contract to Tristar Agility for the Out of Service Inspection and Refurbishment of GPA Bulk Storage Fuel Tanks is reasonable and prudent.
2. GPA is authorized to petition the Public Utilities Commission for approval to award the contract to Tristar Agility for the Out of Service Inspection and Refurbishment of the GPA Bulk Storage Fuel Tanks.
3. Upon PUC approval, the General Manager is hereby authorized obligating authority of $8,969,510.00 for the purpose of securing out of service inspection and refurbishment services for the GPA Bulk Storage Fuel Tanks utilizing the Cabras 3&4 Insurance Proceeds.

RESOLVED, that the Chairman certifies and the Board Secretary attests the adoption of this Resolution.

DULY AND REGULARLY ADOPTED AND APPROVED THIS 23RD DAY OF JULY, 2019.

Certified by:	Attested by:
JOSEPH T. DUENAS	MICHAEL T. LIMTIACO
Chairperson	Secretary
Consolidated Commission on Utilities	Consolidated Commission on Utilities

I, Michael T. Limtiaco, Secretary for the Consolidated Commission on Utilities (CCU), as evidenced by my signature above do certify as follows:

The foregoing is a full, true, and accurate copy of the resolution duly adopted at a regular meeting of the members of Guam Consolidated Commission on Utilities, duly and legally held at a place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

Ayes: _____
Nays: _____
Absent: _____
Abstain: _____

NUMBER OF INVITATIONS ISSUED: 7

NUMBER OF BIDS RECEIVED: 1

PROCUREMENT DIVISION
GUAM POWER AUTHORITY
ABSTRACT OF BIDS

INVITATION NUMBER: GPA-020-19

OPENING DATE: 04/30/2019 OPENING TIME: 2:00 PM

DESCRIPTION OF SUPPLIES OR SERVICES: Out of Service Inspection & Refurbishment of GPA Bulk Storage Fuel Tanks

ATTACHMENT A - ABSTRACT OF BIDS
(OUT OF SERVICE INSPECTION AND REFURBISHMENT OF GPA BULK STORAGE FUEL TANKS)

DESCRIPTION					
QTY.					
UNIT					
DELIVERY					
No.: [1] Vendor Name: TRISTAR AGILITY					
UNIT COST	$8,961,570.00				
PART NUMBER					
CATALOG NUMBER					
MANUFACTURER					
DELIVERY	720 CALENDAR DAYS.				
TOTAL LUMP SUM					
UNIT COST					
PART NUMBER					
CATALOG NUMBER					
MANUFACTURER					
DELIVERY					
TOTAL LUMP SUM					

[X] BID GUARANTEE:

[ ] Bid Bond #: _____ Amount: $_____

[ ] Certificate of Authority [ ] Power of Attorney

[X] Standby Letter of Credit # 01-SB-1529 Amount $ 1,520,000.00

[ ] Letter of Credit #_____ Amount $_____

[ ] Cashier's or Certified Check #_____ Amount $_____

[ ] Wire Transfer

[ ] Statement of Qualifications

[X] Affidavits (Original Form)

[ ] Affidavits (Copy Form): Originals submitted with _____

[X] Major Shareholders [X] Non-Collusion [X] No Gratuities or Kickbacks

[X] Ethical Standards [X] Wage Determination [X] Restriction Against Sex Offendors

[ ] Business License [ ] Contractors License

[ ] Local Procurement Signed and Submitted

[ ] Literature

[ ] Lowest Responsive Bidder
[ ] Tie Bid
[ ] Only Bid
[ ] Other Than Lowest Responsive Bidder

I hereby certify that all bids received in response to this invitation were opened under my personal supervision, and that the names of all bidders have been entered herein.

SIGNATURE

TABULATED BY: _____ DATE: 4/30/19

PAGE 1 OF 1

NAMES OF PERSONS PRESENT AT THE BID OPENING AND WHOM THEY REPRESENT

	PRINT NAME:	COMPANY NAME:	SIGNATURE:	DATE:
1	manuel m. minas	GPA engg-pm		
2	HONORIO 'JUN' ESTIRA	GPA ENG'G/PM		
3	OSCAR R. EVANGELISTA	GPA ENG'G/PM		
4	Brian Park	Tristar Terminal Guam. Inc		
5	VIVEK KUMAR	TRISTAR TERMINALS GUAM INC.		
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CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

Special Board Meeting
Guam Waterworks Authority
CCU Conference Room, Gloria B. Nelson Public Service Building
5:30 p.m., August 9 2019

AGENDA

1. **CALL TO ORDER**

2. **COMMUNICATIONS**
   2.1 Public Comments (2 min. per person)

3. **NEW BUSINESS**
   3.1 Discussion on Upcoming Bond Issuance

4. **OLD BUSINESS**
   4.1 Discussion on GWA's Five-Year Financial Plan and CIP

5. **ANNOUNCEMENTS**
   5.1 Next CCU Meetings: GWA WS 8/20; GPA WS 8/22; CCU/GWA Meeting 8/27; CCU/GPA Meeting 8/29

6. **ADJOURNMENT**

GUAM CCU

GUAM WATERWORKS AUTHORITY

Presentation To:

Consolidated Commission on Utilities
GWA Special Board Meeting
August 9, 2019

1

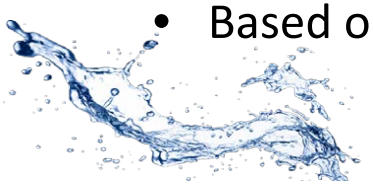
GWA 5-Year Financial Plan and Capital Improvement Program & 2019 Bond

Status Update

GUAM WATERWORKS AUTHORITY

5-Yr Financial Plan & CIP: Milestones

- GWA filed public notice of financial plan and proposed rate increases on April 5, 2019 (90-day) and June 6, 2019 (30-day)
- 90-day public notice period required by Ratepayer Bill of Rights commenced April 5, 2019 to July 6, 2019
- GWA held three (3) village meetings and conducted
  - Yigo, Agat/Santa Rita, Mangilao village meetings: May 2019
  - Governor/Lt. Gov., Speaker Barnes / Sen. Perez, Mayor's Council: May-June 2019
  - Guam Chamber of Commerce, Rotary Club of Guam, Guam Society of Professional Engineers: May-July 2019
- GWA filed rate case petition with PUC on July 6, 2019
- Based on past PUC action, anticipated decision w/in 60-90 days by FY2020



GUAM WATERWORKS AUTHORITY

GWA Series 2019 Bond

- Bonds were originally planned for 2018 under 2nd legislative authorization of $450M
- In FY2018, decision was made to delay bond issuance and rate relief request to support borrowing
- Bonds are required for 2011 Court Order projects, NDWWTP and upcoming Consent Decree

GWA Historic Bond Activity			
Year	**Authorizations**	**Issuances**	**Balance**
Legislative Authorizations			
2005	$ 220,000,000		
2009/2010	$ 450,000,000		
	$ 670,000,000		$ 670,000,000
Completed Bonds			
2005		$ 101,175,000	$ 568,825,000
2010		$ 118,825,000	$ 450,000,000
2013		$ 172,630,000	$ 277,370,000
2016		$ 143,310,000	$ 134,060,000
		$ 434,765,000	
Proposed Bonds			
2019		$ 134,060,000	$ -



GUAM WATERWORKS AUTHORITY

	Breakdown of Proposed 2019 Bond				$ 134,060,000
1	Consent Decree Projects				
	PW 09-11	Water System Reservoir Improvements	$	26,188,000	
	PW 11-02	Ugum WTP Reservoir	$	7,500,000	
	PW 12-06	Tank Replacement Piti & Hyundai	$	6,500,000	
	MP-PW-Tank-22	Existing Tank Inspections/Assessment	$	150,000	
			$	40,338,000	$ 40,338,000
2	NDWWTP Completion / OEA Projects				
	MP-WW-WWTP-08	Northern District WWTP Completion	$	14,500,000	$ 14,500,000
3	Future Consent Decree Projects				
	MP-WW-Pipe-17	Mamajanao Capacity Replacement	$	1,700,000	
	MP-WW-FM-01	Force Main Replacement / Rehab	$	100,000	
	MP-WW-FM-02	Yigo FM Replacement	$	200,000	
	MP-WW-FM-03	Route 1 Asan Force Main Replacement	$	2,124,000	
	MP-WW-FM-04	Hagatna WWTP Force Main Rehab	$	6,689,000	
	MP-WW-Pump-01	Lift Station Yrehab Program	$	8,620,000	
	MP-WW-Pump-02	Fujita Lift Station	$	10,923,000	
			$	30,356,000	$ 30,356,000
4	Other Water / Wastewater Improvements per 2018 WRMP				$ 48,866,000
	Production wells: new and rehabilitation				
	Water distribution system - pipe and valve replacements				
	Pressure Zone Realignment projects				
	Valve, tank inspection, repair and maintenance projects				
	Sewer line and manhole repair, rehabilitation projects				
	Sewer line replacement projects				
	SCADA projects				
	General Plant improvement projects				
	Security and resiliency projects				
	Planning and Master Plan Updates				



GUAM WATERWORKS AUTHORITY

Rate Plan & Financing Schedule Impacts

GWA Planned Schedule

		FY19								FY20					
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
Petition on GWA 5-Yr FP/CIP (FY20-FY24)																
	GWA Pub Notice Filed (Apr 5, '19)				✦											
	90-day Public Notice Period															
	CCU Approval (Jun 5, '19)						✦									
	Petition filed w/ PUC (Jul 6, '19)							✦								
PUC	PUC action (based on past 5-yr plans)															
PUC	PUC approval of rate plan (est'd)									✦						
Petition on GWA Series 2019 Bond																
	CCU Approval (est'd Aug 9, '19)								✦							
	Petition filed w/ PUC (est'd Aug 11, '19)								✦							
	PUC Review (45d from filing)															
	PUC approval of borrowing (est'd Sep 26, '19)									✦						
GWA Series 2019 Bonds																
	Ratings Presentations (Oct 1st wk) / Receive Ratings (Oct 4th wk)															
	POS Issuance / CER Issuance (Nov 1st wk)											✦				
	Marketing / Pricing (Nov 1st-2nd wk)															
	Final OS / Closing (End of Nov)											✦				

PUC Planned Schedule

		FY19									FY20							
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Petition on GWA 5-Yr FP/CIP (FY20-FY24)																		
	GWA Pub Notice Filed (Apr 5, '19)				✦													
	90-day Public Notice Period																	
	CCU Approval (Jun 5, '19)						✦											
	Petition filed w/ PUC (Jul 6, '19)							✦										
Case 1	ALJ Memo on action-uncontested (Feb 4; Day 195)																	
	PUC approval of rate plan (est'd Feb PUC Mtg)														✦			
Case 2	PUC action-contested (Est'd addil 60d)																	
Case 2	PUC approval of rate plan (est'd)																✦	
Petition on GWA Series 2019 Bond (Uncontested rate case)																		
	CCU Approval (est'd Nov, '19)											✦						
	Petition filed w/ PUC (est'd Dec, '19)												✦					
	PUC Review (45d from filing)																	
	PUC approval of borrowing (est'd Feb '20)														✦			
GWA Series 2019 Bonds (Uncontested)																		
	Ratings Presentations / Receive Ratings																	
	POS Issuance / CER Issuance															✦		
	Marketing / Pricing (pricing est'd Dec 10, '19)																	
	Final OS / Closing (est'd mid-Dec)																✦	
Petition on GWA Series 2019 Bond (Contested rate case)																		
	CCU Approval (est'd Jan, '20)													✦				
	Petition filed w/ PUC (est'd Feb, '20)														✦			
	PUC Review (45d from filing)																	
	PUC approval of borrowing (est'd Apr '20)																✦	
GWA Series 2019 Bonds (Contested)																		
	Ratings Presentations / Receive Ratings																	
	POS Issuance / CER Issuance																✦	
	Marketing / Pricing (pricing est'd May '20)																	
	Final OS / Closing (est'd June '20)																	✦



GUAM WATERWORKS AUTHORITY

Current Status

- PUC ALJ and consultant have indicated full 120-day action period is likely (formal PUC approval February 2020), and even longer if Navy intervenes.
- Upon PUC ALJ request, GWA notified Navy and asked if they intended to intervene in rate case petition
- GWA was notified August 2nd that Navy Counsel has decided to intervene in rate case
- With a contested rate case, 5-yr rate plan is not likely to be approved until April 2020
- Bond Counsel has advised that GWA cannot go to the market without approved rate relief to support the borrowing and meet the indenture requirements, therefore, if PUC does not approve a rate plan until February of 2020
  - GWA will not be able to complete Court Order Projects on time
  - GWA may not be able to complete NDWWTP upgrades required by OEA



GUAM WATERWORKS AUTHORITY

GWA Actions

- Consulting Engineers report on-going; POS development is on-hold
- Counsel is verifying
  - PUC public notice requirements
  - PUC statutory action requirements
- Acting CFO, GM and Counsel are evaluating options
  - Filing for approval of year 1 rate to facilitate reduced borrowing to cover Court Order and NDWWTP/OEA project needs
  - File motion with PUC with scheduling modifications to move up PUC public notice period and shorten overall approval
  - File notice with the District Court advising of delay to completion of Court Order projects due



CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
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Regular Board Meeting
GUAM WATERWORKS AUTHORITY
CCU Conference Room, Gloria B. Nelson Public Service Building
5:30 p.m., August 27, 2019

AGENDA

1. CALL TO ORDER

2. APPROVAL OF MINUTES

3. COMMUNICATIONS
   - 3.1 Public Comments (2 min. per person)

4. GWA
   - 4.1 New Business
   - 4.1.1 GM Report
   - 4.1.2 Financials
   - 4.1.3 Resolution No. 40-FY2019 Relative to Approval of the Contract with JMI-Edison for the Purchase of Splicing Gels and Submersible Cables for Islandwide Deepwell Water Production
   - 4.1.4 Resolution No. 41-FY2019 Relative to Approval of the Construction Contract for the Santa Rosa, Santa Rita and Sinifa Reservoir Replacement with AIC International Inc.

5. ANNOUNCEMENTS
   - 6.1 Next CCU Meetings: CCU / GPA MTG 8/29

6. ADJOURNMENT

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

Regular Board Meeting
CCU Conference Room, Gloria B. Nelson Public Service Building
5:30 p.m., June 5, 2019

MINUTES

1. CALL TO ORDER

The Chairman called the CCU regular monthly meeting of the Consolidated Commission on Utilities for June 6, 2019 to order at 5:42 p.m. He said four (4) Commissioners were present and that Comm. Santos was running late. Others in attendance include:

Commissioners:

Joseph T. Duenas	CCU Chairman
Francis E. Santos	CCU Vice Chairman
Michael T. Limtiaco	CCU Secretary
Judith P. Guthertz	CCU Treasurer
Simon A. Sanchez	Commissioner

Executive Mgmt.:

Miguel Bordallo	GM / GWA
John Benavente	GM / GPA
Melinda Mafnas	AGMO / GPA
John Cruz	AGMET / GPA
Tricee Limtiaco	AGMA / GPA
Chris Budasi	AGMA / GWA
John Kim	CFO / GPA
Gilda Mafnas	CFO (A) / GWA
Kelly Clark	Legal Counsel / GWA
Graham Botha	Legal Counsel / GPA

Management & Staff:

Art Perez	Communication / GPA
Vangie Lujan	Compliance & Safety / GWA
Yvonne Cruz	Budget Officer / GWA
Heidi Ballendorf	Communications / GWA
Ron Topasna	O&M Mgr, Water Treatment / GWA
Ann Borja-Gallarde	Mgmt. Analyst / GWA Ex.Office
Lou Sablan	Board Secretary / CCU

Guest:

Kurt Bilz	Brown & Caldwell
Jerry Johnson	Brown & Caldwell
Angela Perez	AM Insurance

Jeff Johnson	PUC
Nestor Licanto	KUAM
John O'Connor	Guam Daily Post
Mark Miller	Commissioner / PUC

2. APPROVAL OF MINUTES

The Minutes of the CCU Special Meeting of April 4, 2019 was presented for approval.

Comm. Gutherrz motioned to approve the Minutes subject to verification and written correction second by Comm. Sanchez.

It was clarified that Comm. Guthertz was present at the onset of the meeting; but asked to be excused because she was not feeling well. Her name was not listed in the attendance and Comm. Limtiaco asked that the Minutes be corrected and to add Comm. Guthertz name to the attendee list.

There was no further discussion or objection and the motion passed 4 ayes and 1 absent.

3. COMMUNICATIONS

3.1 Public Comments - None

4. GPA

4.1 New Business

4.1.1 GM Report

GM gave usual GM Report and Top 10 accomplishments.

1. **Generation System**: The following summarizes the generation forecast for July 2019:

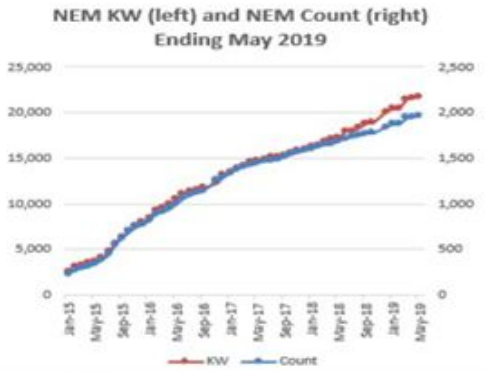
   Projected Available Capacity: 373 MW
   Projected Demand: 250 MW
   Anticipated Reserve Margin: 123 MW

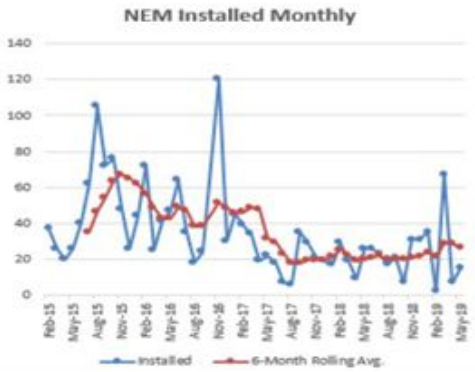
   - **The peak demand for May 2019 was 254MW which is an increase from 251MW in May 2018. May was a high demand period mainly due to higher average temperatures**



2. **Net Metering (NEM) Credit Adjustment:**

The PUC ordered at its May 30th meeting to not make any change to the current program. It also ordered for GPA and PUC to agree on an independent consultant to determine the cost and benefits of NEM on GPA and the benefits distributed generation may have in the distribution system. The PUC will entertain the report when completed and will address the matter further at that time or once the total NEM KW capacity reaches about 26MW. The following graphs show Net Metering ending May 2019:





3. **LED Streetlights:**

We are receiving delivery of 3,750 LED (white color) streetlights and will be replacing the vintage High Pressure Sodium (yellowish color) lights between now and September. The 250Watt lights will be installed on marine drive from and the 150 watts in villages in the south. We are in the process of ordering another 7,000 LED lights for delivery in FY 2020 to change out the balance of the HPS lighting.

The changeout of 3,750 lights will result in a savings to DPW of about $300K/year. This savings can install about another 1,000 lights. I will discuss with the DPW director the possibility of adding to the system to begin addressing poorly lighted areas impacting public safety.

4. **New 180 MW Power Plant:**

Three bidders submitted bids on June 3, 2019. The evaluation team began work today evaluating submittals to determine the lowest bidder. I may be able to advise the CCU on the final results in July.

5. **Utility Progress:**

The following provides a report on progress between 2015 to 2018 and issues to be address in 2019 and forward.

[The Chairman announced that Comm. Santos joined meeting]

SUMMARY

STRATEGY & PLANNING

GPA's actions are guided by its Strategic Plan & the Integrated Resource Plan (IRP). The Strategic Plan, developed in 2009, identified four areas of effective planning and policy development: high reliability; financial strength; employee effectiveness; and safe and reliable operations. The IRP was developed to provide the lowest cost solution for providing reliable, affordable power; diversifying power supply resources and fuels to mitigate risk; and exercising environmentally responsible stewardship of the economic and natural resources of the island. The IRP was last updated in 2016.

The 2015 event rendering Cabras units 3 & 4 inoperable significantly influenced specific IRP strategies and recommendations. Industry technologies, market responses to request for proposals and other factors shaped GPA's approach to recommendations. Projects and efforts supporting both plans are highlighted in this report. The focus of all efforts is to continuously improve overall customer service to our ratepayers while maximizing cost-savings. A summary of significant savings achieved within this period is included in this report.

The strength of GPA is evident in the significant progress toward the goal to provide reliable, affordable service to the island.

STRATEGIC PLAN SUMMARY

CRITICAL SUCCESS FACTOR	STATUS	TREND
ACHIEVE EXCELLENT CUSTOMER SERVICE *CSF1*		▲
Sustained Improvements of Customer Satisfaction *KPI 1*		—
Improve Customer Experience *KPI 2*		▲
PROVIDE AFFORDABLE & VALUE PRODUCTS *CSF2*		▲
Minimize Energy Production Cost *KPI 1*		▲
Reduce Line & Unaccounted for Energy Losses *KPI 2*		—
Achieve Energy Diversity at Affordable Cost *KPI 3*		▲
Improve Credit Rating *KPI 4*		▲
DEVELOP SUSTAINALBE WORKFORCE & LEADERSHIP *CSF3*		▲
Implement a Succession Planning Program *KPI 1*		▲
Implement a Structured Leadership & Workforce Training *KPI 2*		▲
Achieve Safety Awareness & Enhanced Safety Practices *KPI 3*		▲
Enhance Employee Satisfaction *KPI 4*		▲
ACHIEVE HIGH SYSTEM RELIABILITY *CSF4*		▲
Reduce Customer Outages *KPI 1*		▲
EFFECTIVELY USE TECHNOLOGY *CSF5*		▲
Implement Excellent Cyber Security Program *KPI 1*		▲
Improve Productivity Through Technology & Automation *KPI 2*		▲

INTEGRATED RESOURCE PLAN

STRATEGIC ISSUE	STATUS
Increase fuel diversity, mitigate fuel supply risk, and encourage cost-effective renewable energy	ON TRACK
Comply with existing and future US EPA requirements including EGU MACT, RICE MACT, and SO2 NAAQS	ON TRACK
Understand and consider financial and operational impacts associated with compliance and non-compliance with existing and future US EPA requirements	COMPLETED
Support electric power service requirements for the DOD build-up and its economic consequences	ON TRACK
Evaluate the economic feasibility of retiring or extending the life of its existing generation units	COMPLETED
Reduce customer outages due to instantaneous loss of generation by examining operational and economic feasibility of using energy storage devices or requiring certain reliability enhancement characteristics for future generation additions	COMPLETED
PRIMARY RECOMMENDATIONS	**STATUS**
Obtain agreement with US EPA & Guam EPA to suspend compliance with RICE MACT for Cabras 3&4 and MEC 8&9 until GPA completes transition to LNG	ON TRACK
Procure an additional 40 MW of renewable energy under Phase II Renewable Energy Acquisition Program, if cost-effective with other available technologies, as early as 2017 to reduce present value costs. *NOTE: 180 MW of renewable energy contracted in 2018*	COMPLETED
Develop the necessary infrastructure and contracts to engender transition from RFO to LNG by 2018 or sooner. NOTE: New power plant and pipelines for ULSD & natural gas on bid	ON TRACK
Retire Marbo CT and Dededo Diesels 1-4 by FY 2014	COMPLETED
Firm up decision to retire Cabras 1&2 and/or Tanguisson 1&2 in 2018 concurrent with the availability of LNG. *NOTE: All steam units to be retired after completion and commissioning of new power plant*	COMPLETED
Based on baseload retirement decisions, construct new 60 - 120 MW gas-fired combined cycle power plant, preferably in northern Guam to reduce technical line losses, online concurrent with the availability of LNG. *NOTE: Bid for new 180 MW ULSD/natural gas plant underway*	ON TRACK
If Cabras 1&2 or Tanguisson 1&2 are not retired, complete conversion of these units to burn LNG concurrent with availability of LNG in 2018	COMPLETED
Complete repowering of Piti 7 GE Frame 6B combustion turbine generator (CTG) into a combined cycle burning LNG. *NOTE: Repowering is not economically feasible*	COMPLETED
Complete conversion of Cabras 3&4 and MEC 8&9 to burn LNG. *NOTE: Cabras 3&4 retired. Conversion of MEC 8&9 after commissioning of new plant*	ON TRACK
If economically and technically feasible, build a 10 MW geothermal unit to come online in 2019. *NOTE: Result of Phase II renewable bid indicates geothermal unit is not feasible*	COMPLETED
Work towards compliance with all new environmental standards and regulations	ON TRACK

Customer Convenience & Value-Added Services

TRANSPARENCY & ACCURACY

- New, easy-to-read billing statement and newsletter resulted in 25% reduction in mailing cost
- Redesigned billing statement garnered an 'Award of Merit' for Excellence in Public Power Communication from the American Public Power Association
- Successfully completed the new CC&B billing system for GPWA resulting in providing customers with ways to monitor their billings and consumption
- Robotic process automation reduced analysis of meter performance issues resulting in faster change outs and more accurate account information
- Timely and consistent outage notifications
- Enhanced website & web services
- Monthly newsletter distributed to all ratepayers to raise awareness of value-added services, initiatives and programs for all customers

ACCOUNT SERVICES

- Expanded Customer Care Center to include phone, email, and social media interaction
- Timely onboarding of ~600 new customers per year
- Merge of CC&B information allows GPA & GWA CSRs to assist customers with cross-services
- Expanded system status and customer services notifications via social media, including outage information

CONVENIENCE

- Same day / same hour services (reconnections, disconnections) offered through advanced meter infrastructure
- Real-time monitoring and push notifications of energy consumption through www.myenergyguam.com
- Implementation of credit card payments to all customers including commercial. Cost to administer program substantially reduced while at the same time providing this ease of payment alternative to customers
- 24/7 Automated IVR Pay-By-Phone offers customers 24/7 account balance information and pay options via toll-free number phone
- Mobile APPs for ease of customer use and payments
- GPWA partnership to offer One Utility Customer Service

INCENTIVES

- Continuation of Energy Sense Rebate, Demand Side Management (DSM) Program
- $1M return to ratepayers participating in DSM program from savings of bond refinancing
- Funding $2.8M from working capital for DSM program to assist ratepayers reduce their energy cost. This is in addition to the $1M funded from the refinancing of bonds

System Integrity & Reliability

STRENGTHENED ISLAND-WIDE POWER SYSTEM

- Completed installation of SCADA Project
- Continued changeout of wooden poles to concrete. 90% of system is concrete
- Continued village hybrid underground projects



ISLANDWIDE POWER SYSTEM RECOVERY AND RESILENCY

Minimized service interruption to customers following the Cabras 3&4 incident and mitigated the loss of 79MW of capacity:

- Contracted interruptible load with major commercial and government customers
- Contracted for 40 MW of lease-to-own temporary power from Aggreko
- Replaced aged Cabras 1&2 main transformers; $2M
- Rehabilitated 40 MW Dededo power plant; $10M.
- Replaced Macheche combustion turbine; $2.7M
- Overhauled Cabras Steam $6.0M
- Overhaul of medium speed units $6M (ongoing)

ASSET PLANNING & MANAGEMENT

- GIS Network: First electric distribution utility to migrate to a production ESRI Utility Network (ArcGIS Pro and Utility Network), providing confidence to perform switching operations and maintain service to the island wide power system
- Mobile Workforce Management System: Implementing new program which will allow real time processing, scheduling and expeditious completion of new customer and existing system maintenance Work Orders
- Vehicle and Equipment Tracking: Continued to track movement of all GPA fleet to insure efficient and proper use of fleet
- Predictive Maintenance Program: Locate and fix equipment problems before they cause outages.
-

STORM READINESS & RECOVERY

- Increased Resiliency & Restoration: Expeditious recovery from several storms, including Typhoons Dolphin and Mangkhut resulting in minimal service disruption and revenue loss
- Water & Sewer Resiliency: Acquired all GWA standby generators; GPWA

Partnership enabled GWA to maintain 99% of water service to customers during the last significant storm
- FEMA Reimbursements: Typhoon Dolphin $2.3M; Typhoon Mangkhut $4.3M
- System Hardening: Awarded new $5.6M underground system for Tumon Bay to protect our valuable tourism industry. Completed the Agat Hybrid Underground System project to over 500 Homes
- Material Inventory: Maintained about $12M system inventory in order to insure expedient recovery from Typhoons
- Equipment Fleet: Continued to replace aged heavy equipment fleet and increased bucket truck fleet in order to expedite typhoon recoveries

NEXT GENERATION PLANTS

- Acquisition of new 180 MW power plant ongoing ahead of consent decree or application of penalties, potentially saving millions of dollars. Contract award targeted for end of CY 2019
- Clean, efficient, economical technology will meet / exceed environmental regulatory requirements
- Efficient technology will reduce fuel oil imports by 17 million gallons annually
- New plant allows for diversified fuel mix
- Newer technology will allow additional incorporation of renewable energy (target 50% by 2035) resulting in substantial reduction of fuel cost and furthermore the stabilization of LEAC rate
- New plant location closer to population base & away from shorelines thus reducing line losses and storm/climate and natural disaster impacts such as tsunamis
- New plant location closer to over 60% of island load will improve reliability and allow some areas to receive power continuously during typhoons

Managing Money

LOWER FUEL & ENERGY COSTS

- No base rate increase since 2013
- Implemented new residual fuel oil contract with reduced premium
- Reduced the impact of increased fuel oil cost to the ratepayers through use of as much as $16M in working capital to cushion LEAC increases. The LEAC rate has been unchanged for 1 year despite the rise in fuel prices over the period. Recommended to hold LEAC steady through January 2020
- 120 MW solar PV plants commissioning in 2021 will save ratepayers (at today's LEAC rate of $0.154/kWh) $19.5M annually
- 40 MW solar PV project targeted for award in 2019 and commissioning in 2021 is expected to save ratepayers about $5M annually
- Approvals to issue Renewables Phase IV Bid for an additional 120 MW by 2024 will be pursued later this year
- In regional rate comparisons, GPA maintains the lowest rates per kWh compared to other island power utilities including the Hawaiian Islands, US Virgin Islands and the CNMI
- Changed 6,000 HPS streetlights to LED saving $400K/year in fuel cost; 4,000 additional lights to be changed out in FY2019 and an additional 11,000 by the end of FY2020. Total savings to reach $1.2M Annually by end of FY 2020. GPA requesting the Government to utilize this savings to add an additional 2,700 new LED streetlights throughout the island to improve island safety

FINANCIAL SOLVENCY

- Maintenance and improvements of credit ratings despite challenges encountered over this period including the loss of Cabras 3&4, Typhoons, and the negative impact of President Trump Tax Reform on the island's economy

COST SAVINGS – O&M

- Consistently below annual O&M budget.
- Received ownership from Independent Power Producer for TEMES 7 plant, assumed O&M responsibility resulting in >$4M annual savings
- Received ownership of the MEC 88 MW power plant and renegotiated the MEC contract for 5 years, resulting in >$15M annual savings
- Consolidation of GPA & GWA operations into a single location at the Gloria B Nelson Public Service Building; $1M annual savings in GPWA rent; substantial indirect savings resulting due to co-locating operating efficiencies
- Robotic Process Automation (RPA) implemented to automate manual and time-consuming service order and work order process thus improving accuracies and saving significant manhours
- Labor FTE has decreased from 512 in FY2014 to the current manning of 470 FTE; Annual savings >$3M (including benefits)
- Reduced overtime of non-storm related activities from past years in excess of $2M to about $1.4 annually. This is despite the reduction of 42 FTE over the period

COST SAVINGS - CIP

- Bid in progress for new power plant to avoid millions in penalties and allow system to diversify fuel mix and achieve 50% renewables integration by 2035 and which will reduce and stabilize future LEAC
- Purchased and rezoned 60 acres of R1-zone property for new power plant at $10M. M1-zone (industrial use) land alternatives could have cost $18M thereby resulting in cost savings of about $8M. Optimal location of property (less than one mile from Harmon substation) resulted in $15M-$22M infrastructure savings

FINANCING & INSURANCE

- Successful bond refinancing to reduce annual payments by $500K at 4.12%, the lowest interest rate achieved by any GovGuam entity. Savings of $1M were returned to ratepayers through the funding of the DSM program (Energy Sense Rebate). Savings of $500K was dedicated to assist GDOE reduce its annual utilities cost.
- Reduction in cost of annual insurance premium by $2M
- Settlement of Cabras 3 & 4 Insurance Claim at $125.8M. $72M to be applied to new power plant to reduce annual capacity fee. This reduction in annual capacity fee will save ratepayers about $5M per year over the next 25 years

Investing in People

SUCCESSION PLANNING

- Identified, planned, and continue to implement programs to address the major issue that 57% of the GPA workforce could retire within the next 10 years

TALENT DEVELOPMENT & MANAGEMENT

- Annual employee evaluations completed, and adjustments implemented per pay-for-performance program
- Organizing comprehensive employee training program to enhance employee capabilities, present upward opportunities and career development
- Increasing intranet services allowing employees convenient self-service options
- Continuing successful Apprenticeship program to train future skilled force for difficult to hire skill sets
- Continuing seasonal internship program to attract future utility engineers, accountants and other professionals
- Working with Guam Department of Education to help prepare high school students for apprenticeship programs and career paths in the utility
- Promotes GPA & energy careers at outreach events

COMPENSATION STRATEGY

- Continue to migrate employee compensation to the 50th percentile salary market level in order to attract and retain employees. GPA currently at the 15th percentile and implementing a moderate and reasonable migration

AWARDS & RECOGNITION

- Consecutive 1st through 3rd place annual awards from American Public Power Association for safety excellence. Practicing and promoting safe practices and workplaces is our utmost priority. Receiving this award annually provides a benchmark of achievement of this goal. GPA received the First-Place honor for 2018 safety performance
- SAG award issued to GPA for being first electric distribution utility to migrate to a production ESRI Utility Network
- Mutual Aid Commendation received from American Public Power Association for assistance to CNMI Typhoon Yutu recovery

Investments in Energy Innovation & the Environment

ENERGY INNOVATION

- Integrated two Nissan Leaf Electric Vehicles (EV) into Authority's fleet & business operations, with two charging stations. GPA to continue to replace aged fleet with EV most especially as more Original Equipment Manufactures reduce EV prices
- Installed 275 KW Wind Turbine at Cross Island Road with a $2.1M grant from Department of Energy. Saves ratepayers fuel cost while gathering information for future wind projects
- Contracted for Installation of 40 megawatts of utility scale battery storage by October 2019 to mitigate short duration outages caused by baseload unit trips and Solar PV intermittencies

DEVELOPING RENEWABLE ENERGY

- Installed 25 MW of solar PV renewables (Dandan) accounting for 3% of total energy sales
- Awarded 120 MW of solar PV renewables contracts at about $0.085/kWh with expected commissioning by Dec 2021, which will account for 18% of total energy sales and the reduction of fuel oil Imports by 18.5 million gallons annually
- Bid in progress for 40 MW of renewables on land leased from the US Navy. This project will capture energy during the day and utilize all energy to offset higher peak energy production cost, which will account for 5.5% of total energy sales and the reduction of fuel oil imports by 5.5 million gallons annually
- New power plant project to be awarded in 2019 which would allow GPA to target 50% renewables by 2035 resulting in substantial reduction of fuel cost and furthermore the stabilization of LEAC rate
- Facilitated the expansion of the Net Metering Program to ~2,000 customers (estimated 22 MW in total connected systems)
- Completed Renewable Integration Study to prepare to increase renewable penetration above 25% into the system

CLEANER AIR & WATER

- New 180 MW Plant, Piti 8&9 conversion to ULSD, decommissioning of Cabras 1&2, and GPA's Renewable Energy and Energy Efficiency Programs will significantly improve the air quality throughout Guam as well as significantly reduce GPA's carbon footprint
- Decommissioning of Cabras 1&2 and 3&4 promotes healthier harbor ecosystem and eliminates thermal pollution effects on the reef

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Community Partnerships

ISLAND PARTNERSHIPS

- Kicked off a sustainable tree trimming and pole painting program including a pilot partnership with nine (9) village Mayors
- Successful Bond refinancing to reduce annual payments by $500K; $1M return to ratepayers participating in DSM program. $500K contributed to assist GDOE reduce its annual utilities cost
- Obtained and assisted GovGuam agencies in obtaining grants. $2.1M GPA Wind Turbine Project; $500K for DPW Solar PV System; $1.25M for GDOE Lighting retrofits; These grants result in savings to ratepayers and these entities
- Assisting Guam Energy Office on $64K for Energy Audits and creating Energy plans for individual schools
- Assisted UOG in renovating an existing building energy with efficient equipment resulting in 50% to 75% savings from similar UOG buildings
- Assisted Guam Memorial Hospital Authority by conducting preventive maintenance of their electrical system in order to avoid imminent electrical system failures which would impact patient care
- Assisted the Department of Corrections in addressing their standby generators issues which when not available creates prison safety issues
- Promote energy solutions and sustainable practices through participation and sponsorship community programs such as the annual University of Guam's Island Sustainability Conference
- Promote utility initiatives and careers through school outreach program
- Educates and promotes benefits of a publicly-owned utility through community outreach events such as annual Public Power Week

INDUSTRY PARTNERSHIPS

- Active membership & participation with the American Public Power Association
- GPA General Manager serves as APPA Region 10 Director, representing members from Guam, Commonwealth of the Northern Mariana Islands, American Samoa, Puerto Rico, US Virgin Islands, & Canada

MUTUAL AID & ASSISTANCE

- Successful assistance to CNMI Typhoon Yutu Recovery. GPA assisted for four full months resulting in labor savings of about $3M
- GPA received a 'Mutual Aid Commendation' from the American Public Power Association in recognition of its support in electric power restoration efforts for providing mutual aid assistance to the Commonwealth Utilities Corporation, Saipan

2019 Forward

Key initiatives for 2019 forward include the following:

2019+ INITIATIVES
Update Strategic Plan
Update Integrated Resource Plan
Integration of Additional Renewables
Evaluate Economics of Diversified Fuel Mix
Optimize Reserve Margin Requirements
Implement Workforce Development & Sustainability Policy
Implement Strategic & Sustainable Training & Compensation Programs
Develop & Implement Disaster & Typhoon Resiliency Policy
Continue Concrete Pole Hardening
Continue Underground Hardening Progress
Maintain Target Equipment & Material Availability
Continue to Foster Mutual Aid Partnerships
Continue Customer Satisfaction Improvements
Conduct Customer Surveys & Polls to Address Customer Needs & Satisfaction
Implement Measures to Improve Overall Customer Experience
Continue Reliability Improvement Plan
Vegetation Management Program
Automation Generation Control
Hardening Changeouts to Composite Materials
Predictive Maintenance Programs
Continue & Expand Energy Affordability Initiatives
Demand Side Management (DSM)
Revolving Loans
Lifeline Rates
Energy Audits

At the end of the GM's report, comments and discussion followed.

It was mentioned that relative to retiring of plants / decommissioning of plants – the GM has not given CCU his plans yet i.e. Cabras 4 and the Tanguisson plant. GM Benavente responded that this is the next phase; he said the engines may be sold but the bigger picture is the retiring of Cabras1&2 GPA does not have plans to build conventional plants at this location so he proposed to bid out the clean out of the facility and perhaps consider possible commercial revenue generating activity / business in that location. Comm. Limtiaco asked what will happen to the fuel tanks. GM responded that they may be sold or moved out adding that there are (2) large 11million gallon tanks in the backside which will remain GPA property for fuel storage for the new plant being built in Okudo. GM said he will analyze these plans and report back the CCU.

Comm. Sanchez commented that management is very good at creating and reporting out all these improvements which is good however, he doesn't think the average ratepayer knows what we have done or what we are doing or planning to do including our elected leaders. He cited (2) takeaways - there is a need to improve our communication with ratepayers; we are not consistent in translating the improvements that are made and how it benefits the ratepayers. There are savings or other benefits

and nowhere is this summarized. We are streaming on the website but does anyone really watch it? He asked management to put themselves in the shoes of the average ratepayer. If we want to plant a seed... how do we show ratepayers what we are doing or how it benefits them – this is the challenge that he is struggling with. He used base rates as an example adding that we have not raised it since 2013 but how do we get this information to the ratepayers. He asked management that at the next meeting in July that we talk about how we can improve our communications especially with social media. How can we better engage our ratepayers? At the next meeting in July can management come up with a plan to see how we can use social media such as YouTube and Facebook to reach / translate all this good information to our ratepayers.

Comm. Santos asked if the (2) CFO's can give the CCU a report relative to the value of GPA and GWA today. It bothers him that people think local people are not good enough to run the utilities. Let's challenge the people of Guam - give me the price of what our utility is worth by the next meeting so we can let our ratepayers know – especially the "seem to be" experts that seem to think it is better to sell the utilities. There will definitely be an uprising if we sell our water. CFO's please tell the Commission what our utility [both GPA and GWA] is worth.

Comm. Limtiaco said he agrees with Comm. Sanchez – the summary that GM Benavente has just shared contains so many improvements and the notion [that has been circulating the past few weeks] that management has not been reviewed is entirely inaccurate. This summary contains many projects and improvements by management that leads the Commission to evaluate and review our management team every day. We need to do a better job at communicating this to the public. Nobody remembers what management has done the last 4 years We need to publish this information regularly. He used the whole issue with recent pay raises as an example – he mentioned that tonight he learned that payroll comes out of base rates [the GM concurred] and that base rates has not been raised since 2013. As commissioners we need to do a better job at communicating this fact to ratepayers because the perception is that power rates are going up because of these pay raises. There are numerous notable accomplishments that benefit the ratepayer but they are not aware of it.

The GM agrees that we do not do a good job at getting the word out. The reality it takes 12 people and 2 groups of people to get approval before any action can be done. He said this is a start and the next phase is to translate this to ratepayer benefits. Comm. Limtiaco added that all the things that management has done there is cost avoidance factors involved; we should let the public know this. Comm. Sanchez said we need to let people know that the utilities is in good hands. We need to be consistent to get the message out. Comm. Guthertz recommended a combination approach - social media, traditional media and report progress and cost savings. people want to know. Let's express it in words that is easy to understand.

Comm. Sanchez - sometimes customer service reps are not singing the same song. Are we training our people well? Can we do better job? Our Internal customers [our own employees] need to understand what we have do, why we do it and the benefits so they can explain it clearly to the customers that they help. Comm. Sanchez used estimated billing as an example; ratepayers need to better understand the back billing process and why it is important.

4.1.2 Financials

No financial update was given at this meeting.

4.1.3 Resolution No. 2019-09 Relative to Authorizing GPA to contract for Unarmed Uniformed Security Guard Services

If approved, Resolution 2019-09 will ensure physical security and protection of the island's critical electric infrastructure, GPA employees and customers.

Security Guard Services will be performed at the following locations (base scope of work):

1) Gloria B. Nelson Public Service Building, Fadian
2) Supply Warehouse, Storage Yard and T&D Service Center, Dededo
3) Dededo CT Power Plants, Dededo
4) Aggreko & Yigo CT Power Plants, Yigo
5) Tanguisson Power Plant, Lower Harmon Cliff Line
6) Cabras Power Plants, Piti

Option 1: Gloria B. Nelson Public Service Building

- 24/7 coverage; Operation of security kiosk, including recordation of visitor information & ID badges

Option 2: Roving Security Guard Services at 15 Locations

- Macheche CT & Substation
- Agana Substation & Battery Storage
- Talofofo Diesel, Substation & Battery Storage
- Tenjo Diesel & Substation
- Manenggon Diesels
- San Vitores Substation
- Tamuning Substation
- Barrigada Substation
- Piti Substation
- Tumon Substation
- GAA Substation
- Anigua Substation
- Harmon Substation
- Pagat Substation
- Umatac Substation

Option 3: Monitoring of Security Surveillance (CCTV) & Alarms (24/7 coverage at GPA Security Command Ctr)

The cost of this unarmed security contract involves the following and will be funded with O&M Funds.

	Monthly	Annual	Maximum (2-yr)
Base Contract	$66,798.67	$801,584.04	$1,603,168.08
Option 1	*$12,293.20*	*$147,518.40*	*$295,036.80*
Option 2	*$10,950.00*	*$131,400.00*	*$262,800.00*
Option 3	*$12,293.20*	*$147,518.40*	*$295,036.80*
Total Possible Optional Expenditure:	$35,536.40	$426,436.80	$852,873.60
		Total Possible Expenditure	$2,456,041.68

The base contract term covers periods 06/01/19 – 09/30/19; 10/01/19 – 05/31/20 and the 1st year option to renew term is for 06/01/20 – 09/30/20; 10/01/20 – 05/31/21

Comm. Guthertz motioned to approve Resolution 2019-09 second by Comm. Sanchez.

In discussion Comm. Guthertz asked why the service is for unarmed guards with everything that is happening on island right now she is concerned about guards not being able to defend themselves should the need arise. The GM said this option was not included in the bid and said he would make a note to address / possibly include this option at the next bid process.

On the motion there was no further discussion or objection and the motion carried. The vote was 4 ayes and 1 absent.

5. GWA

5.1 New Business

5.1.1 GM Report

No GM Report was given at this meeting.

5.1.2 Financials

No Financial Update was given at this meeting.

5.1.3 Resolution No. 37-FY2019 Relative to Approval of Contract for Construction of Upgrade of the Northern District Wastewater Treatment Plant, Project No. S17-003-OEA

If approved, Resolution 37-FY2019 will allow GWA management to expand the NDWWTP to include secondary treatment which is required to meet the NPDES Discharge permit for the plant. The upgraded plant will include a new preliminary treatment system including screens and grit removal, secondary biological treatment system including oxidation ditches and clarifiers, ultraviolet disinfection system and sludge treatment system.

This project is an essential component of the infrastructure upgrades necessary to provide adequate treatment in compliance with current regulatory requirements for the protection of Guam's water resources and marine environment, as well as to support the new facilities to be constructed as part of the military build-up. The project is urgent as prompt initiation of construction activities is required in order to meet the schedule requirements in the Grants and for the opening of the Marine Cantonment from which the plant will receive wastewater flows.

GWA Management seeks CCU approval for the proposed bid price of One Hundred Twenty-Two Million Seventy-Seven Thousand Eighty-Eight Dollars ($122,077,088.00); with a five percent (5%) contingency of Six Million One Hundred Three Thousand Eight Hundred Fifty-Four Dollars and Forty Cents ($6,103,854.40), the total authorized funding amount requested is One Hundred Twenty-Eight Million One Hundred Eighty Thousand Nine Hundred Forty-Two Dollars and Forty Cents ($128,180,942.40) and the funding source will come from US Dept. of Defense, Office of Economic Adjustment, General assistance Grants with additional funding from the System Development Charge (SDC) funds and or Bonds. The anticipated completion of the construction activities by the contractor is December 31, 2021.

It was mentioned that there were five (5) proponents for the Step 2 bids. Black Construction Corp was recommended as the lowest priced, responsive and responsible bidder.

Also, the GM mentioned that the OEA Grants are slated for more than this project which not all has been bid out or completed. Management is asking for the flexibility to move the funds around with the intent to maximize the grant funds.

Comm. Sanchez motioned to approve Resolution 37-FY2019 second by Comm. Guthertz.

Comm. Limitaco asked clarification what portion of the grant funds would be used for this project and the GM said about 116k initially, possibly more and the balance from SDC or bond funds.

Comm. Sanchez said this bid will benefit the largest portion of our WW community 95% paid by grants. It saves ratepayers significant sums of money. New customers who paid into the SDC will also help pay for this project so that existing rate customers will not have to pay for this project. But will now see a brand new WW treatment plant at no cost to them. He said he remembers the CCU meeting with General Bice [at the time] insisting that DOD help contribute to this project due to the military buildup. Comm. Sanchez said that all this was in place but someone had to coordinate / orchestrate all the moving parts to bring the project to fruition. GM Bordallo confirmed that OEA mentioned that they were looking at a 3rd party to do the project not GWA. It took 3years and 5 months [since he was hired] to tonight where he is now asking CCU to award a bid that is being paid 95% by the federal government for the for the largest portion of our community and over the northern aquifer. This strikes me as a very good example of why we would want to reward a manager for not only doing his job but for doing it very very well. You saved ratepayers $300Milllion on this project. We saved the PUC from having to consider an increase in rates because of this project. At the onset of this project - it was only a commitment. Comm. Sanchez told GM Bordallo - you and your team achieved a major accomplishment -this is the 2nd Secondary WWTP in the past 3-1/2 years. I will remember this at your evaluation. We need to do a better job to let ratepayers know what we have done. Ii is important to get the numbers and the history right.

Comm. Duenas added that this is a big project – bigger even that as big as constructing a big hotel.

Comm. Santos said that the new military base itself is not going to open until this plant is operational. It is a local company [GWA] that is doing it. OEA said to GM Bordallo under no circumstances you will go over budget and Comm. Santos said reminded GM Bordallo that he must pay close attention not to go over budget. He commended the GM for the confidence that OEA has in our management team.

Comm. Sanchez asked if OEA would have given us $173M if there was no confidence in GWA - more projects coming from this bucket of money. He reiterated that (5) elected officials [CCU] went to OEA 9 years ago asking them to help us ratepayers. This is a very momentous moment.

Comm. Limtiaco commended GM Bordallo for a job well done and thank you for doing your job. He asked if this will this be a new revenue stream for GWA [which will keep rates low for the ratepayers]- GM confirmed yes and will even save the ratepayers money through water purchase by the Marine base that will offset against the water that GWA buys from the Navy, more savings for the ratepayers.

On motion the vote was 5 Ayes; the motion to approve Resolution 37-FY2019 passed unanimously.

5.1.4 Resolution No. 36-FY2019 Relative to Approving the Five-Year Financial Plan and Capital Improvement Program

The objective of the 5-year Financial Plan and Capital Improvement Program is to present the first five-years of capital improvement projects adopted under the 2018 Water Resource Master Plan update, as well as projects necessary to complete the 2011 Court Order and other regulatory compliance objectives. The projects outlined in the Capital Improvement Program will be conducted island wide and will also provide for the continued modernization, operation, maintenance and repair of GWA's water and sewer systems while the ancillary Financial Plan provides the revenues to support debt service on approximately $260 million in bond borrowing to pay for these much-needed capital improvements which will benefit all residents and visitors of Guam.

The Financial Plan addresses the 5-year period FY2020-FY2024 and includes: (1) estimated annual budgets for operations, maintenance and repair of GWA's water and sewer system, including capital improvement projects; and (2) a detailed descriptive plan for raising sufficient revenue to meet the projected costs set forth in the budget.

Approval of the Five-Year Financial Plan and Capital Improvement Program is urgent and necessary to allow for the filing of a Guam Public Utilities Commission Rate Petition following approval by the CCU in an effort to get the matter on the agenda for decision by the PUC at its August 2019 meeting, if possible.

The total funding required for the Five-Year Financial Plan and Capital Improvement Program is $291,000,000 in CIP, of which $260,000,000 will be required in new bond issuances. Of the $260M requirement, $134M has already been approved by the Legislature and what we are asking for is the balance of $126M of legislative approval prior to 2022-.2023.

Chairman Duenas said that this will be our 3rd 5-year plan.

GM Bordallo said that Public information initiatives have been conducted in the north, south and central villages as well as the Guam Chamber, Mayor's Council, and provided a briefing for the Legislature and oversight chair and a briefing to the Gov/Lt Gov. will be done on June 28. The Plan was uploaded to the GWA Webiste - 37 people downloaded copy of the plan and several comments have been received but non substantive enough to make any changes to the plan.

Chairman Duenas said that the Mayors play major role in community - they are the ones that people go to first. They were very responsive to and support the proposed plans contained in the 5-year plan.

Comm. Guthertz motioned to approve Resolution 36-FY2019 second by Comm. Santos.

Comm. Sanchez said that this is a 5-year plan [the 3rd one] - $524M CIP [including 2019] of which $400 paid by ratepayers and $100 by Dept. of Defense. About half of the projects will be invested in water and the other half in waste water.

Comm. Sanchez also talked about goals and asked the GM his goal relative to this plan. GM Bordallo said with this plan his goal is to reduce non-rev water by 10% reduction within the 5year period. Comm. Duenas asked reconfirmation if the GM mean leaks and other things like the use of the fire department is still not acknowledged at this point.

Comm. Sanchez said that the non-revenue water will be reduced by 20% which will produce savings for ratepayers. The 1st 10 years of rate relief is dominated by complying with the 2003 and 2011 court order. As the GM reported regularly, we are about 1 year off to complete this court order.

Comm. Sanchez said that now the focus will be on GWA projects - of the $500M only 26% is EPA related the rest is GWA related. GM Bordallo said he is working towards this goal.

You did some sensitivity analysis [base case]- the cumulate impact is 37.1% You also did another sensitivity analysis cumulative impact is 15% - moderate plan 32.5% [scenario 3]. You also did another sensitivity analysis – relative to our debt ratio - cumulative impact is 27.7%. With all these scenarios there are tradeoffs.

The Commission tonight can look at 4 scenarios and look at the tradeoffs. He thanked the GM for these analytics; is beneficial to the Commission.

Comm. Duenas said -if we lower the rate what does it mean for future rate increases. The GM said he provided the projected increases broken down in 5-year increments:

the first 5-year – 47% cumulative
the 2nd 5-year - 53.5% cumulative
the 3rd 5-year – 38% cumulative
the 4th 5-year – 25% cumulative

Comm. Sanchez said this rate design is front loaded and a burden on current ratepayers and under burdening for the future ratepayers.

Comm. Duenas said his concern by lowering the front end is the improvement of service where ratepayers can see the investment.

Comm. .Sanchez said in past 10 years we have always hit coverage; GM said the debt service got better the 2nd 5-year. Comm. Sanchez said he believes that we can tolerate something less than 39% without adversely impacting CIP's.

The discussion centered around the debate of whether to stay with the 38% cumulative or to lower the rate in the plan to 32.5% Comm.Sanchez said he would like to move with the 32.5% to help ratepayers and GM Bordallo wanted to stay with the 38% to allow the utility to meet debt service coverage and prevent a spike.

Comm. Sanchez said with the 32.5% debt service coverage is covered and only 23M out of $400M in CIP will be delayed because it will help the ratepayers. He said if he wants to err, he would like to err on the side of the ratepayer because we have the true-up and the cash flow and if needed we can increase the rate in the future.

GM Bordallo recommended to stay with the 38% because it allows GWA to meet the targets of the indenture. Our goal is to maintain the 1.5 debt service coverage and prevents a spike.

Comm. Santos said that what if we stay with the 38% and then after the true-up if we can move it back down if needed.

Comm. Limtiaco asked about customer growth relative to the military and GM Bordallo said they are building their own water source.

Comm. Duenas said if we lower increase we have another major project with USEPA and it will force us to push it out further. Comm. Sanchez said it will give a reason to push it

Comm. Limtiaco asked the body to consider a 27.8% increase because it meets the debt service coverage and will not impact the ratepayers as much.

Comm. Guthertz asked management to translate the increases to dollars. GM Bordallo said for the residential customer bill at the end of the 5 years for the 38% with lifeline rates the average increase is

$13 cumulative; for the 32.5% it will increase by $12 cumulative; for the $27.75 it will increase by $7.15 cumulative.

GM Bordallo said that management does have an interest in cost savings. His point is that his higher priority is reliability before cost efficiency. He gave example of Navy water purchases

After a very long debate, the Chairman called for the question.

On the motion to approve the Resolution as written with the 38% scenario the vote was 3 ayes and 2 nays. The motion passed.

6. ANNOUNCEMENT

6.1 Next CCU Meetings: GWA WS 7/16; GPA WS 7/18; CCU MTG 7/23

The Chairman announced that the next CCU meeting would be a GWA work session on July 16, a GPA work session on July 18 and the regular monthly CCU meeting on July 23.

7. ADJOURNMENT

There being no other business to bring before the Commission, the meeting adjourned at 8:15 p.m.

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Attested

_____ _____

JOSEPH T. DUENAS, Chairman MICHAEL T. LIMTIACO Secretary

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

Regular Board Meeting
CCU Conference Room, Gloria B. Nelson Public Service Building
5:30 p.m., July 23, 2019

MINUTES

1. CALL TO ORDER

The Chairman called the CCU regular monthly meeting of the Consolidated Commission on Utilities for July 23, 2019 to order at 5:38 p.m. He said all five (5) Commissioners were present for a quorum. Others in attendance include:

Commissioners:

Joseph T. Duenas	CCU Chairman
Francis E. Santos	CCU Vice Chairman
Michael T. Limtiaco	CCU Secretary
Judith P. Guthertz	CCU Treasurer
Simon A. Sanchez	Commissioner

Executive Mgmt.:

Miguel Bordallo	GM / GWA
John Benavente	GM / GPA
Melinda Mafnas	AGMO / GPA
John Cruz	AGMET / GPA
Tricee Limtiaco	AGMA / GPA
Chris Budasi	AGMA / GWA
John Kim	CFO / GPA
Gilda Mafnas	CFO (A) / GWA
Kelly Clark	Legal Counsel / GWA
Graham Botha	Legal Counsel / GPA

Management & Staff:

Art Perez	Communication / GPA
Vangie Lujan	Compliance & Safety / GWA
Paul Kemp	AGM Compliance & Safety / GWA
Heidi Ballendorf	Communications / GWA
Zina Pangelinan-Charfaurros	Personnel Administrator / GWA
Jason Tudela	GWA
Dave Fletcher	GWA
Ron Topasna	O&M Mgr., Water Treatment / GWA
Vien Wong	IT / GPA
Joyce Sayama	Mgmt. Analyst / GPA Ex.Office
Ann Borja-Gallarde	Mgmt. Analyst / GWA Ex.Office
Lou Sablan	Board Secretary / CCU

Guest:

Irene Hicks	ABE
Dave Hick	ABE
Fred Keller	IT&E

Vivek	Tristar
Brian Park	Tristar
Mark Miller	Commissioner / PUC
Fred Horecky	ALJ / PUC

2. APPROVAL OF MINUTES

The Minutes of April 25, 2019 and May 28, 2019 were presented for approval.

Comm. Guthertz motioned to approve the Minutes subject to verification & written correction, second by Comm. Limitaco. There was no further discussion or objection and the motion passed unanimously.

3. COMMUNICATIONS

3.1 Public Comments – None

4. GWA

4.1 New Business

4.1.1 GM Report

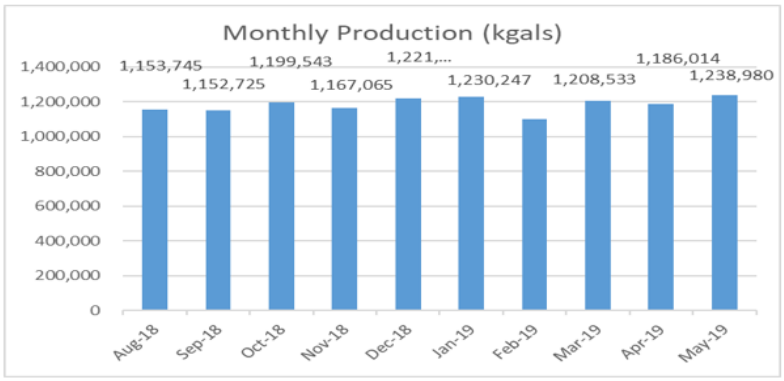
GM Bordallo said there was one item updated on the GM Report provided at the work session related to Waste Water Collection for May / June. While not discussed in detail at this meeting the GM Report which was provided at the GWA Work Session on 7/16 is provided here in detail for the record.

Operations Update

Production (May 2019)

Monthly Production Summary - May 2019				
Deep Wells			36.5	MGD
	Active wells =	102 of 120		
	Avg days in operation =	31 days		
	Total Production =	1,131,672 Kgals		
Springs			0.17	MGD
		31 days		
	Total Production =	5409 Kgals		
Ugum Surface Water Plant			2.3	MGD
	Avg days in operation =	31 days		
	Total Production =	71,736 Kgals		
Tumon Maui Well			0.97	MGD
	Avg days in operation =	31 days		
	Total Production =	30,163 Kgals		
		1,238,980 Kgals	40.0	MGD

DW Status as of 5/31/2019	
Active	102
Grounded motor or Pump Failure	5
Out of commission	8
Secured, PFOs	2
Temporarily Secured	1
Standby	2
TOTAL	120

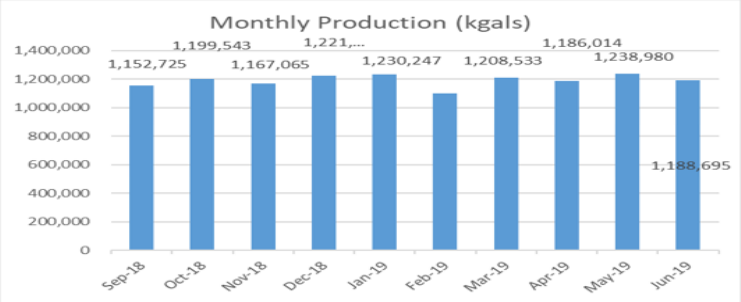


Operations Update

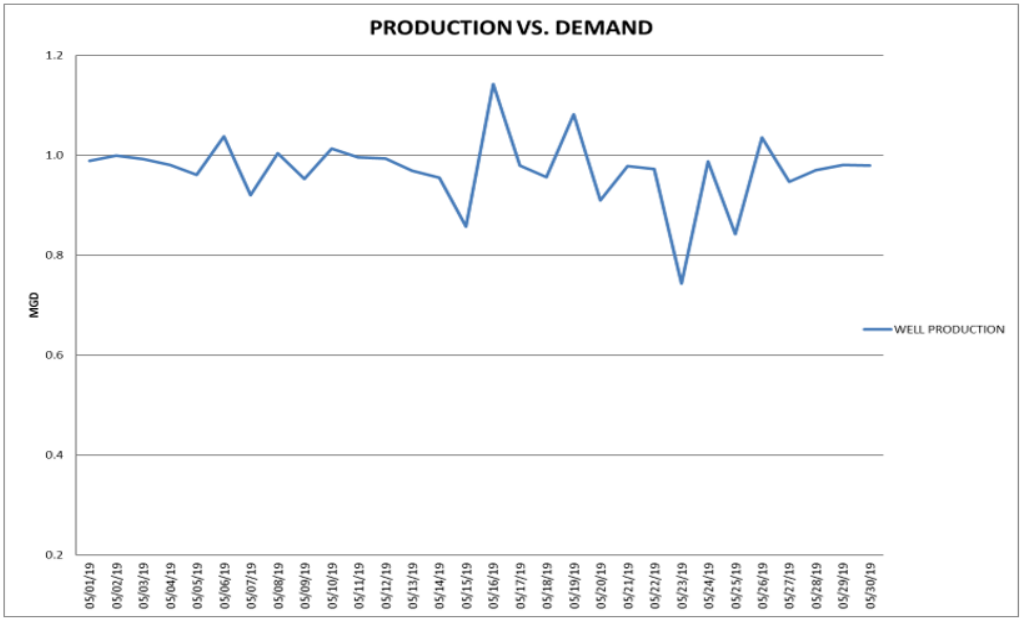
Production (June 2019)

Monthly Production Summary - June 2019					
Deep Wells				36.0	MGD
	Active wells =	103	of 120		
	Avg days in operation =	30	days		
	Total Production =	1,079,487	Kgals		
Springs				0.19	MGD
	Avg days in operation =	30	days	*placed on standby	
	Total Production =	5828	Kgals		
Ugum Surface Water Plant				2.4	MGD
	Avg days in operation =	30	days		
	Total Production =	71,489	Kgals		
Tumon Maui Well				0.97	MGD
	Avg days in operation =	30	days		
	Total Production =	29,210	Kgals		
		1,186,014	Kgals	39.5	MGD

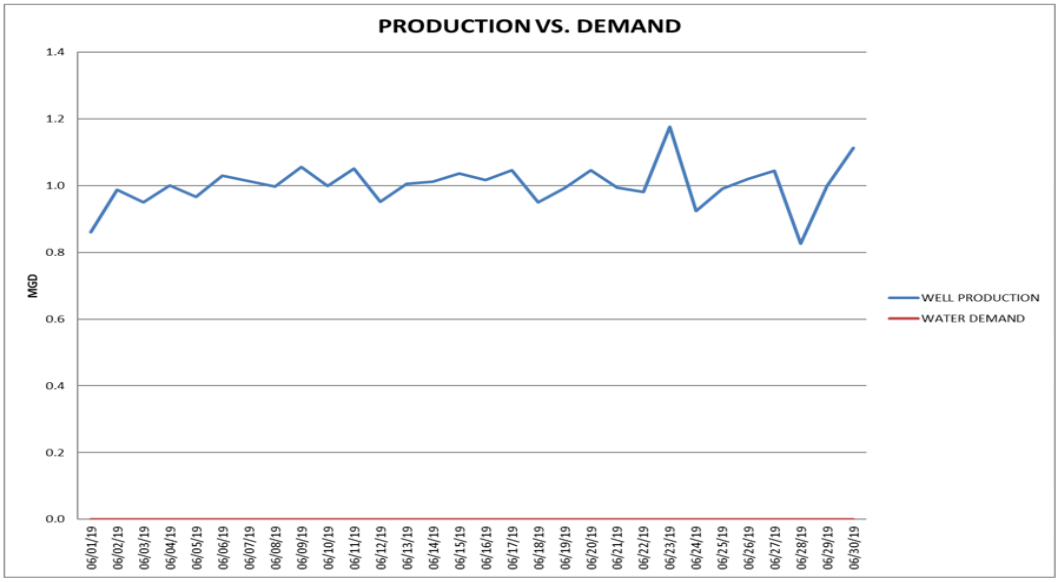
DW Status as of 6/30/2019	
Active	97
Grounded motor or Pump Failure	6
Out of commission	8
Secured, PFOs	2
Standby	7
TOTAL	120



Tumon Maui Well Production (May 2019)



Tumon Maui Well Production (June 2019)



4.1.2 Financials

The financial report was included in the meeting packet but were not discussed or questioned.

4.1.4 Resolution No. 38-FY2019 Approval of Fire Hydrant (Dry Barrel) Replacement Project

If approved Resolution 38-FY2019 will allow GWA to replace old, leaking or non-functioning fire hydrants (dry barrel type). GWA has approximately 3,800 fire hydrants throughout the island, specifically, Barrigada, Mangilao, Mongmong-Toto-Maite, Yona, Tamuning, Dededo and Chalan Pago, which were visually inspected and categorized by their condition ranging from "Excellent" to "Extremely Poor". GWA Water Distribution Operations has been able to replace approximately 300 wet barrel fire hydrants from the condition assessment list in several villages due to the simplicity of just changing out the hydrant body. Replacement of dry barrel fire hydrants, however, is more complicated as the work involves additional construction activities such as trenching, pipe and valve replacement, and pavement/concrete demolition and restoration. GWA crews are able to do these types of work activities however commitment of O&M operations crew would take time away from normal operations duties thus the procurement of a contractor to do the work was determined to be more effective for advancing the hydrant replacement program.

The lowest bid proposal submitted that was deemed responsive and responsible was by Mega United Corporation of One Million Two Hundred Forty-Two Thousand Six Hundred Seventy Dollars ($1,242,670.00). GWA management also seeks a ten percent (10%) contingency or One Hundred Twenty-Four Thousand Two Hundred Sixty-Seven Dollars ($124,267.00) to bring the total authorized funding request to One Million Three Hundred Sixty-Six Thousand Nine Hundred Thirty-Seven Dollars ($1,366,937.00) and will come from both bond and revenue funds. Anticipated completion date for the project is 365 days from the time the Notice to Proceed is issued.

Comm. Guthertz motioned to approve Resolution 38-FY2019 for discussion second by Comm. Sanchez

In discussion GM Bordallo gave an update on the number of hydrants being repaired / replaced. He confirmed that overall there are 1600 hydrants being replaced and of that 750 will be the target for the first 5 years. Comm. Guthertz asked about new developments if it's a private development the developer puts in the hydrants and it becomes maintenance for GWA. For government or new schools the contractor will install them and again GWA will maintain them. Comm. Guthertz commented that this is an amazing initiative because it keeps public safe. Comm. Limtiaco asked how many dry barrels will be replaced the first 5 years and GM Bordallo said 190.

On the motion there was no further discussion or objection and the motion passed unanimously.

4.1.5 Resolution No. 39-FY2019 Approval of Contract with Total Chemicals and JMI Edison Add'l Purchase of WasteWater Chemicals

This resolution will provide wastewater treatment chemicals to the Northern District and Hagåtña WWTPs for chemically enhanced primary treatment as required by USEPA and specified in § II A Paragraphs 2 and 5 of the 2011 Court Order, and to the Agat-Santa Rita Wastewater Treatment Plants for secondary treatment to ensure the reduction of solids and the discharge of effluent complying with permits for those facilities.

The total of the contract is Two Million Six Hundred Twenty-Seven Thousand Five Hundred Thirty-Six Dollars and Fifty-Six Cents ($2,627,536.56) for Inorganic Coagulant for three years based on an estimated annual consumption of 803,528 at $1.09 per pound with Total Chemical Resources, Inc. and One Million Sixty-Four Thousand Fifty-Three Dollars and Fifty-Three Cents ($1,064,053.53) for Anionic Polymer for three years based on the annual consumption of 111,763 at $1.16 per pound and Cationic Polymer at an annual consumption of 138,061 at $1.63 per pound with JMI Edison.

GWA management is also seeking a ten percent (10%) contingency in the amount of $262,753.66 for the contract with Total Chemicals bringing the total authorized funding to Two Million Eight Hundred Ninety Thousand Two Hundred Ninety Dollars and Twenty-Two Cents ($2,890,290.22) and an amount of $106,405.35 for the contract with JMI Edison which would bring the total authorized funding to One Million One Hundred Seventy Thousand Four Hundred Fifty-Eight Dollars and Eighty-Eight Cents ($1,170,458.88). The funding source for this procurement is O&M funds. The contract is for three (3) years with two (2) one (1) year options to renew.

Total Chemical Resources, Inc was awarded the bid for Inorganic Coagulant ("ACH"), JMI Edison was awarded the bid for Anionic Polymer and Cationic Polymer.

Comm. Guthertz motioned to approve Resolution 39-FY2019 second by Comm. Limtiaco. The motion carried and the vote was unanimous.

5. GPA

5.1 New Business

5.1.1 GM Report

The GM updated the Commission that there is no longer a protest on new power plant. They had 14 days to go to OPA and there was none. The GM said he plans to bring the bid results to the CCU in the August meeting. The GM congratulated GPWA 1st place on Liberation Parade. He said there is a presentation on LEAC but there really is no change. The CFO passed out hard copies of management's recommendation to the Commission for their review. The recommendation is to hold LEAC.

There was discussion on temporary streetlight as public service for funerals. GM Benavente described the service. The GM will give the CCU a summary on how many of these types of requests are handled annually.

Comm. Santos asked the difference between GPA SL or DPW SL The GM said the latter is metered and DPW pays for it. Other Gov SL are lights that some agencies pay. It was mentioned that GVB has their own streetlight that is metered.

Comm. Guthertz wants a copy of the streetlight map. Management will put this on CD and distribute to the Commission.

ACTION: Provide SL MAP to Comm. Judi Guthertz (Assignee(s): Melinda Mafnas; Due Date: 07/24/2019)

There was discussion on the history of streetlights and its appropriation. Comm. Sanchez said the legislature has not changed the fee; Comm. Duenas said DPW is not following standard on routed highways and shared areas / intersections that are very dark.

5.1.2 Financials

The usual financial report was provided in the packet but not discussed.

5.1.3 Resolution No. 2019-10 Diesel Fuel Oil #2 Contract

The Guam Power Authority's current contracts for Supply of Diesel Fuel Oil No.2 for the Baseload and Peaking Plants expire on December 31, 2019. The new fuel supply contracts are necessary to provide uninterrupted supply of fuel for the power plants.

These contract service the Baseload and Peaking Power Plants which were split into four (4) specified delivery sites:

Site Location 1 (Yigo CT and Aggreko)
Site Location 2 (Macheche CT and Dededo CT)
Site Location 3 (Piti 7)
Site Location 4 (Cabras 1&2, MEC 8&9, Manenggon Diesel Plant, and Talofofo Diesel Plant)

The aggregate cost for the two-year contract base period with *Mobil Oil Guam for Sites 1, 3 & 4* is $113,384,400 (subject to change depending on prevailing market price for diesel) of which $12,254,800.00 is for the Fixed Service Fee cost.

The total cost for the two-year contract base period with *IP&E Holdings, LLC for Site 2* is estimated at $33,280,000 (subject to change depending on prevailing market price for diesel) of which $3,536,000.00 is for the Fixed Service Fee cost.

The aggregate *contract value* for all the site locations for the two-year contract base period is estimated at $146,664,400 (subject to change depending on prevailing market price for diesel) of which *$15,790,800.00 is for the Fixed Service Fee cost*. LEAC will be the funding source and the contract is a two-year base period with three one-year extension options.

Comm. Sanchez motioned to approve Resolution 2019-10 second by Comm. Guthertz.

Comm. Santos asked how does the CCU get notified on fuel prices if the prices drop. GM Benavente said typically management gives the Commission this information once the prices are set.

On the motion there was no further discussion and the motion carried. The vote was unanimous.

5.1.4 Resolution No. 2019-11 Out of Service Inspection & Refurbishment of GPA Bulk Storage Fuel Tanks

If passed, this resolution will allow GPA\ to comply with regulatory requirements. GPA will comply with the regulatory requirements by procuring services for the bulk storage fuel tanks out of service inspection and refurbishment to ensure the structural integrity and safe operations of the tanks. The project also includes upgrading of the facility's auxiliary system to assure uninterrupted supply of fuel for the power plants. The last internal inspection was conducted in 2007 and inspections are required every ten (10) years. Upon completion of the project, they will be utilized to store ULSD fuel to supply Piti Power Plant 7 and upon ULSD conversion for Piti Power Plants 8 and 9 and the proposed 180 MW power plant.

On September 25, 2018 CCU approved Resolution 2018-20 authorizing GPA to solicit competitive bids for the Bulk Storage Fuel Tanks Out of Service Inspection and Refurbishment through an Invitation for Bid process and to petition the PUC for approval to issue bids to procure a contractor for the project. Then on October 25, 2018 the PUC approved GPA's petition to issue an Invitation for Bid related to the procurement of Bulk Storage Fuel Tanks Out of Service Inspection and Refurbishment.

The anticipated cost is $8,969,510.00 for Tristar Agility contract and will be funded by Cabras 3&4 insurance proceeds. It is anticipated that the project will take 24 months to complete beginning in August 2019 with completion in August 2021

Comm. Guthertz motioned to approve Resolution 2019-11 second by Comm. Sanchez.

Comm. Limtiaco questioned the types of fuel that we currently purchase. GM Benavente responded Ultra Low Sulfur Fuel and Low Sulfur Fuel. The Commissioner also asked what is the cost savings anticipated once the tanks are refurbished and GM Benavente said about $4M annually. For clarity, it was mentioned that the savings will not be realized until the new plant is place. GM Benavente gave a scenario of the planned phase in of the refurbished tanks saying that it has a lot to do with timing. It was mentioned that the refurbishment of the tanks will begin once approved by PUC. Once the refurbishment is done and the new plant is in commissioned, GPA will no longer need to rent storage tanks from a 3rd party.

Comm. Duenas commented that management needs to create a summary list of other things that have to be done such as the transmission line improvements or storage tanks at Okudu etc.

On the motion there was no further discussion and the motion carried; the vote was unanimous.

6. OTHER

6.1 Potential Ad Hoc CCU Committees

Chairman Duenas said that there is a suggestion made by Comm. Sanchez to form an Ad Hoc for Communications Committee, once the objectives are met the Committee will go away. Despite best efforts to provide info to ratepayers, they continue to have many questions about their services and how their services are affected by decisions and actions taken by utility employees, management and the CCU. In the past communication and public outreach efforts have been led by management with some involvement by the CCU. The CCU however are direct elected representatives of ratepayers and should assist management in improving public outreach To this end, Comm. Sanchez introduced the notion to create a subcommittee on Public Outreach and Communication, led by (2) CCU members.

Comm. Santos motioned to create Communication AdHoc Committee called Public Outreach and Communications Committee second by Comm Guthertz.

In discussion Chairman suggested Commissioners Sanchez and Guthertz as reps on the committee, they accepted.

On the motion there was no further discussion or objection and the motion carried unanimously.

6.2 CCU FOIA Responses

Comm. Duenas said there is a need to develop a Standard Operating Procedure to deal with FOIA responses from the Commission. Currently there is nothing in the law that speaks about this relative to Boards and Commissions Comm. Sanchez said that a policy should be formulated but for now the interim handlers for the FOIA responses should be our counsels.- for a GWA issue, the GWA counsel will respond; if for a GPA issue, the GPA's counsel will respond.

There was also discussion on who and what can be FOIA'd, it is Comm Duenas' position that FOIA's are for documents, a question cannot be part of a FOIA. Further the Commission can be FOIA'd but not individual commissioners. The CCU is a collective body made of (5) Commissioners and they Commission can be FOIA'd but the individual Commissioners cannot be FOIA'd.

Comm. Guthertz commented that she has worked with many boards and commissions and she has never had to respond as an individual for a FOIA. She agrees with Comm. Sanchez that the FOIA requests should be routed to the 2 legal counsels for a response.

Comm; Sanchez motioned to task the 2 legal counsels to develop a policy for the handling FOIA's for the Commission or its individual members, to research the legal standards therein and report back at the next regular meeting in August second by Comm. Guthertz.

It was mentioned that there are some FOIA's still pending responses and Counsel Kelly is already working with the Board Secretary to gather what was sent to the Commission after June 1.

On the motion, there was no further discussion and the motion carried. The vote was unanimous.

ACTION: Develop CCU SOP on how to respond to CCU FOIA's (Assignee(s): Kelly Clark, Graham Botha; Due Date: 08/27/2019)

6.3 GPA Drug Policy

GPA and GWA adopted a drug and alcohol policy in Oct. 2018 and then the AG, Barret-Anderson at the time opined that drug testing cannot be done to everyone. Her opinion was that you can test specific positions but not randomly test everyone.

Discussion followed Comm. Limtiaco said he has not seen any legal opinion and asked what is the opinion. Counsel Botha said that 80-90% of GPA's employees are randomly selected for testing via the DLS laboratory in Hawaii. Comm. Duenas said that GPA had a zero tolerance policy with the first offense being your last offense – 1x and you are out. Comm. Sanchez said that perhaps GPA should review GWA's policy to see if they want to something similar. Comm. Duenas said maybe counsel should go back to the AG to ask for his opinion re the 100% random testing.

ACTION: To get AG's opinion on 100% random testing (Assignee(s): Graham Botha; Due Date: 08/27/2019)

7. ANNOUNCEMENTS

7.1 Next CCU Meetings

The Chairman announced that the next meeting would be a work session for GWA on August 20 , a work session for GPA on August 22 and the regular monthly CCU meeting on August 27th.

8. ADJOURNMENT

There being no other business to bring before the Commission, the meeting adjourned at 6:41 p.m.

\\s\\
Bls

Attested

_____	_____
JOSEPH T. DUENAS, Chairman	MICHAEL T. LIMTIACO Secretary

GUAM WATERWORKS AUTHORITY

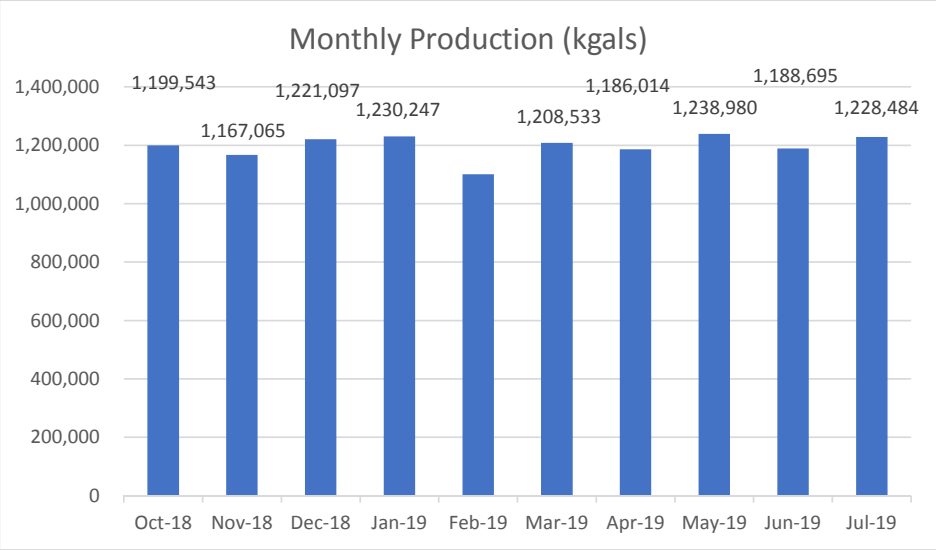
Management Report
GWA CCU Board Meeting, August 27, 2019

Operations Update

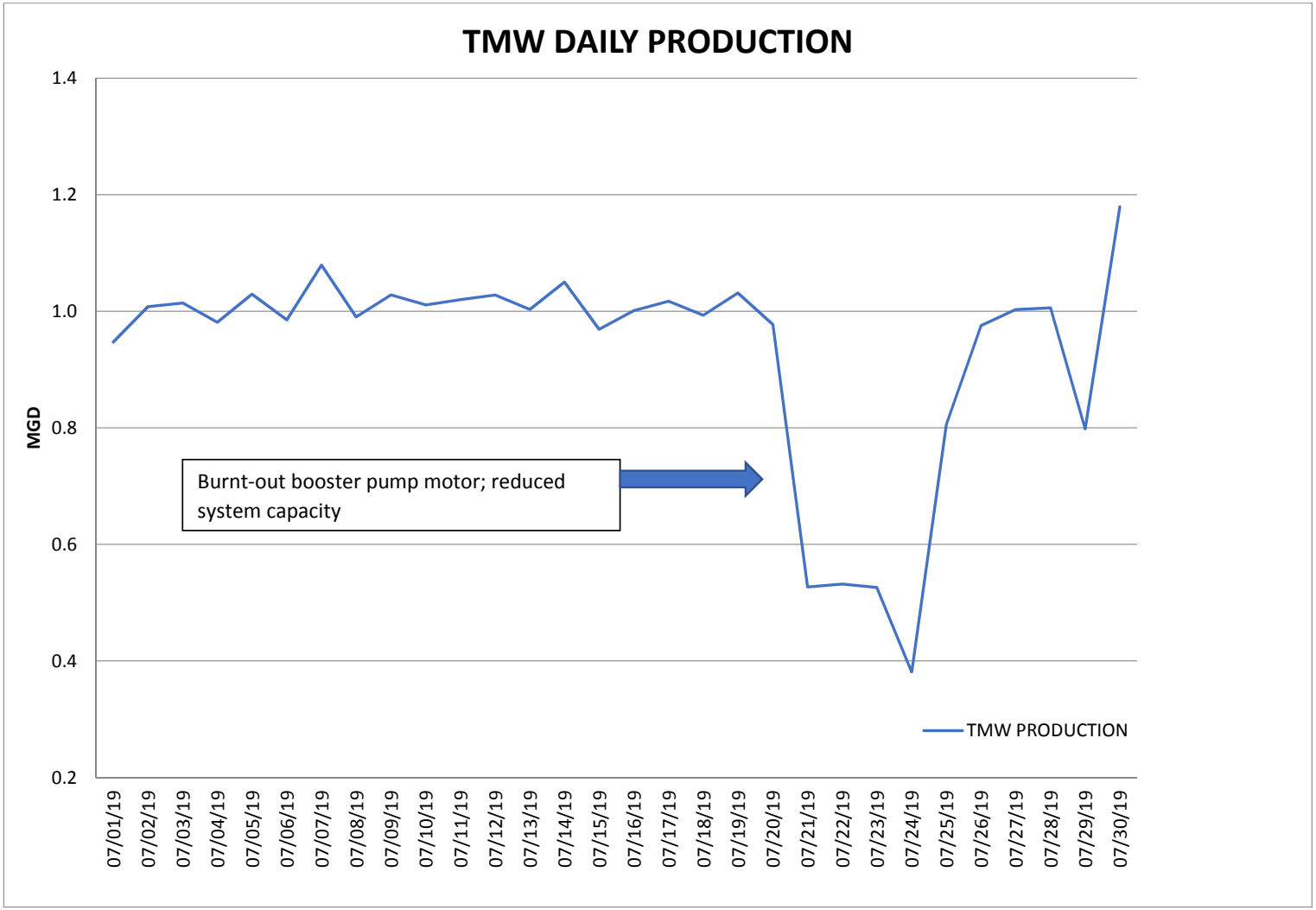
Production (July 2019)

Monthly Production Summary - July 2019					
Deep Wells				36.3	MGD
	Active wells =	102	of 120		
	Avg days in operation =	31	days		
	Total Production =	1,125,579	Kgals		
Springs				0.11	MGD
	Avg days in operation =	31	days		
	Total Production =	3558	Kgals		
Ugum Surface Water Plant				2.3	MGD
	Avg days in operation =	31	days		
	Total Production =	70,485	Kgals		
Tumon Maui Well				0.93	MGD
	Avg days in operation =	31	days		
	Total Production =	28,862	Kgals		
		1,228,484	Kgals	39.6	MGD

DW Status as of 7/31/2019		
Active	102	
Grounded motor or Pump Failure	3	A26-D03-F06
Out of commission	8	A02-A07-A28-D05-D13-M14-MJ01-MJ05
Secured, PFOs	2	A23-A25
Standby	5	A29-D24-F09-F18-M17B
TOTAL	120	



Tumon Maui Well Production (July 2019)

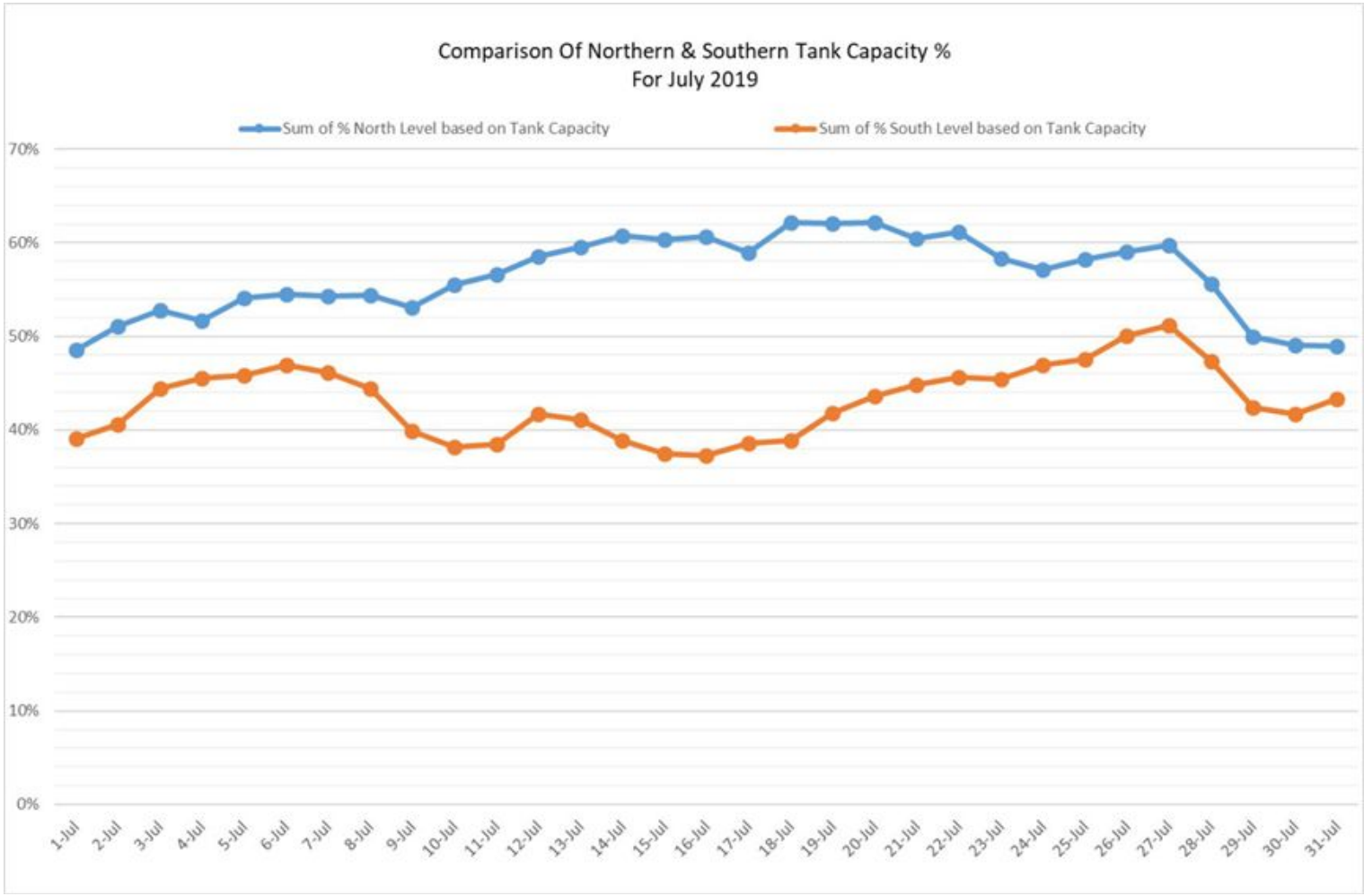


Distribution (July 2019)

Monthly Distribution Summary - July 2019					
Water Booster Pump Stations					
	District	No. of Stations	Total Pumps	Pumps Operating	% Operational
	Northern	11	20	18	90.0%
	Central	7	15	15	100.0%
	Southern	7	15	15	100.0%
		25	50	48	96.0%

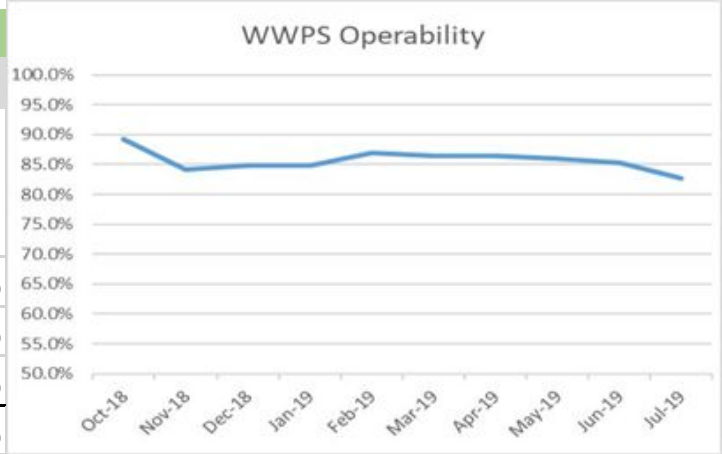


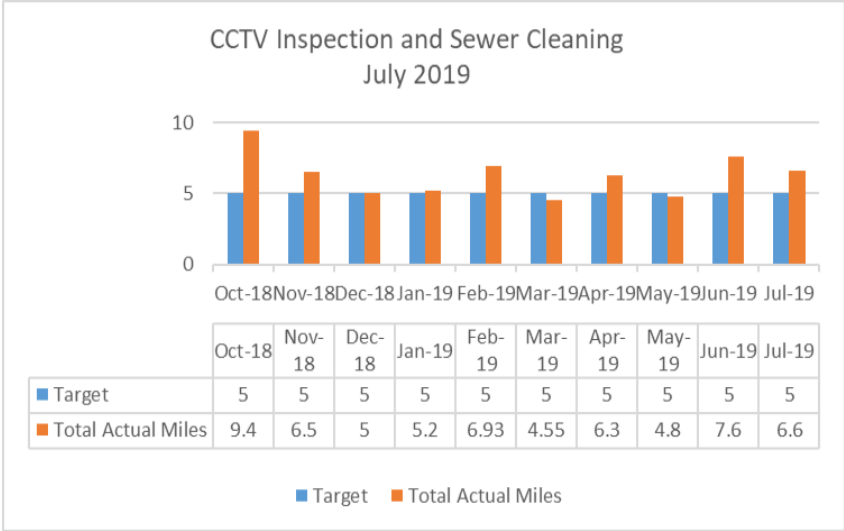
Distribution – Tank Levels (July 2019)



Wastewater Collections (July 2019)

Monthly Collections Summary - July 2019					
Wastewater Pump Stations					
	District	No. of Stations	Total Pumps	Pumps Operating	% Operational
	Northern	22	52	42	80.8%
	Central	29	63	52	82.5%
	Southern	27	58	49	84.5%
		78	173	143	82.7%





	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19
Target	5	5	5	5	5	5	5	5	5	5
Total Actual Miles	9.4	6.5	5	5.2	6.93	4.55	6.3	4.8	7.6	6.6

Wastewater Collections –Cleaning/Jetting (July 2019)

Astumbo, Dededo (by Fire Station)



Astumbo Gardens, Dededo



Carlos Heights, Tamuning

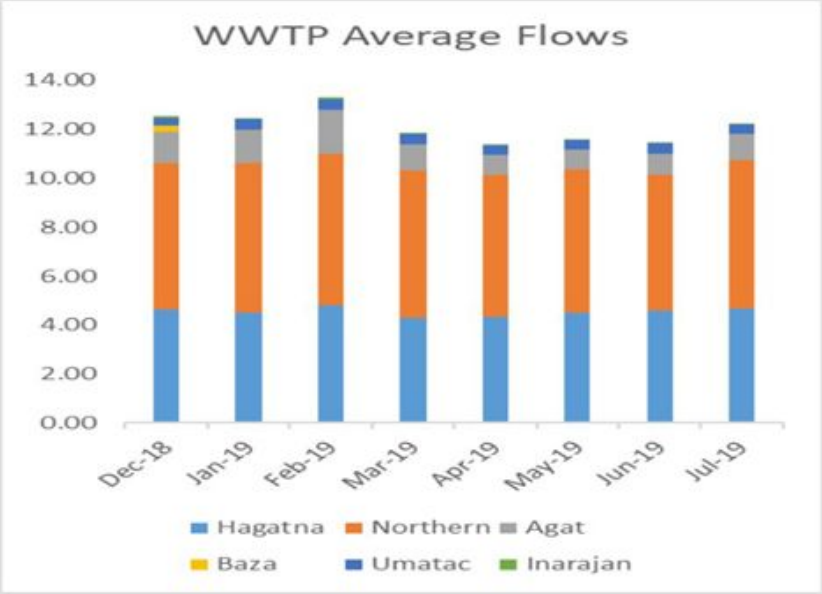


Harmon Industrial Park

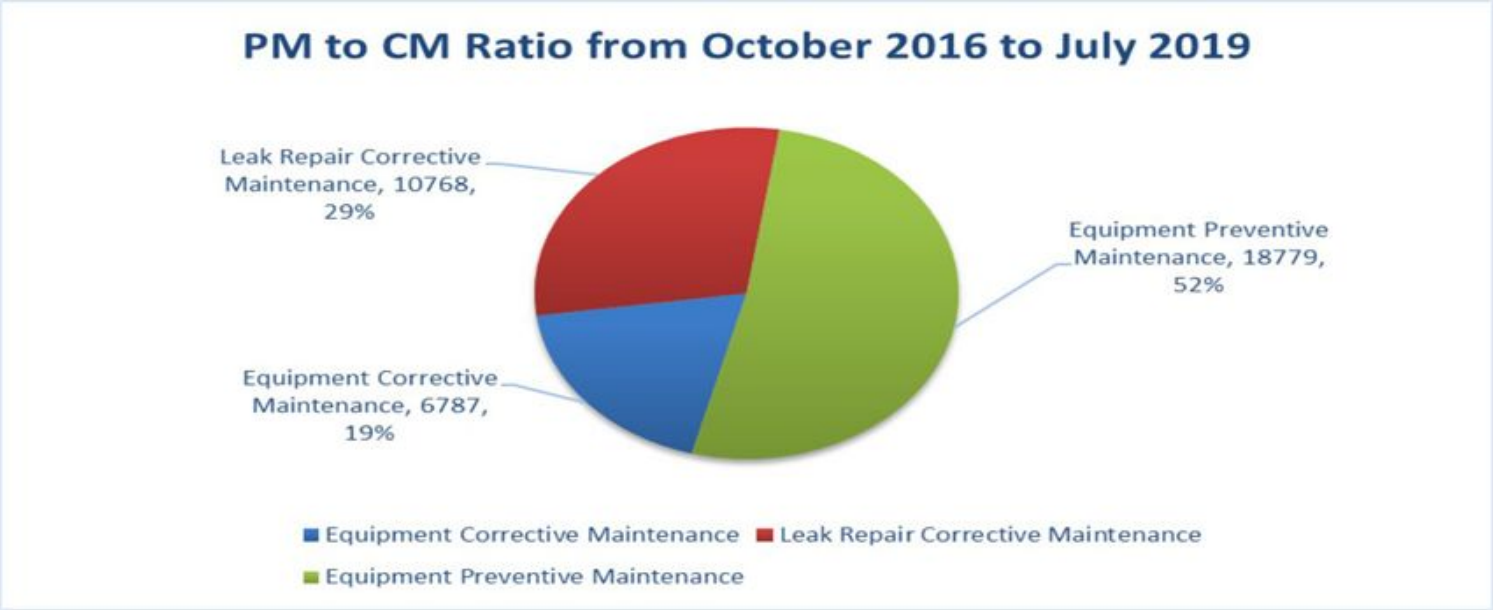


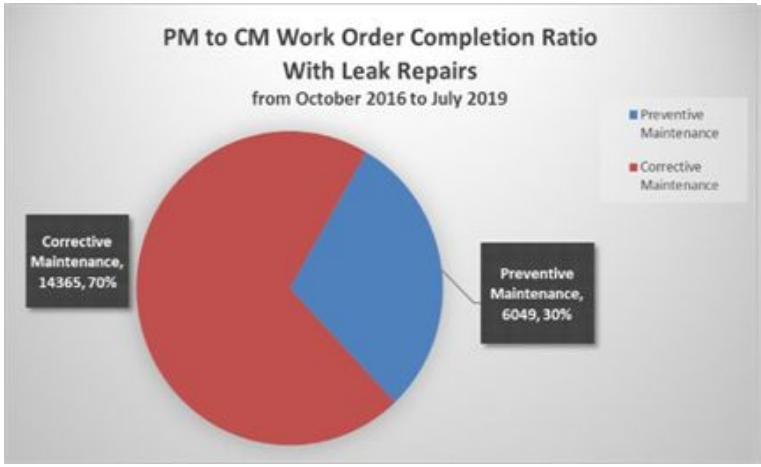
Wastewater Treatment (July 2019)

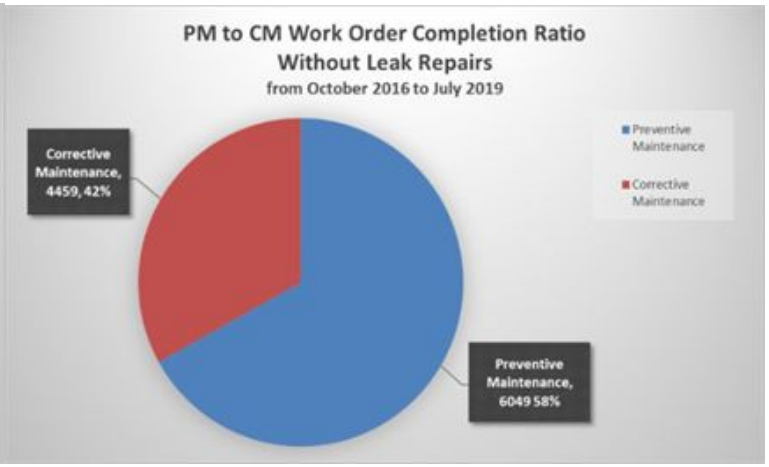
Monthly Wastewater Treatment Summary - July 2019				
WW Treatment Plants - Flows				
	Facility	**Avg. Daily Flows (MGD)**	**Sludge (lbs)**	**Sludge Disp. ($)**
	Hagatna	4.69	511,700	$ 46,053
	Northern	6.04	735,260	$ 66,173
	Agat	1.06		
	Baza	0		
	Umatac	0.39		
	Inarajan	0.05		
		12.23	1,246,960	$ 112,226



Asset Management (July 2019)







Operational Issues

Production & Distribution

- Issues with Yigo production were resolved end of June and reservoir level improvements seen in early July. No major production issues.
- Continuing with increased security monitoring after hours due to attempted wire thefts
- Ugum WTP:
    - Membrane changeouts on-going
    - CIP in planning stages

Wastewater Collection & Treatment

- Pump stations
    - Route 1 pump stations and bypasses continue to be an on-going challenge
    - Asan by-pass pumps were changed out in early July to larger pumps; GPA assisted with change to 3-phase service
    - Piti pump station being operated manually to manage flows and in coordination with contractor's work in Asan
    - WW Hills pump station required warranty repairs on two of three pumps; repairs completed.
- Collection System:
    - Piti Sewer / Storm Water Interconnection
    - DPW, GEPA and GWA Working to resolve interconnection which has resulted in impacts to private property
    - Wet-weather complicating efforts to maintain flows
    - Piti pump station manual operation and bypass pumping also make this issue challenging
- NDWWTP
    - Oil & Grease discharged into plant from neighboring lot (CoreTech)
    - Temporarily impacted treatment process at the plant
    - Investigation by GWA staff with cooperation from CoreTech identified their on-site lift station as source of oil & grease
- Hagatna WWTP
    - Corrective maintenance on process equipment is on-going (mixers, aerators and gates for effluent pumps)
    - Working to get resolved before any major storm events
- EPA Inspections: inspections were conducted at
    - Several pump stations,
    - Umatac-Merizo WWTP
    - Agat-Santa Rita WWTP: inspector commented that WWTP was best he has seen anywhere in U.S.

Meters from January 2017 through July 2019

COMPLETED FIELD ACTIVITY JAN 2017 THRU JULY 2019 (POSTED IN CIS)	2017	2018	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	TOTAL:	COMPLETED FIELD ACTIVITIES (IN PROCESS) TO BE POSTED IN CIS
GWA - Test Meter	5206	12191	1330	759	717	1317	664	703	326	23213	203
GWA - Meter Exchange	6487	13353	158	140	444	1583	1212	922	862	25161	5
TOTAL:	11693	25544	1488	899	1161	2900	1876	1625	1188	48374	208

# OF METERS TESTED AS PER METER TEST FACILITY REPORTS:	6079	12259	937	730	518	1231	1135	621	643	24153

# OF FIELD CREW PERFORMING CHANGE OUTS:	19.4	16.1	1	1	10	8	7	7	7
# OF ADMIN STAFF TO CREATE AND POST FIELD ACTIVITIES IN CIS	10	6.3	0	0	4	9	6	6	7
# OF SUPPLY STAFF TO ISSUE MATERIALS AND PROGRAM NEW METERS:	2	2	0	0	2	2	2	2	1
# OF TEST FACILITY PERSONNEL TESTING METERS:	3	2	2	2	2	2	3	3	3
TOTAL:	36.4	29.4	8	8	21	23	19	21	22

REMAINING ACTIVE BADGER LP MODELS AS OF July 31, 2019: 7165

Stock #	Size	Meter Description	New Meters	Passed Field Meters	MMP	Meters Available	Meters at MTF	Total Count
60484	3/4"	METER, Badger AMR 5/8" X 3/4" RCDL Model M25 Disc Meter	37	0	0	37	18	55
74131	3/4"	METER, Badger AMR 5/8" x 3/4" **WARRANTY** RCDL Model M25	0	0		0	0	0
65293	3/4"	METER,Badger 5/8"x3/4" NSF61-G RCDL M25LL Disc Meter Integral	52	2	0	54	0	54
74131	3/4"	METER, Badger AMR 5/8" x 3/4" RCDL Model M25 ***RMI***	0			0	13	13
84769	3/4"	METER, Badger E-SERIES 5/8"X3/4" ULTRASONIC	975			975	5	980

Backbilling through July 31, 2019

Guam Waterworks Authority

Collections Report* on Accounts Backbilled thru July 31, 2019

For fiscal years 2015, 2016, 2017 and 2019 (Jul 31)

	Meter Changeout Period									
	FY2016		FY2017		FY2018		FY2019		TOTAL	
	No. of Accounts	Amount	No. of Accounts	Amount	No. of Accounts	Amount	No. of Accounts	Amount	No. of Accounts	Amount
FY2015										
FY2016	17	$ 882	0	$ -	0	$ -	0	$ -	17	$ 882
FY2017	0	$ -	535	$ 396,667	2	$ 578	0	$ -	537	$ 397,245
FY2018	0	$ -	1,335	$ 732,446	39	$ 9,664	0	$ -	1,374	$ 742,109
FY2019	0	$ -	492	$ 226,547	3,663	$1,721,944	3,183	$747,367	7,338	$2,695,857
Total Billed	**17**	**$ 882**	**2,362**	**$1,355,659**	**3,704**	**$1,732,186**	**3,183**	**$747,367**	**9,266**	**$3,836,094**

	Account Status														
	Total Collected			Current - Not Yet Due			Total Adjusted			Total Uncollected (Active)			Total Uncollected		
	No. of Accounts	Amount	%	No. of Accounts	Amount	%	No. of Accounts	Amount	%	No. of Accounts	Amount	%	No. of Accounts	Amount	%
FY2015															
FY2016	17	$ 882	100%												
FY2017	486	310,431	78%	0	-	-	14	16,257	4%	16	50,244	13%	22	20,517	5%
FY2018	1,262	576,876	78%	0	-	-	41	50,543	7%	28	79,318	11%	43	35,373	5%
FY2019	6,346	1,380,171	51%	355	773,351	29%	69	61,273	2%	435	410,390	15%	134	70,745	3%
Total Collected	**8,111**	**$2,268,360**		**355**	**$773,351**		**124**	**$128,074**		**479**	**$ 539,952**		**199**	**$126,635**	
Collection Ratio		**59%**			**20%**			**3%**			**14%**			**3%**	

* Collections thru August 14, 2019

One Guam Update

- Santa Rosa Tank
  - No update on AAFB response to request for data substantiating operational improvements.
  - GWA to proceed with Santa Rosa Tank project with intertie up to AF property – no delay to the GWA project

- GAC Changeout
  - Scheduled after completion of GIAA; should be completed in August

- Navy Water Billing
  - Change in DoD funding: eliminated 'working capital fund' for FY20 to 'General Fund'
  - No more annual stabilized commodity rates
  - Funding **must be received in advance of service**; on quarterly basis for recurring products/services

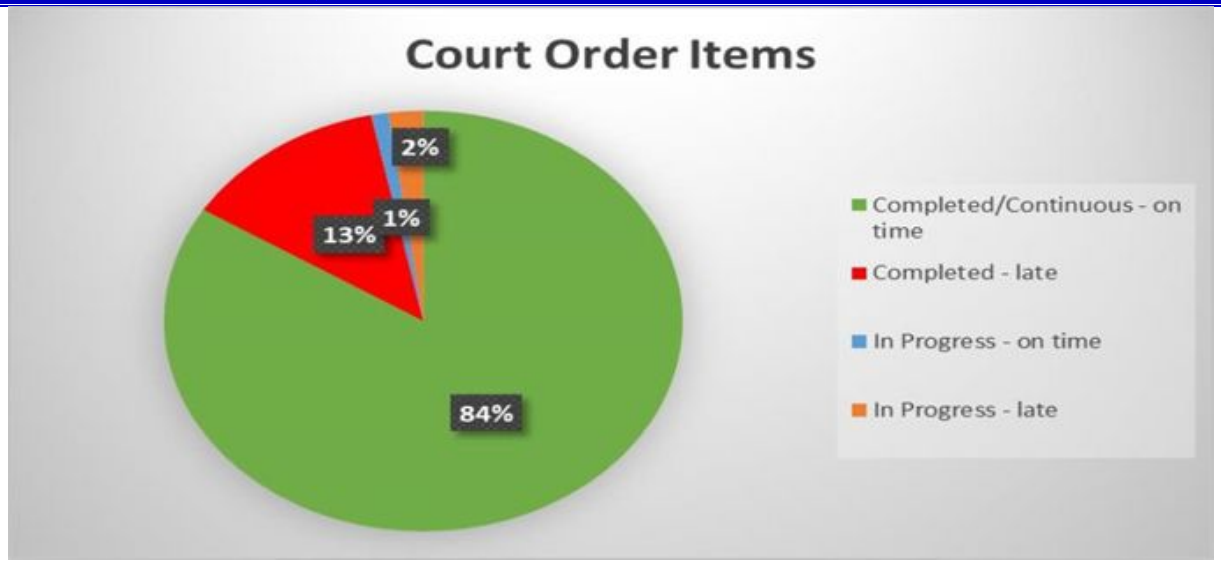
UTILITIES	FY19 Rate	FY20 WCF [1]	FY20 GF [2]	FY20 WCF to GF Delta
Electricity ($/MWH)	$203.53	$317.61	$397.52	$79.91
Potable Water ($/KGAL)	$10.18	$10.66	$9.13	($1.53)
Steam ($/MBTU)	$82.40	$117.37	$158.51	$41.14
Sewage NBG ($/KGAL)	$18.09	$22.75	$33.57	$10.82
Sewage AAFB ($/KGAL)	$18.09	$22.75	$21.19	($1.56)
Demin/Pure Water ($/GAL)	$0.47	-	$0.38	

$3.01/kgal GWA lifeline cost
$10.73/kgal above 5k

- PUC Rate Case Intervention
  - Navy Consultant engaged to review the matter
  - GWA provided presentation on August 22nd
  - Still waiting on Navy's decision

Court Order

	Items	On-time Items Completed/Continuous	Items Delayed	Completed Late	Items on Schedule	Performance %
Court order total	**93**	**78**	**2**	**12**	**1**	**97.8%**



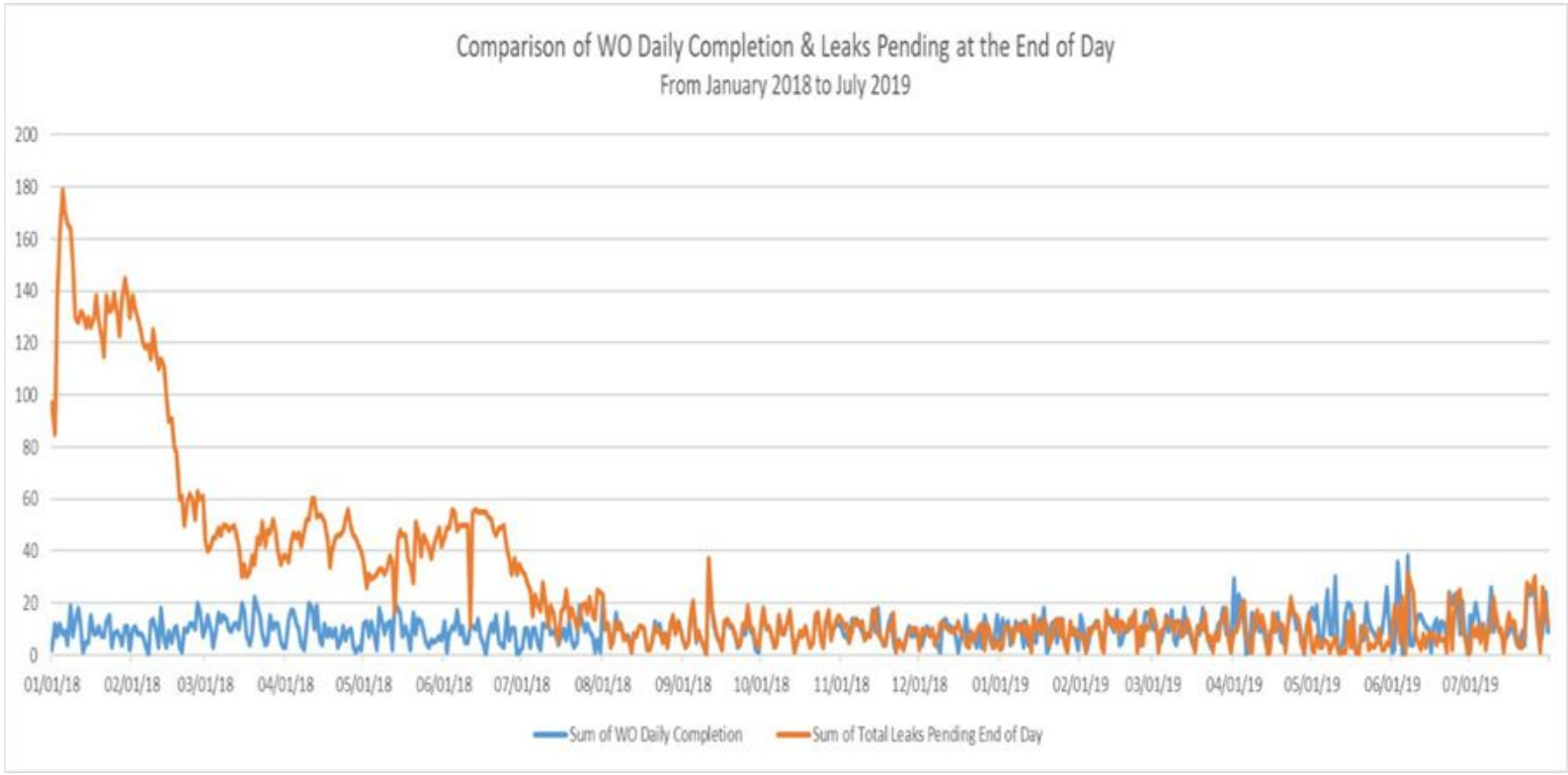
Status Information

- 2 items delayed
  - Water Reservoir Repair. Replacement or Relocation program, CO II C 29(b)(6)(i) – (10 additional tanks by 7th CO anniversary). (Affects final date of the Court Order.)
  - Umatac-Merizo Wastewater Treatment Plant – July/August 2019
- Final Date to complete all Court Order items may be delayed past December 31, 2020. [CO 29(b) has been expanded by 31% beyond the original Court Order Requirements (General Counsel is reviewing filing requirements and content).]
- Overflow or Bypass events reported to USEPA:
  - 08-03-2019, Umatac TP (Bypass) continues
  - 08-04-2019 Vietnam Veterans Memorial Highway, Barrigada [manhole across from Wendy's] (rain)
  - (Note: GWA has contracted security services that continue to prevent well-site break-ins.)

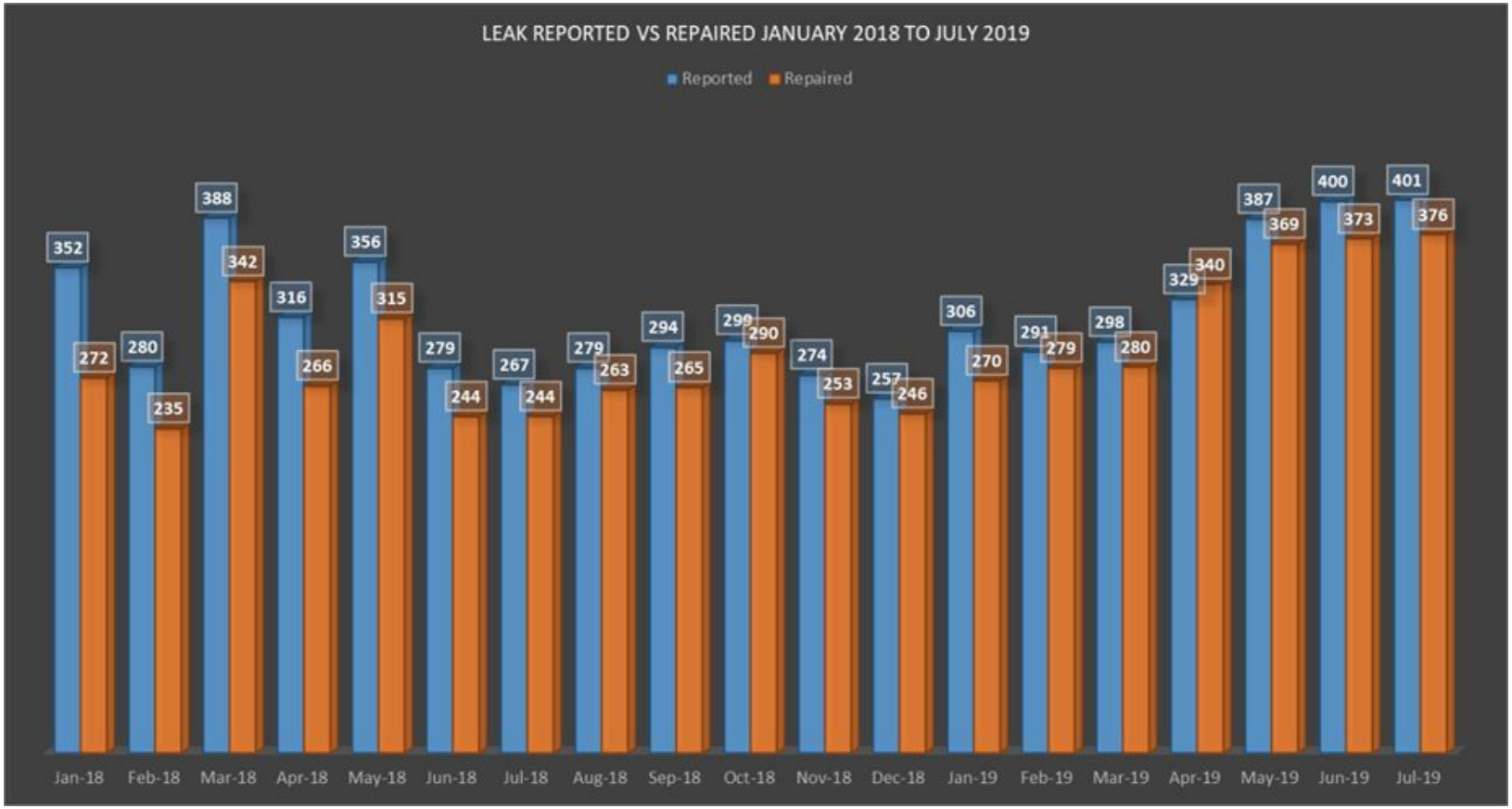
Land Acquisition Summary (as of July 2019)

GWA Facility	Location	Gov. or Private Property	Land Acquisition Status
Tanks	Astumbo	Gov't. - CLTC	GWA and DLM working together on Land Registration process. Pending Notification of surrounding lot owner information from DLM.
	Piti	Private	License Agreement for Piti Tank that fall on Dept. of Park Services property currently under DOI review 07/17/19.
Deep Wells	AG-12	Dept. of Agriculture/Manhita Farms	Right of Entry Agreement sent to Dept of AG for signature 05/24/18. 2nd follow up sent on 09/12/18. 3rd follow up sent on 04/10/19. Retracement Survey Property Map with DLM for review 03/06/19. Retracement Survey Property Map with DLM for final approval 06/05/19.
Booster Pump Station	Agfayan	Private	Authorization Form to perform appraisal and investigative services for L28, B19, T3734, Inarajan signed by CLTC 10/29/2018.
Sewer Pump Stations	2nd Adjacent Property to Southern Link	Private	Escrow & Title Land Purchase Accepted 06/03/19. Change Order 4 for Parceling Property Survey Map approved 06/26/19.
Asan Springs	Asan	Federal	License Agreement for Asan Springs facility that fall on Dept. of Park Services property currently under DOI review.

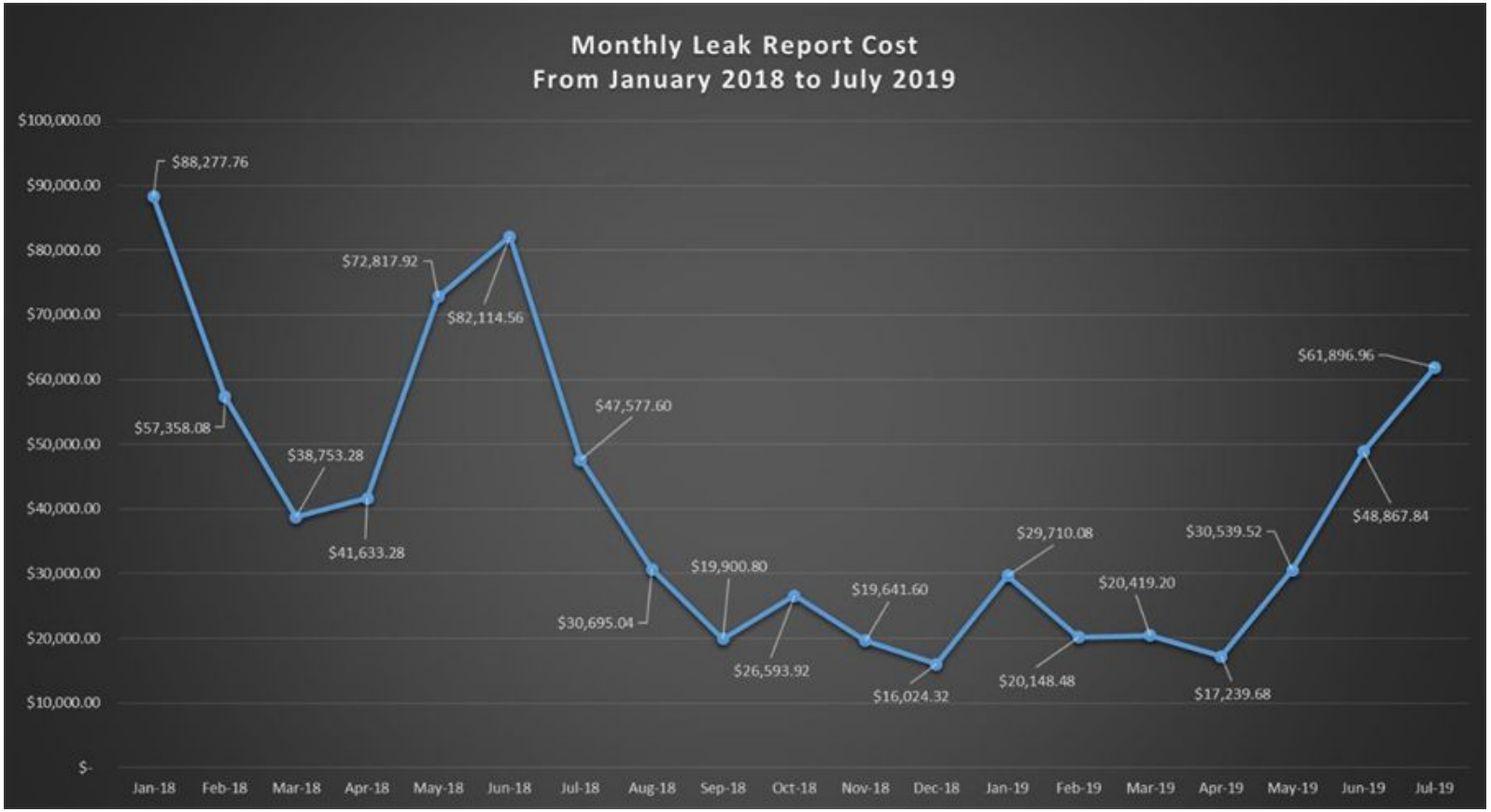
Leak Repair Summary (July 2019)



Comparison of Leaks Reported vs. Leaks Repaired (July 2019)



Monthly Leak Report Cost (July 2019)



Assumptions:

1. Leak rate = 4 gpm
2. Cost per kgal = $4.00

GUAM WATERWORKS AUTHORITY
JULY 31, 2019
FINANCIAL AND RELATED REPORTS
TABLE OF CONTENTS

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INCOME STATEMENT MTD ACTUALS FY19 VS FY18	C	4
INCOME STATEMENT YTD ACTUALS VS YTD BUDGET	D	5
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SCHEDULE of CASH RESTRICTED/UNRESTRICTED	F	7
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SYSTEM DEVELOPMENT CHARGES PROJECT STATUS	H	9

GUAM WATERWORKS AUTHORITY
Balance Sheet
July 31, 2019

SCHEDULE A

ASSETS AND DEFERRED OUTFLOWS of RESOURCES	Unaudited July 31, 2019	Audited September 30, 2018	Increase/ (Decrease)
Current Assets			
Cash			
Unrestricted (Schedule F)	6,434,778	3,094,379	3,340,399
Restricted Funds (Schedule F)	85,163,641	84,228,994	934,646
Accounts Receivable Trade, Net of Allowance for Doubtful Receivables of $7,350,407 at Jul 31, 2019 and $5,516,077 at Sep 30, 2018	13,989,289	16,610,663	(2,621,374)
Federal Receivable	514,564	3,837,148	(3,322,583)
Other Receivable	1,832,288.30	1,330,798	501,491
Materials & Supplies Inventory, Net of Allowance for Obsolescence of $64,131 at Jul 31, 2019 and $64,131 at Sep 30, 2018	2,866,419	3,342,557	(476,138)
Total Current Assets	110,800,979	112,444,540	(1,643,560)
Property, Plant and Equipment			
Utility plant in service			
Water system	369,153,475	348,812,303	20,341,171
Wastewater system	300,407,082	300,053,427	353,655
Non-utility property	22,080,853	21,720,023	360,830
Total property	691,641,409	670,585,753	21,055,656
Less Accumulated Depreciation	(320,518,942)	(303,019,447)	(17,499,495)
Land	3,914,815	3,681,120	233,695
Construction Work in Progress	223,898,113	178,443,926	45,454,187
Property, Plant and Equipment, net	598,935,395	549,691,352	49,244,042
Other noncurrent assets			
Restricted cash (Schedule F)	117,346,734	159,753,667	(42,406,933)
Investments (Schedule F)	38,001,295	43,097,913	(5,096,618)
Other Prepaid Expenses	954,555	677,828	276,727
Total other noncurrent assets	156,302,584	203,529,408	(47,226,823)
Total Assets	866,038,958	865,665,299	373,659
Deferred outflows of resources			
Debt defeasance due to bond refunding	12,115,448	12,810,787	(695,339)
Deferred outflows from pension	4,220,075	4,220,075	0
Deferred outflows from OPEB	9,070,814	9,070,814	(0)
Total Assets and Deferred Outflows of Resources	**891,445,295**	**891,766,975**	**(321,680)**
LIABILITIES, DEFERRED INFLOWS of RESOURCES AND NET ASSETS			
Current Liabilities			
Current maturities of long-term debt			
Series 2010 Bond	1,895,000	1,800,000	95,000
Series 2013 Bond	2,695,000	-	2,695,000
Series 2014 Refunding	3,760,000	3,620,000	140,000
Series 2016	420,000	-	420,000
Series 2017 Refunding	-	295,000	(295,000)
Notes Payable	2,866,745	3,203,870	(337,125)
Accounts Payable -Trade	2,832,866	4,467,102	(1,634,237)
Accrued and Other Liabilities	1,220,094	1,081,895	138,200
Interest Payable	2,117,099	6,427,669	(4,310,570)
Accrued Payroll and Employee Benefits	1,149,892	1,608,219	(458,327)
Accrued Annual Leave	1,059,161	1,059,161	-
Current portion of employee annual leave	607,382	607,382	-
Contractors' Payable	10,868,977	25,680,792	(14,811,815)
Customer and Other Deposits	2,353,445	2,131,242	222,203
Total Current Liabilities	33,845,661	51,982,331	(18,136,670)
Long Term Debt, less current maturities			
Series 2010 Revenue Bond	-	1,895,000	(1,895,000)
Series 2013 Revenue Bond	169,935,000	172,630,000	(2,695,000)
Series 2014 Refunding Bond	65,140,000	68,900,000	(3,760,000)
Series 2016 Revenue Bond	142,890,000	143,310,000	(420,000)
Series 2017 Refunding Bond	107,365,000	107,365,000	-
Unamortized Bond Premium/Discount	32,103,530	33,300,619	(1,197,089)
Notes Payable	-	2,325,154	(2,325,154)
Net pension liability	45,451,352	45,451,352	-
Net OPEB obligation	88,950,661	88,950,661	-
Employee Annual Leave, Less Current Portion	822,821	822,821	-
Total Liabilities	686,504,025	716,932,938	(30,428,913)
Deferred inflows of resources:			
Deferred inflows from pension	1,857,164	1,857,164	-
Deferred inflows from OPEB	8,741,900	8,741,900	(0)
Total Liabilities and Deferred Inflows of Resources	697,103,088	727,532,002	(30,428,914)
Net Assets	**194,342,207**	**164,234,973**	**30,107,234**
Total Liabilities, Deferred Inflows of Resources and Net Assets	**891,445,295**	**891,766,975**	**(321,680)**

GUAM WATERWORKS AUTHORITY
Statement of Operations and Retained Earnings **SCHEDULE B**
Comparative Budget vs. Actual for the period ending July 31, 2019

	Month to Date		Variance
	Budget July-19	Actual (Unaudited) July-19	Favorable/ (Unfavorable)
OPERATING REVENUES			
Water Revenues	5,813,246	5,903,203	89,956
Wastewater Revenues	3,247,265	3,614,959	367,694
Legislative Surcharge	294,667	313,711	19,044
Other Revenues	38,254	40,290	2,036
System Development Charge	97,773	98,196	424
Total Operating Revenues	9,491,205	9,970,360	479,155
OPERATING AND MAINTENANCE EXPENSES			
Water Purchases	592,577	501,096	91,481
Power Purchases	1,326,315	1,322,496	3,819
Total Utility Costs	1,918,892	1,823,592	95,300
Salaries and Wages	1,782,365	1,461,055	321,310
Pension and Benefits	562,238	458,157	104,081
Total Salaries and Benefits	2,344,603	1,919,212	425,391
Capitalized Labor and Benefits	(308,333)	(280,661)	(27,672)
Net Salaries and Benefits	2,036,269	1,638,551	397,719
Administrative and General Expenses			
Sludge removal	143,771	142,100	1,672
Chemicals	179,801	179,005	796
Materials & Supplies	130,606	130,329	277
Transportation	75,648	75,393	255
Communications	25,054	24,935	120
Claims	8,417	5,469	2,948
Insurance	79,461	77,860	1,601
Training & Travel	15,417	14,971	446
Advertising	2,500	1,637	863
Miscellaneous	80,632	79,716	916
Regulatory Expense	31,029	30,960	69
Bad Debts Provision	202,148	201,719	429
Total Administrative and General Expense	974,483	964,094	10,389
Depreciation Expense	1,759,065	1,667,910	91,155
Contractual Expense			
Audit & Computer Maint.	90,783	89,019	1,764
Building rental	38,361	35,412	2,949
Equipment rental	79,980	72,872	7,108
Legal	512	-	512
Laboratory	34,862	27,188	7,674
Other	181,458	164,930	16,527
Total Contractual Expense	425,956	389,421	36,535
Retiree Supp. Annuities and health care costs	249,871	238,872	10,999
Contribution to Government of Guam	51,975	50,000	1,975
Total Retiree Benefits	301,846	288,872	12,974
Total Operating Expenses	7,416,512	6,772,440	644,072
Earnings (Loss) from Operations	2,074,693	3,197,920	1,123,227
Interest Income-2010/13/14/16/17 Series Bond	84,943	319,552	234,609
Interest Income-Other Funds	13,856	70,010	56,154
Interest Income-SDC	2,072	14,294	12,222
Interest Expense- 2010/13/14/16/17 Series Bond	(2,387,785)	(2,117,099)	270,686
Interest Expense- ST BOG	(19,762)	(13,991)	5,771
Federal Expenditures	-	-	-
Loss on Asset Disposal	-	-	-
AFUDC	1,157,306	1,157,306	0
Amortization of Discount, Premium and Issuance Costs	(17,798)	119,709	137,507
Defeasance due to bond refunding	(16,201)	(69,534)	(53,333)
Deferred outflows from pension	-	-	-
Prior Year Adjustment	-	(31,680)	(31,680)
Total non-operating revenues (expenses)	(1,183,369)	(551,432)	631,936
Net Income (Loss) before capital contributions	891,324	2,646,487	1,755,163
Capital Contributions			
Grants from US Government	5,533,205	1,714,737	(3,818,468)
Grants from GovGuam & Others	-	2,500	2,500
Total Capital Contributions	5,533,205	1,717,237	(3,815,968)
Change in Net Assets	6,424,529	4,363,725	(2,060,805)
Debt Service Calculation			
Earnings From Operations	2,074,693	3,197,920	
System Development Charge	(97,773)	(98,196)	
Retiree COLA	51,975	50,000	
Interest/Investment Income	13,856	70,010	
Depreciation	1,759,065	1,667,910	
Balance Available for Debt Service per Section 6.12	3,801,817	4,887,644	
Working Capital Reserve Available for Debt Service	934,811	960,540	
Transfer to Working Capital- Debt Service Reserve	-	-	
Transfer to Working Capital- O&M Reserve	-	-	
Balance Available for Debt Service inclusive of reserves	4,736,628	5,848,184	
Debt Service			
Principal	476,250	476,250	
Interest	2,137,785	2,137,785	
Total	2,614,035	2,614,035	
Debt Service Coverage (1.25X)- per Section 6.12 (Indenture)	1.45	1.87	
Debt Service Coverage (1.75X) inclusive of reserves (PUC)	1.81	2.24	

GUAM WATERWORKS AUTHORITY
Statement of Operations and Retained Earnings **SCHEDULE C**
Comparative for the period ending July 31, 2019 and 2018

	Month to Date		Variance
	Actual (Unaudited) July-19	Actual (Audited) July-18	Increase/ (Decrease)
OPERATING REVENUES			
Water Revenues	5,903,203	5,531,297	371,906
Wastewater Revenues	3,614,959	3,191,784	423,176
Legislative Surcharge	313,711	289,209	24,502
Other Revenues	40,290	43,294	(3,004)
System Development Charge	98,196	89,249	8,947
Total Operating Revenues	9,970,360	9,144,833	825,527
OPERATING AND MAINTENANCE EXPENSES			
Water Purchases	501,096	723,748	(222,652)
Power Purchases	1,322,496	1,223,874	98,622
Total Utility Costs	1,823,592	1,947,622	(124,030)
Salaries and Wages	1,461,055	1,464,423	(3,368)
Pension and Benefits	458,157	376,266	81,891
Total Salaries and Benefits	1,919,212	1,840,689	78,523
Capitalized Labor and Benefits	(280,661)	(296,147)	15,486
Net Salaries and Benefits	1,638,551	1,544,542	94,009
Administrative and General Expenses			
Sludge removal	142,100	125,638	16,462
Chemicals	179,005	182,625	(3,620)
Materials & Supplies	130,329	180,995	(50,666)
Transportation	75,393	64,001	11,392
Communications	24,935	14,756	10,179
Claims	5,469	10,803	(5,334)
Insurance	77,860	76,005	1,855
Training & Travel	14,971	22,652	(7,681)
Advertising	1,637	14,226	(12,589)
Miscellaneous	79,716	84,564	(4,848)
Regulatory Expense	30,960	22,121	8,839
Bad Debts Provision	201,719	180,246	21,473
Total Administrative and General Expense	964,094	978,632	(14,538)
Depreciation Expense	1,667,910	1,606,687	61,223
Contractual Expense			
Audit & Computer Maint.	89,019	58,815	30,204
Building rental	35,412	36,603	(1,191)
Equipment rental	72,872	89,207	(16,335)
Legal	-	-	-
Laboratory	27,188	34,441	(7,253)
Other	164,930	200,655	(35,725)
Total Contractual Expense	389,421	419,721	(30,300)
Retiree Supp. Annuities and health care costs	238,872	662,581	(423,709)
Contribution to Government of Guam	50,000	49,833	167
Total Retiree Benefits	288,872	712,414	(423,542)
Total Operating Expenses	6,772,440	7,209,618	(437,178)
Earnings (Loss) from Operations	3,197,920	1,935,214	1,262,706
Interest Income-2010/13/14/16/17 Series Bond	319,552	255,374	64,178
Interest Income-Other Funds	70,010	45,645	24,365
Interest Income-SDC	14,294	13,852	442
Interest Expense- 2010/13/14/16/17 Series Bond	(2,117,099)	(2,177,468)	60,369
Interest Expense- ST BOG	(13,991)	(30,702)	16,711
Federal Expenditures	-	(62,220)	62,220
Loss on Asset Disposal	-	(162,136)	162,136
AFUDC	1,157,306	1,041,766	115,540
Amortization of Discount, Premium and Issuance Costs	119,709	(42,691)	162,400
Defeasance due to bond refunding	(69,534)	(62,043)	(7,490)
Deferred outflows from pension	-	32,592	(32,592)
Prior Year Adjustment	(31,680)	13,219	(44,899)
Total non-operating revenues (expenses)	(551,432)	(1,134,813)	583,380
Net Income (Loss) before capital contributions	2,646,487	800,402	1,846,086
Capital Contributions			
Grants from US Government	1,714,737	1,244,712	470,025
Grants from GovGuam & Others	2,500	22,681	(20,181)
Total Capital Contributions	1,717,237	1,267,392	449,845
Change in Net Assets	4,363,725	2,067,794	2,295,931
Debt Service Calculation			
Earnings From Operations	3,197,920	1,935,214	
System Development Charge	(98,196)	(89,249)	
Retiree COLA	50,000	49,833	
Interest/Investment Income	70,010	45,645	
Depreciation	1,667,910	1,606,687	
Balance Available for Debt Service per Section 6.12	4,887,644	3,548,131	
Working Capital Reserve Available for Debt Service	960,540	945,164	
Transfer to Working Capital- Debt Service Reserve	-	-	
Transfer to Working Capital- O&M Reserve	-	-	
Balance Available for Debt Service inclusive of reserves	5,848,184	4,493,295	
Debt Service			
Principal	476,250	433,333	
Interest	2,137,785	1,794,910	
Total	2,614,035	2,228,243	
Debt Service Coverage (1.25X)- per Section 6.12 (Indenture)	1.87	1.59	
Debt Service Coverage (1.75X) inclusive of reserves (PUC)	2.24	2.02	

GUAM WATERWORKS AUTHORITY
Statement of Operations and Retained Earnings **SCHEDULE D**
Comparative Budget vs. Actual for the period ending July 31, 2019

	Year to Date		Variance
	Budget July-19	Actual (Unaudited) July-19	Favorable/ (Unfavorable)
OPERATING REVENUES			
Water Revenues	58,132,464	56,188,056	(1,944,408)
Wastewater Revenues	32,472,650	32,582,906	110,255
Legislative Surcharge	2,946,668	2,940,443	(6,225)
Other Revenues	382,538	561,508	178,970
System Development Charge	977,725	753,705	(224,020)
Total Operating Revenues	94,912,046	93,026,618	(1,885,428)
OPERATING AND MAINTENANCE EXPENSES			
Water Purchases	5,955,772	5,110,179	845,593
Power Purchases	13,233,151	13,224,957	8,194
Total Utility Costs	19,188,923	18,335,136	853,787
Salaries and Wages	17,823,651	16,019,541	1,804,109
Pension and Benefits	5,622,377	5,092,893	529,484
Total Salaries and Benefits	23,446,028	21,112,434	2,333,594
Capitalized Labor and Benefits	(3,083,333)	(2,660,368)	(422,965)
Net Salaries and Benefits	20,362,695	18,452,066	1,910,628
Administrative and General Expenses			
Sludge removal	1,257,713	1,246,801	10,912
Chemicals	1,723,014	1,722,415	599
Materials & Supplies	1,886,056	1,844,862	41,193
Transportation	531,475	531,167	308
Communications	150,541	136,793	13,748
Claims	74,167	49,901	24,265
Insurance	794,608	759,705	34,903
Training & Travel	274,166	238,992	35,175
Advertising	125,000	102,441	22,559
Miscellaneous	838,317	837,059	1,258
Regulatory Expense	250,290	168,810	81,480
Bad Debts Provision	1,839,483	1,834,228	5,254
Total Administrative and General Expense	9,744,831	9,473,177	271,654
Depreciation Expense	17,590,650	17,499,495	91,154
Contractual Expense			
Audit & Computer Maint.	602,833	599,128	3,706
Building rental	377,610	352,309	25,301
Equipment rental	950,796	946,851	3,945
Legal	11,121	10,754	367
Laboratory	227,624	227,096	528
Other	2,089,580	2,036,140	53,440
Total Contractual Expense	4,259,564	4,172,279	87,286
Retiree Supp. Annuities and health care costs	2,498,708	2,376,257	122,451
Contribution to Government of Guam	519,750	500,000	19,750
Total Retiree Benefits	3,018,458	2,876,257	142,201
Total Operating Expenses	74,165,121	70,808,410	3,356,710
Earnings (Loss) from Operations	20,746,925	22,218,208	1,471,282
Interest Income-2010/13/14/16/17 Series Bond	849,430	3,410,842	2,561,412
Interest Income-Other Funds	138,562	698,586	560,024
Interest Income-SDC	20,718	145,239	124,521
Interest Expense- 2010/13/14/16/17 Series Bond	(23,877,846)	(21,357,160)	2,520,686
Interest Expense- ST BOG	(197,620)	(173,406)	24,213
Federal Expenditures	-	-	-
Loss on Asset Disposal	-	-	-
AFUDC	11,573,060	11,573,060	(0)
Amortization of Discount, Premium and Issuance Costs	(177,979)	1,197,089	1,375,068
Defeasance due to bond refunding	(162,010)	(695,339)	(533,329)
Deferred outflows from pension	-	-	-
Prior Year Adjustment	-	(311,072)	(311,072)
Total non-operating revenues (expenses)	(11,833,684)	(5,512,162)	6,321,522
Net Income (Loss) before capital contributions	8,913,241	16,706,046	7,792,805
Capital Contributions			
Grants from US Government	55,332,051	13,319,909	(42,012,141)
Grants from GovGuam & Others	-	81,279	81,279
Total Capital Contributions	55,332,051	13,401,188	(41,930,863)
Change in Net Assets	64,245,292	30,107,234	(34,138,058)
Debt Service Calculation			
Earnings From Operations	20,746,925	22,218,208	
System Development Charge	(977,725)	(753,705)	
Retiree COLA	519,750	500,000	
Interest/Investment Income	138,562	698,586	
Depreciation	17,590,650	17,499,495	
Balance Available for Debt Service per Section 6.12	38,018,162	40,162,584	
Working Capital Reserve Available for Debt Service	9,348,111	9,605,396	
Transfer to Working Capital- Debt Service Reserve	-	-	
Transfer to Working Capital- O&M Reserve	-	-	
Balance Available for Debt Service inclusive of reserves	47,366,273	49,767,980	
Debt Service			
Principal	4,762,500	4,762,500	
Interest	21,377,846	21,377,846	
Total	26,140,346	26,140,346	
Debt Service Coverage (1.25X)- per Section 6.12 (Indenture)	1.45	1.54	
Debt Service Coverage (1.75X) inclusive of reserves (PUC)	1.81	1.90	

GUAM WATERWORKS AUTHORITY
Statement of Operations and Retained Earnings
Comparative for the period ending July 31, 2019 and 2018

SCHEDULE E

	Year to Date		Variance
	Actual (Unaudited) July-19	Actual (Audited) July-18	Increase/ (Decrease)
OPERATING REVENUES			
Water Revenues	56,188,056	55,312,970	875,086
Wastewater Revenues	32,582,906	31,917,838	665,068
Legislative Surcharge	2,940,443	2,892,090	48,353
Other Revenues	561,508	432,941	128,568
System Development Charge	753,705	892,488	(138,782)
Total Operating Revenues	93,026,618	91,448,325	1,578,293
OPERATING AND MAINTENANCE EXPENSES			
Water Purchases	5,110,179	7,237,478	(2,127,299)
Power Purchases	13,224,957	12,238,739	986,218
Total Utility Costs	18,335,136	19,476,217	(1,141,081)
Salaries and Wages	16,019,541	14,644,233	1,375,308
Pension and Benefits	5,092,893	3,762,660	1,330,233
Total Salaries and Benefits	21,112,434	18,406,893	2,705,541
Capitalized Labor and Benefits	(2,660,368)	(2,961,470)	301,102
Net Salaries and Benefits	18,452,066	15,445,423	3,006,643
Administrative and General Expenses			
Sludge removal	1,246,801	1,256,378	(9,577)
Chemicals	1,722,415	1,826,255	(103,839)
Materials & Supplies	1,844,862	1,809,948	34,914
Transportation	531,167	640,008	(108,841)
Communications	136,793	147,555	(10,762)
Claims	49,901	108,034	(58,133)
Insurance	759,705	760,050	(345)
Training & Travel	238,992	226,521	12,470
Advertising	102,441	142,257	(39,816)
Miscellaneous	837,059	845,641	(8,582)
Regulatory Expense	168,810	221,212	(52,402)
Bad Debts Provision	1,834,228	1,802,458	31,770
Total Administrative and General Expense	9,473,177	9,786,319	(313,142)
Depreciation Expense	17,499,495	16,066,874	1,432,621
Contractual Expense			
Audit & Computer Maint.	599,128	588,150	10,978
Building rental	352,309	366,030	(13,721)
Equipment rental	946,851	892,068	54,783
Legal	10,754	-	10,754
Laboratory	227,096	344,413	(117,317)
Other	2,036,140	2,006,548	29,592
Total Contractual Expense	4,172,279	4,197,209	(24,931)
Retiree Supp. Annuities and health care costs	2,376,257	6,625,806	(4,249,548)
Contribution to Government of Guam	500,000	498,333	1,667
Total Retiree Benefits	2,876,257	7,124,139	(4,247,882)
Total Operating Expenses	70,808,410	72,096,182	(1,287,772)
Earnings (Loss) from Operations	22,218,208	19,352,143	2,866,064
Interest Income-2010/13/14/16/17 Series Bond	3,410,842	2,553,742	857,101
Interest Income-Other Funds	698,586	456,448	242,137
Interest Income-SDC	145,239	138,518	6,722
Interest Expense- 2010/13/14/16/17 Series Bond	(21,357,160)	(21,774,678)	417,518
Interest Expense- ST BOG	(173,406)	(307,022)	133,616
Federal Expenditures	-	(622,203)	622,203
Loss on Asset Disposal	-	(1,621,358)	1,621,358
AFUDC	11,573,060	10,417,664	1,155,396
Amortization of Discount, Premium and Issuance Costs	1,197,089	(426,912)	1,624,001
Defeasance due to bond refunding	(695,339)	(620,435)	(74,905)
Deferred outflows from pension	-	325,920	(325,920)
Prior Year Adjustment	(311,072)	132,190	(443,263)
Total non-operating revenues (expenses)	(5,512,162)	(11,348,127)	5,835,966
Net Income (Loss) before capital contributions	16,706,046	8,004,016	8,702,030
Capital Contributions			
Grants from US Government	13,319,909	12,447,118	872,791
Grants from GovGuam & Others	81,279	226,805	(145,526)
Total Capital Contributions	13,401,188	12,673,923	727,265
Change in Net Assets	30,107,234	20,677,939	9,429,295
Debt Service Calculation			
Earnings From Operations	22,218,208	19,352,143	
System Development Charge	(753,705)	(892,488)	
Retiree COLA	500,000	498,333	
Interest/Investment Income	698,586	456,448	
Depreciation	17,499,495	16,066,874	
Balance Available for Debt Service per Section 6.12	40,162,584	35,481,312	
Working Capital Reserve Available for Debt Service	9,605,396	9,451,639	
Transfer to Working Capital- Debt Service Reserve	-	-	
Transfer to Working Capital- O&M Reserve	-	-	
Balance Available for Debt Service inclusive of reserves	49,767,980	44,932,951	
Debt Service			
Principal	4,762,500	4,333,333	
Interest	21,377,846	17,949,100	
Total	26,140,346	22,282,433	
Debt Service Coverage (1.25X)- per Section 6.12 (Indenture)	1.54	1.59	
Debt Service Coverage (1.75X) inclusive of reserves (PUC)	1.90	2.02	

GUAM WATERWORKS AUTHORITY
Restricted and Unrestricted Cash Summary
FY2019

SCHEDULE F

Description	Unaudited July 31, 2019	Audited September 30, 2018	Variance Increase/ (Decrease)
UNRESTRICTED			
Change Fund	2,000	2,000	-
Petty Cash	4,450	5,000	(550)
BOG Deposit Accounts	6,428,328	3,087,379	3,340,949
Sub-total Unrestricted	**6,434,778**	**3,094,379**	**3,340,399**
RESTRICTED			
Bank Pacific	11,153	11,864	(711)
Bank of Hawaii	161,470	189,144	(27,674)
Community First FCU	2,854	4,392	(1,538)
First Hawaiian Bank	12,674	22,105	(9,431)
Bank Pacific Surcharge	763,090	298,898	464,192
Bank Pacific Escrow Deposit	836,212	660,254	175,958
BOG Customer Refunds	1,868,380	1,860,120	8,259
BOG Emergency Reserve Fund	6,235	6,229	6
BOG Sewer Hookup Revolving Fund	66,615	65,499	1,116
BOG Subordinate Security Fund	859,233	859,233	-
BOG Operation and Maintenance Fund	3,083,482	3,083,482	-
BOG OMRRRF Fund	17,423,213	17,423,213	-
BOG Revenue Trust	251,510	360,569	(109,059)
BOG Revenue Trust Fund	8,141,147	6,535,779	1,605,368
BOG Capital Improvement Revenue Fund	6,386,311	1,582,278	4,804,033
BOG O & M Reserve	13,888,427	13,666,109	222,318
BOG Debt Service Reserve	11,526,476	11,341,967	184,509
BOG CapEx Fund	9,762,777	16,073,011	(6,310,233)
	75,051,260	**74,044,147**	**1,007,114**
BOG - SDC Deposit	2,362,380	2,934,848	(572,467)
BOG - SDC CDs	7,750,000	7,250,000	500,000
Total SDC	**10,112,380**	**10,184,848**	**(72,467)**
Total Restricted	**85,163,641**	**84,228,994**	**934,646**
Reserve Funds			
BOG Series 13 Construction Fund	15,697,276	36,222,062	(20,524,787)
BOG Series 14 Refunding Construction Fund	322,911	741,895	(418,984)
BOG Series 16 Construction Fund	94,540,641	116,036,000	(21,495,359)
BOG Series 17 Refunding Construction Fund	6,785,906	6,753,709	32,197
Total Restricted - Held by Trustee	**117,346,734**	**159,753,667**	**(42,406,933)**
USB Series 2013 Debt Service Fund	1,073,736	2,360,451	(1,286,715)
USB Series 2013 Debt Service Reserve Fund	12,031,688	12,031,688	-
USB Series 2014 Refunding Debt Service Fund	682,279	1,833,235	(1,150,956)
USB Series 2014 Refunding Debt Service Reserve Fund	7,698,328	7,972,243	(273,915)
USB Series 2016 Debt Service Fund	679,976	1,805,556	(1,125,579)
USB Series 2016 Debt Service Reserve Fund	7,591,999	7,594,603	(2,603)
USB Series 2010 Debt Service Fund	191,023	503,751	(312,728)
USB Series 2017 Refunding Debt Service Reserve Fund	7,566,460	7,566,460	-
USB Series 2017 Debt Service Fund	485,804	1,429,927	(944,122)
Total Investments	**38,001,295**	**43,097,913**	**(5,096,618)**
Total Restricted and Unrestricted Cash	**246,946,447**	**290,174,953**	**(43,228,506)**

Guam Waterworks Authority
Accounts Receivable - Government (Active)
July 31, 2019

SCHEDULE G

		AGING					
Customer Name	**No of Accounts**	**Current**	**31-60 days**	**61-90 days**	**91-120 days**	**Over 120 days**	**Total**
Guam Int'l Airport Authority	8	$ 49,959	$ 55,668	$ 30,728	$ 8,828	$ 224,298	$ 369,480
Guam Power Authority	24	125,090	0	-	-	-	125,090
Guam Community College	3	3,269	3,524	2,411	-	-	9,204
Guam Memorial Hospital Authority	3	2,463	2,054	-	-	-	4,518
Port Authority of Guam	5	1,257	-	-	-	-	1,257
Guam Housing & Urban Renewal Authority	9	613	-	-	-	-	613
Total Autonomous Agencies	**52**	**$ 182,652**	**$ 61,246**	**$ 33,139**	**$ 8,828**	**$ 224,298**	**$ 510,163**
Department of Education	53	$ 194,880	$ 213,552	$ 204,516	$ 163,091	$ 6,834	$ 782,873
Mayors Council of Guam	60	23,098	5,947	3,577	21,841	38,877	93,341
Department of Public Health & Social Services	8	1,500	1,132	531	479	86,184	89,827
Department of Corrections	8	69,787	107	-	-	-	69,894
Department of Parks & Recreation	17	36,408	4,439	1,302	733	-	42,881
Office of the Governor	2	12,731	9,634	2,076	-	-	24,442
University of Guam	44	14,000	-	-	-	-	14,000
Guam Fire Department	11	12,204	-	-	-	-	12,204
Guam Waterworks Authority	71	12,045	47	-	-	-	12,093
Sanctuary Inc	1	3,364	-	-	-	-	3,364
Department of Military Affairs/GUARNG	1	2,795	-	-	-	-	2,795
Department of Agriculture	6	2,162	-	-	-	-	2,162
Department of Public Works	11	1,563	-	-	-	-	1,563
Guam Police Department	7	1,042	-	-	-	-	1,042
Division of Senior Citizens, DPH&SS	2	581	181	170	-	-	932
Department of Chamorro Affairs	7	868	-	-	-	-	868
Office of Civil Defense	2	444	75	-	-	-	519
Guam Public Library	6	465	-	-	-	-	465
Department of Administration	2	415	-	-	-	-	415
Guam Veterans Affairs Office	2	405	-	-	-	-	405
The Office of The Dededo Mayor	1	166	-	-	-	-	166
Merizo Mayor	1	52	-	-	-	-	52
Vietnam Veteran of America	1	29	-	-	-	-	29
Guam Housing Corporation	1	29	-	-	-	-	29
Total Line Agencies	**325**	**$ 391,034**	**$ 235,115**	**$ 212,171**	**$ 186,144**	**$ 131,895**	**$ 1,156,360**
Total as of July 31, 2019	**377**	**$ 573,686**	**$ 296,361**	**$ 245,310**	**$ 194,973**	**$ 356,193**	**$ 1,666,523**
Total as of September 30, 2018	**326**	**$ 793,948**	**$ 424,797**	**$ 324,413**	**$ 190,444**	**$ 975,977**	**$ 2,709,580**
	16%	**-28%**	**-30%**	**-24%**	**2%**	**-64%**	**-38%**

Guam Waterworks Authority
System Development Charges Project Status
As of July 31, 2019

SCHEDULE H

PROJECT NAME	Available Project Funds	Total Expenditures	Total Outstanding Encumbrances	Total Expenditures and Encumbrances	Total Unobligated Funds
SDC - Water					
Central Guam Reservoirs		-	280,040	280,040	
Line Replacement Phase IV		-	256,937	256,937	
South Paulino Heights Waterline Upgrade		60,372	3,263	63,635	
Northern District Wastewater Treatment Plant			3,936,874	3,936,874	
	$ 6,003,416	**$ 60,372**	**$ 4,477,114**	**$ 4,537,486**	**$ 1,465,930**
SDC - Wastewater					
Agat-Santa Rita Wastewater Treatment Plant Replacement		671,691	948,351	1,620,043	
Baza Gardens Wastewater Cross Island Pumping & Conveyance		944,975	196,301	1,141,276	
Route 4 Relief Sewerline Rehab & Replacement		-	399,869	399,869	
Northern WWTP (Land Purchase)		1,000,000	-	1,000,000	
Talofofo Sewer Improvement		-	241,142	241,142	
Northern District Wastewater Treatment Plant		-	1,485,725	1,485,725	
	$ 6,150,440	**$ 2,616,667**	**$ 3,271,387**	**$ 5,888,054**	**$ 262,386**
Grand Totals	**$ 12,153,856**	**$ 2,677,039**	**$ 7,748,502**	**$ 10,425,540**	**$ 1,728,315**

Future planned projects	2019
Water Wells	$ 1,850,000
Water Dist Sys Pipe Replacement & Upgrades	1,850,000
WWTP Priority 1 Upgrades	1,000,000
Umatac Merizo STP Replacement	1,000,000
Wastewater Sewer System Expansion	1,000,000
	$ 6,700,000

GUAM WATERWORKS AUTHORITY
"Better Water, Better Lives."
Gloria B. Nelson Public Service Building| 688 Route 15 | Mangilao, Guam 96913
Tel: (671) 300-6846

Issues for Decision

Resolution No. 40-FY2019
Relative to the Approval of the Contract with JMI-Edison for the Purchase of Submersible Cables and Splicing Gels for Water Production Division deepwell facilities Island-wide.

What is the project's objective and is it necessary and urgent?
This approval requested in this resolution will authorize the purchase splicing gels and submersible cables of various sizes utilized for pump and motor maintenance activities at the over 100 existing water wells at various locations island wide. The purchases under this authorization will be used to replenish stock levels of these gels and submersible cables at the warehouse to ensure adequate quantities are available at all times to repair production wells and insure consistent and stable water supply. The project is necessary and urgent to maintain critical inventory levels.

Where is the location?
The materials to be procured under this authorization will be utilized at GWA Deep-well Production Facilities Island-wide.

How much will it cost?
Seven Hundred Fifty-Four Thousand Three Hundred Seventy-One Dollars ($754,371.00).

Bid Item No	Description	UOM	Est Qty	Unit Cost	Amount	Notes
1.0	Splicing Gel 3M 21.8 oz	case	5	$1,115.00	$5,575.00	10 pack per case
2.0	Splicing Gel 3M 10.0 oz	case	5	$630.00	$3,150.00	10 pack per case
3.0	Paige Part No. 020076 2 AWG Conductor Size 3 Insulated Conductors 6 AWG Grounding Conductor Size	spool	4	$2,665.00	$10,660.00	500 ft per spool
4.0	Paige Part No. 020078 1 AWG Conductor Size 3 Insulated Conductors 6 AWG Grounding Conductor Size	spool	4	$6,082.00	$24,328.00	500 ft per spool
5.0	Paige Part No. 020106 3/0 AWG Conductor Size 3 Insulated Conductors 6 AWG Grounding Conductor Size	spool	4	$9,263.00	$37,052.00	500 ft per spool
6.0	Paige Part No. 070002 2 AWG Conductor Size 3 Insulated Conductors 5 AWG Grounding Conductor Size	spool	4	$6,160.00	$24,640.00	500 ft per spool
7.0	Paige Part No. 070040 4/0 AWG Conductor Size 3 Insulated Conductors 1/0 AWG Grounding Conductor Size	spool	4	$17,020.00	$68,080.00	500 ft per spool
8.0	Paige Part No. 070250 250 AWG Conductor Size 3 Insulated Conductors 2/0 AWG Grounding Conductor Size	spool	4	$19,493.00	$77,972.00	500 ft per spool
			Annual Estimated Total Cost		**$251,457.00**	
	Three Year Contract		**3 Year Estimated Total Cost**		**$754,371.00**	

** Item 1.0 to 8.0 Delivery Date: 10-12 weeks.*

*** Item 1.0 to 8.0 Warranty; 1 year upon delivery date.*

When will it be completed?
The indefinite quantity contract will be in place for an initial term of three (3) years with two (2) one-year options to renew. Purchases will be on an as-needed basis over the contract term.

What is the funding source(s)?
FY2019 / FY2020 GWA Water Production and Treatment Operations and Maintenance Budget (revenue funded).

The RFP / Bid Responses
IFB 2019-18 Submersible Cables and Splicing Gels. Ten (10) bidders registered for the procurement. Of the ten (10) entities, only one (1) submitted a bid: JMI Edison.

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671)649-3002 | guamccu.org

GWA RESOLUTION NO. 40-FY2019

RELATIVE TO APPROVAL OF THE CONTRACT WITH JMI-EDISON FOR THE PURCHASE OF SPLICING GELS AND SUBMERSIBLE CABLES FOR ISLANDWIDE DEEPWELL WATER PRODUCTION

WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities ("CCU") has plenary authority over financial, contractual, and policy matters relative to the Guam Waterworks Authority ("GWA"); and

WHEREAS, the Guam Waterworks Authority ("GWA") is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, GWA advertised an Invitation for Bid (IFB) 2019-18 soliciting bid proposals from experienced and responsive bidders to provide submersible cables of various sizes and splicing gels for GWA deepwell production facilities and to provide adequate stock replenishment as needed to maintain continuity of island wide water services; and

WHEREAS, ten entities registered for the bid procurement, and there was one responsive and responsible bidder who met the bid requirements of IFB 2019-18; and

WHEREAS, the IFB 2019-18 offers were evaluated by GWA's review committee, who determined that the offer for splicing gels and submersible cables made by JMI-Edison is fair and reasonable on the basis of comparison to historical procurement data [EXHIBIT A]; and

WHEREAS, GWA accepted JMI-Edison's indefinite quantity bid proposal Submersible Cables and Splicing Gels [EXHIBIT B] for the quantities estimated for the initial three-year term at an estimated total amount of Seven Hundred Fifty-Four Thousand Three Hundred Seventy-One Dollars ($ 754,371.00) [EXHIBIT B]; and

WHEREAS, GWA Management seeks CCU Approval of the estimated three-year Contract amount of Seven Hundred Fifty-Four Thousand Three Hundred Seventy-One Dollars ($ 754,371.00) for the purchase of Submersible Cables and Splicing Gels; and

WHEREAS, the source of funding for the Splicing Gels and Submersible Cables will be from FY 2019 / FY 2020 GWA Water Production and Treatment Operations and Maintenance Budget.

NOW BE IT THEREFORE RESOLVED, the Consolidated Commission on Utilities does hereby approve the following:

1. The recitals set forth above hereby constitute the findings of the CCU.
2. The CCU finds that the terms of the bid proposal submitted by "JMI-Edison" are fair and reasonable.
3. The CCU hereby authorizes the management of GWA to proceed based on the notice of award to "JMI-Edison" attached hereto as EXHIBIT B, and which is incorporated into this Resolution in its entirety.
4. The CCU hereby further authorizes the management of GWA to enter into a contract with "JMI Edison", to purchase up to Seven Hundred Fifty-Four Thousand Three Hundred Seventy-One Dollars ($ 754,371.00) worth of Splicing Gels and Submersible Cables on as needed basis for the contract amount on IFB 2019-18, for the duration of the initial contract term of three (3) years as specified in the IFB 2019-18 "Indefinite Quantity Bid", and two (2) one-year options to renew, subject to availability of funds and agreement between the parties.
5. The CCU hereby approves the funding total of Seven Hundred Fifty-Four Thousand Three Hundred Seventy-One Dollars ($ 754,371.00) [EXHIBIT B];
6. GWA Management is hereby authorized to seek PUC approval in the event the contract value exceeds One Million Dollars ($1,000,000.00) as required by Docket 00-04.

//

RESOLVED, that the Chairman certified and the Board Secretary attests to the adoption of this Resolution.

DULY AND REGULARLY ADOPTED, this 27th day of August, 2019.

Certified by: Attested by:

_____ _____

JOSEPH T. DUENAS **MICHAEL T. LIMTIACO**
Chairperson Secretary

SECRETARY'S CERTIFICATE

I, Michael T. Limtiaco, Board Secretary of the Consolidated Commission on Utilities as evidenced by my signature above do hereby certify as follows:

The foregoing is a full, true and accurate copy of the resolution duly adopted at a regular meeting by the members of the Guam Consolidated Commission on Utilities, duly and legally held at a place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

AYES: _____

NAYS: _____

ABSTENTIONS: _____

ABSENT: _____

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EXHIBIT A

GUAM WATERWORKS AUTHORITY
Gloria B. Nelson Public Service Building
688 Route 15, Mangilao GU, 96913

NOTICE OF CONDITIONAL AWARD

Date: JUL 19 2019

JMI Edison
125 North Marine Drive
P.O. Box 6577
Tamuning, Guam 96931
Phone- #671-646.6400
Fax- #671-649.4835

Re: Invitation for Bid Number: GWA IFB-2019-18
For: Splicing Gels and Submersible Electrical Cables (IDQ)

Hafa Adai Mr. Romeo Oriondo,

The Guam Waterworks Authority ("GWA") has considered the bid submitted by JMI Edison Guam, for the above described reference in response to its Advertisement for Bids dated April 30, 2019 you are hereby notified of your bid offer on all Item Numbers 1.0, 2.0, 3.0, 4.0, 5.0, 6.0, 7.0 and 8.0, been accepted by GWA. Please be advised that you must now deliver all other documents required by the bid, including, but not limited to:

- Proof of Insurance: (if applicable/required part of the bid requirements.)
- Performance and Payment Bond: (if applicable/required part of the bid requirements.)

(Which must remain in full force and effect until all performance has ended, which includes all warranty periods).

You are also advised that any obligation incurred by your firm prior to execution of the contract is entirely at your own risk and GWA shall have no obligation to reimburse costs incurred prior to execution of the contract.

Please note this Notice of Award is conditional on obtaining the approval of the Guam Consolidated Commission on Utilities for any award over $750,000 and the approval of the Guam Public Utilities Commission where the total value over the life of the contract could exceed $1M. Also, award is conditional upon providing proof of business license required to be submitted to GWA under the Bid or Guam law.

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You are required to return an acknowledged copy of this Conditional Notice of Award to GWA Procurement Office.

Sincerely,

Miguel C. Bordallo. P.E.
General Manager

ACCEPTANCE OF CONDITIONAL NOTICE OF AWARD

Receipt of the above Notice of Conditional Award for GWA IFB No. GWA 2019-18 is hereby acknowledged

By: _____ Title: Operations Mgr
Signature (Please Print)

Dated this 23rd day of July, 2019.

* * * * * * * * END OF CONDITIONAL NOTICE OF AWARD * * * * * * *

GUAM WATERWORKS AUTHORITY
"Better Water. Better Lives."
Gloria B. Nelson Public Services Building
688 Route 15, Mangilao, Guam 96913

EXHIBIT B

MEMORANDUM

TO: General Manager

VIA: Supply Management Administrator

FROM: Evaluation Committee Members

SUBJECT: Invitation to Bid No. GWA 2019-18
Ref: Splicing Gels & Submersible Electrical Cables (IDQ)

REF: Recommendation of Award

DATE:

Invitation for Bid No: GWA 2019-18 was officially announced and advertised in the Pacific Daily News, The Guam Daily Post and Guam Waterworks Authority Website on April 30, 2019 and open as scheduled on May 21, 2019 @ 10:00 am. Ten (10) prospective bidders expressed interest, they are as follow:

Bidders Register:

1. dsdsfas
2. bid
3. America's Best Electricmart, Inc.
4. ajay
5. Ab
6. Indigo Piping Systems
7. adada
8. Guam Pacific Enterprises, Inc.
9. Engineered Systems Inc.
10. JMI Edison

Of the ten (10) only One (1) submitted a sealed bid, namely:

- JMI Edison Guam

An evaluation committee convene on May 28, 2019 @ 2:00 pm, and after clarifying with JMI Edison's Total Cost on Line Item No. 8 and Delivery Date, the committee members recommend to consider and request your approval to waive, authorized by Procurement Law Policy and procedures JMI Edison's Date of Delivery offer of 10-12 weeks ARO a total of 80 calendar days from 60 days Date of Delivery as stated on the bid. Since JMI Edison is the only bidder who submitted a bid package and based on the reason given by JMI ". *Lead time is six weeks plus transit*

time to Guam. Would it be possible to request for 10-12 weeks delivery to Guam?". Therefore, the committee members respectfully recommend to move forward with the award set forth in the IFB.

I. BID ITEM(s)

ITEM NO	DESCRIPTION	EST. QTY	UNIT COST	EXTENSION
1.0	SPLICING GEL 3M 21.8 OZ	5 CASE (10 pack/case)	$1,115.00	$5,575.00
2.0	SPLICING GEL 3M 10.0 OZ	5 CASE (10 pack/case)	$630.00	$3,150.00

BIDDING ON:

MFG: 3M Electric

BRAND: 3M

PLACE OF ORIGIN: U.S.A.

DATE OF DELIVERY: 8 weeks
(AFTER RECEIPT OF PURCHASE ORDER)

ITEM NO	DESCRIPTION	EST. QTY	UNIT COST	EXTENSION
3.0	SUBMERSIBLE ELECTRICAL CABLE (500 ft. per spool) Paige Part No. 020076 2 AWG Conductor Size 3 Insulated Conductors 6 AWG Grounding Conductor Size	4 EA	$2,655.00	$10,660.00
4.0	SUBMERSIBLE ELECTRICAL CABLE (500 ft. per spool) Paige Part No. 020078 1 AWG Conductor Size 3 Insulated Conductors 6 AWG Grounding Conductor Size	4 EA	$6,082.00	$24,328.00
5.0	SUBMERSIBLE ELECTRICAL CABLE (500 ft. per spool) Paige Part No. 020106	4 EA	$9,263.00	$37,052.00

Ref: GWA IFB 2019-18

	3/0 AWG Conductor Size 3 Insulated Conductors 6 AWG Grounding Conductor Size			
6.0	SUBMERSIBLE ELECTRICAL CABLE (500 ft. per spool) Paige Part No. 070002 2 AWG Conductor Size 3 Insulated Conductors 5 AWG Grounding Conductor Size	4 EA	$6,160.00	$24,640.00
7.0	SUBMERSIBLE ELECTRICAL CABLE (500 ft. per spool) Paige Part No. 070040 4/0 AWG Conductor Size 3 Insulated Conductors 1/0 AWG Grounding Conductor Size	4 EA	$17,020.00	$68,080.00
8.0	SUBMERSIBLE ELECTRICAL CABLE (500 ft. per spool) Paige Part No. 070250 250 AWG Conductor Size 3 Insulated Conductors 2/0 AWG Grounding Conductor Size	4 EA	$19,493.00	$77,972.00

BIDDING ON:

MFG: Paige Electric

BRAND: Paige

PLACE OF ORIGIN: U.S.A.

DATE OF DELIVERY: 8 TO 10 WEEKS
(AFTER RECEIPT OF PURCHASE ORDER)

CONTRACT TERM:
Initial contract term for three (3) years.

Grand Total: $251,457.00 (Annually)

Three (3) Year Contract: $754,371.00

Ref: GWA IFB 2019-18

End of Evaluation.

NOTE: Subject for CCU approval.

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Ref: GWA IFB 2019-18

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Concurred and accepted by the committee members:

Barbara Ann C. Cruz, Senior Engineer Supervisor, PE

7/19/2019
Ron Topasna, Operations and Maintenance Water Productions

July 17, 2019
Karen Cheryl O. Grape, Management Analyst III

#481 7/19/19
Victor Jardel, Electrician II

Antonio C. Camacho, Buyer II

Roland F. Lumongsud, Buyer II

Your approval is greatly appreciated.

Reviewed by legal: _____



Ref: GWA IFB 2019-18

In consideration of the foregoing, please indicate your approval of this recommendation by your signature below.

[ ] CONCURRED [ ] UNCONCURRED

VINCENT ED. GUERRERO, SMA

[ ] APPROVED [ ] DISAPPROVED

7.19.19

MIGUEL C. BORDALLO, P.E. GENERAL MANAGER

Ref: GWA IFB 2019-18

GUAM WATERWORKS AUTHORITY
"Better Water, Better Lives."
Gloria B. Nelson Public Service Building| 688 Route 15 | Mangilao, Guam 96913
Tel: (671) 300-6846

Issues for Decision

Resolution No. 41-FY2019
Relative to Approving the Construction Contract for the Santa Rosa, Santa Rita, and Sinifa Reservoir Replacement

What is the project's objective and is it necessary and urgent?
The project is spread across three different water reservoir sites, including a new booster pump station and various control valve and line upgrades. The reservoirs are listed under the U.S. District Court Order. The following describes the project locations and general scope of work.

Santa Rosa Reservoir

Base Bid Items 1 to 6:

- A new Santa Rosa Reservoir (1.0 MG) will be constructed adjacent to the existing steel tank. Work will include the new reservoir, new booster pump station, off-site improvements and various site upgrades.
- The existing booster pump station will be demolished and replaced with a new building structure, piping, pump system, instrumentation, controls, and a SCADA system.
- Once the new reservoir has been constructed, the existing steel reservoir will be taken offline for inspection. After the API and structural inspection, the steel tank will be either repaired or demolished.
- Work will also occur at several off-site locations (6 locations). The work consists of line interconnections and installation of new valves. The work is in line with the Pressure Zone Realignment plan.

Additive Bid Items 7 and 8:

- The work includes the construction of the Department of Defense inter-tie on GWA and possibly DoD property. Work is separated into two bid items. Additive Bid Item 7 is for work within GWA property, while Additive Bid Item 8 is for work within DoD property.

Additive Bid Item 9:

- The work includes the construction of 4,042 L.F. of 12" waterline on Route No. 1.

Additive Bid Item 10 and 11:

- The work includes the demolition of the existing steel tank and disposal of the oiled sand foundation in accordance with applicable regulations.
- The inclusion of the additive work will be determined after the API and structural inspections have been conducted.

Santa Rita Reservoir

Base Bid Items 1 to 6:

- The existing steel reservoir will be demolished and replaced with a new concrete reservoir (1.0 MG). Work will include the construction of the new reservoir, repair of the existing reservoir driveway entrance, construction of a new control building, and various site upgrades.

Additive Bid Item 7:

- The work includes construction of Pressure Zone Realignment sites 1 to 12. The work consists of:
  - repairing or replacing PRV vaults, piping and valves
  - construction of new PRV vaults, piping, and valves
  - new lines to interconnect existing lines

The work is in line with the Pressure Zone Realignment plan.

Additive Bid Item 8:

- Removal and disposal of existing steel tank foundation oiled sand in accordance with applicable regulations. This will be determined after the new reservoir has been constructed and the existing reservoir taken offline for demolition.

Sinifa Reservoir

Base Bid Items 1 to 5:

- A new Sinifa reservoir (1.0 MG) will be constructed adjacent to the existing steel tank. Work include the new reservoir, construction of a new control building, and various site upgrades.
- Once the new reservoir has been constructed, the existing steel reservoir will be taken offline for inspection. After the API and structural inspection, the steel tank will be either repaired or demolished.

Additive Bid Items 6 and 7:

- The work includes demolition of the existing steel tank and disposal of the oiled sand foundation in accordance with applicable regulations.
- The inclusion of the additive work will be determined after the API and structural inspections have been conducted.

Where is the project located?

- Santa Rosa Reservoir and Booster Pump Station is located in Yigo.
- Santa Rita Reservoir is located in Santa Rita.
- Sinifa Reservoir is located in Santa Rita.

How much will it cost?

The Base bid proposal submitted by AIC International, Inc. is $26,417,650.00, with a 10% contingency of $2,641,765.00, the total project funding amount will be $29,059,415.00.

When will it be completed?
One Notice to Proceed (NTP) shall be issued for the entire project.

Santa Rosa Reservoir

1. Santa Rosa Reservoir, Base Bid Substantial Completion: The Contractor shall begin work upon issuance of the Notice to Proceed (NTP) and the base bid work shall be substantially completed as specified no later than 395 calendar days from NTP.
2. Santa Rosa Bid Items 7 & 8 (Additive), if awarded, will add thirty (30) calendar days from the NTP to the Santa Rosa Reservoir Base Bid Substantial Completion.
3. Santa Rosa Bid Item 9 (Additive), if awarded, will add thirty (30) calendar days from the NTP to the Santa Rosa Reservoir No. 2 Base Bid Substantial Completion.
4. Santa Rosa Bid Item 10 (Additive), if awarded, will add thirty (30) calendar days from the NTP to the Santa Rosa Reservoir Base Bid Final Completion.
5. Santa Rosa Bid Item 11 (Additive), if awarded, will add zero (0) calendar days from the NTP to the Santa Rosa Reservoir Base Bid Substantial Completion.

Santa Rita Reservoir

1. Santa Rita Reservoir Base Bid Substantial Completion: The Contractor shall begin work upon issuance of the Notice to Proceed (NTP) and the base bid work shall be substantially completed as specified no later than 425 calendar days from NTP.
2. Santa Rita Bid Item 7 (Additive), if awarded, will add thirty (30) calendar days from the NTP to the Santa Rita Reservoir Base Bid Substantial Completion.
3. Santa Rita Bid Item 8 (Additive), if awarded, will add zero (0) calendar days from the NTP to the Santa Rita Reservoir Base Bid Substantial Completion.

Sinifa Reservoir

1. Sinifa Reservoir Base Bid Substantial Completion: The Contractor shall begin work upon issuance of the Notice to Proceed (NTP) and the base bid work shall be substantially completed as specified no later than 365 calendar days from NTP.
2. Sinifa Bid Item 6 (Additive), if awarded, will add thirty (30) calendar days from the NTP to the Sinifa Reservoir Base Bid Final Completion.
3. Sinifa Bid Item 7 (Additive), if awarded, will add zero (0) calendar days from the NTP to the Sinifa Reservoir Base Bid Substantial Completion.

What is the funding source?
The funds for this project will be bond, grant, SDC and/or internally funded CIP funds from the various CIP line items identified below:

1. PW 09-11: Water System Reservoirs 2005 Improvements
2. PW 05-06: Water Booster Pump Station
3. PW 09-03: Water Distribution System Pipe Replacement and upgrades
4. PW 09-04: Pressure Zone Realignment/Development 2005 Improvements

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671)649-3002 | guamccu.org

GWA RESOLUTION NO. 41-FY2019

RELATIVE TO APPROVING THE CONSTRUCTION CONTRACT FOR THE SANTA ROSA, SANTA RITA, AND SINIFA RESERVOIR REPLACEMENT

WHEREAS, under 12 G.C.A. § 14105, the Consolidated Commission on Utilities ("CCU") has plenary authority over financial, contractual and policy matters relative to the Guam Waterworks Authority ("GWA"); and

WHEREAS, the Guam Waterworks Authority ("GWA") is a Guam Public Corporation established and existing under the laws of Guam; and

WHEREAS, GWA currently has a number of critical Court Order ("CO") Projects, including the construction (i.e. repair, rehabilitate, replace or relocate) of the Santa Rosa, Santa Rita, and Sinifa Reservoirs, as stated in Paragraph 29 (b) (4), (5), and (6) of the Court Order; and

WHEREAS, in compliance with the Court Order, GWA intends to execute a construction project to address the following:

1. The construction of the new Santa Rosa reservoir (1.0 MG) and booster pump station; and
2. The construction of the new Santa Rita reservoir (1.0 MG) to replace the existing Santa Rita steel tank; and
3. The construction of the new Sinifa reservoir (1.0 MG) to replace the existing Sinifa steel tank; and

WHEREAS, GWA has advertised an Invitation for Bid (IFB) soliciting bid proposal from experienced, responsible, and responsive bidders to construct the Santa Rosa reservoir and booster pump station, Santa Rita reservoir, Sinifa reservoir, and off-site work in the Base Bid, and to construct the Department of Defense (DoD) inter-tie, Route 1 waterline improvements,

construction of Pressure Zone Realignment Sites 1-12, and existing Santa Rosa and Sinifa reservoir demolition and foundation oiled sand disposal in the Additive Bid; and

WHEREAS, the Base Bid work consists of the Contractor furnishing all labor, tools, equipment and materials necessary to complete the construction of the Santa Rosa reservoir and booster pump station, Santa Rita reservoir, and Sinifa reservoir to include, but not limited to foundation, earthwork, pipework, retaining wall, storm water detention basin, Santa Rita roadway repair, off-site PRVs, concrete work, electrical work, fences and gates, protective coatings, SCADA, disinfection, testing and start-up under the provisions of the bid documents and in accordance with applicable GWA standards; and

WHEREAS, IFB packages were picked up by eighteen (18) interested parties, from which GWA received bid proposals from three (3) of the 18 parties before the bid proposal deadline (See Exhibit A – Abstract of Bids); and

WHEREAS, GWA engineering and the construction management team analyzed all bid proposals received on April 30th, 2019 and determined that AIC International, Inc. as being the responsive and responsible bidder and met all the bid requirements set forth by GWA (See Exhibit B – Recommendation Memorandum); and

WHEREAS, GWA Management finds that AIC International, Inc.'s Base Bid proposal of Twenty-Six Million Four Hundred Seventeen Thousand Six Hundred Fifty Dollars ($26,417,650.00) to be acceptable (See Exhibit C – Bid Form); and

WHEREAS, GWA Management will assess any additional funding availability from the latest Capital Improvements Plan to ascertain if any or all the Additive bid items as part of this IFB can be awarded later through a change order or via a subsequent CCU approval as a means of maximizing system improvements efficiently; and

WHEREAS, GWA Management is seeking approval to enter into contract for the Base Bid work with AIC International, Inc. (IFB-01-ENG-2019) in the amount of Twenty-Six Million Four Hundred Seventeen Thousand Six Hundred Fifty Dollars ($26,417,650.00), along with a ten

percent (10%) contingency of Two Million Six Hundred Forty-One Thousand Seven Hundred Sixty-Five Dollars ($2,641,765.00), bringing the total requested funding amount to Twenty-Nine Million Fifty-Nine Thousand Four Hundred Fifteen Dollars ($29,059,415.00); and

WHEREAS, the funding sourced for the construction project will be from bond, grant, SDC and internally funded CIP funds as detailed in the following CIP line items:

- CIP PW 09-11: Water System Reservoirs 2005 Improvements
- CIP PW 05-06: Water Booster Pump Station
- CIP PW 09-03: Water Distribution System Pipe Replacement and Upgrades
- CIP PW 09-04: Pressure Zone Realignment/Development 2005 Improvements

NOW BE IT THEREFORE RESOLVED, the Consolidated Commission on Utilities does hereby approve and authorize the following:

1. The recitals set forth above hereby constitute the findings of the CCU.
2. The CCU finds that the terms of the bid proposal submitted by AIC International, Inc. are fair and reasonable.
3. The CCU hereby authorizes the management of GWA to accept the bid from AIC International, Inc. attached hereto as Exhibit C, and which is also incorporated into this Resolution in its entirety.
4. The CCU hereby further authorizes the management to enter into a contract with AIC International, Inc. in the amount of Twenty-Six Million Four Hundred Seventeen Thousand Six Hundred Fifty Dollars ($26,417,650.00).
5. The CCU hereby approves the funding total of Twenty-Six Million Four Hundred Seventeen Thousand Six Hundred Fifty Dollars ($26,417,650.00), along with a ten percent (10%) contingency of Two Million Six Hundred Forty-One Thousand Seven Hundred Sixty-Five Dollars ($2,641,765.00), bringing the total requested funding amount to Twenty-Nine Million Fifty-Nine Thousand Four Hundred Fifteen Dollars ($29,059,415.00)
6. The CCU hereby approves the use of funding sources from the following CIP line items:

- CIP PW 09-11: Water System Reservoirs 2005 Improvements
- CIP PW 05-06: Water Booster Pump Station
- CIP PW 09-03: Water Distribution System Pipe Replacement and Upgrades
- CIP PW 09-04: Pressure Zone Realignment/Development 2005 Improvements

RESOLVED, that the Chairman certified and the Board Secretary attests to the adoption of this Resolution.

DULY AND REGULARLY ADOPTED, this 27th day of August 2019.

Certified by:	Attested by:
_____	_____
JOSEPH T. DUENAS	**MICHAEL T. LIMTIACO**
Chairperson	Secretary

SECRETARY'S CERTIFICATE

I, Michael T. Limtiaco, Board Secretary of the Consolidated Commission on Utilities as evidenced by my signature above do hereby certify as follows:

The foregoing is a full, true and accurate copy of the resolution duly adopted at a regular meeting by the members of the Guam Consolidated Commission on Utilities, duly and legally held at a place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

AYES: _____

NAYS: _____

ABSTENTIONS: _____

ABSENT: _____

Exhibit A

ORIGINAL

GUAM WATERWORKS AUTHORITY
ABSTRACT OF BIDS

Project Name: **SANTA ROSA, SANTA RITA AND SINIFA RESERVOIR REPLACEMENT**
Project Number: W14-007-BND IFB NO.: IFB-01-ENG-2019

Bid Opening Date: April 30, 2019
Time: 3:00 p.m.

	Bidders Name	Section A-5 Bid Bond	CERTIFICATIONS												Table A - Base Bid	Table B - Base Bid	Table C - Base Bid	TABLE A+B+C BASE BID TOTAL
			Qualification Statement	Non Collusion Affidavit	EEO Certification	Non Segregated Facilities	Sex Offender Certification	Wage and Benefit Determination	Major Shareholder Affidavit	Special Instructions to Bidders	Addendum 1	Addendum 2	Addendum 3	Addendum 4	Table A - Base Bid and Additive Bid	Table B - Base Bid and Additive Bid	Table C - Base Bid and Additive Bid	TABLE A+B+C ADDITIVE BID TOTAL
1.	CANTON CONSTRUCTION	NO Bid																
2.	CORE TECH INTERNATIONAL	NO Bid																
3.	ECC	NO Bid																
4.	BLACK CONSTRUCTION CORP.	NO Bid																
5.	AIC	Fidelity & Deposit company of Maryland 15% of accompanying bid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	$ 9,886,011 $ 11,057,175	$ 8,703,331 $ 9,396,972	$ 8,690,308 $ 8,911,150	$ 26,417,650 $ 29,345,297
6.	DN TANKS	NO Bid																
7.	VALCON GUAM	NO Bid																
8.	HDCC GUAM	NO Bid																
9.	GRANITE CONSTRUCTION COMPANY GUAM	Federal bs. company 15% of bid amount	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	$ 13,670,650 $ 14,670,650	$13,625,000 $14,225,000	$11,699,600 $ 11,699,600	$ 38,895,250 $ 40,595,250
10.	MCS CONSTRUCTION	NO Bid																
11.	JMI EDISON	NO Bid																
12.	HES MICRONESIA	NO Bid																

CCU Regular Meeting August 27, 2019 - GWA

ORIGINAL

	Bidders Name	Section A-5 Bid Bond	CERTIFICATIONS								Addendum				Table A - Base Bid	Table B - Base Bid	Table C - Base Bid	TABLE A+B+C BASE BID TOTAL
			Qualification Statement	Non Collusion Affidavit	EEO Certification	Non Segregated Facilities	Sex Offender Certification	Wage and Benefit Determination	Major Shareholder Affidavit	Special Instructions to Bidders	1	2	3	4	Table A - Base Bid and Additive Bid	Table B - Base Bid and Additive Bid	Table C - Base Bid and Additive Bid	TABLE A+B+C ADDITIVE BID TOTAL
13.	M & M TANKS, INC.	NO Bid																
14.	TOVES & LLC - LAZRS	NO Bid																
15.	PACIFIC DEVELOPMENTS	NO Bid																
16.	BME & SONS INC.	Fidelity & Deposit Company of Maryland 15% of accompanying bid	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	$ 9,859,998.79 $ 11,027,560.75	$ 8,058,588.96 $ 8,911,245.93	$ 8,979,702.67 $ 9,401,894.89	$ 26,090,290.42 $ 29,340,703.57
17.	ORION CONSTRUCTION CORP.	NO Bid																
18.	ARS ALEUT CONSTRUCTION, LLC	NO Bid																
	GWA ESTIMATE														$ 8,682,775.73 $ 12,229,440.73	$ 8,861,168.38 $ 8,933,299.38	$ 7,526,072.21 $ 7,657,076.21	$ 25,070,016.31 $ 28,819,765.31

Bids Opened and Read by:

GLORIA P. BENSAN
(Name and Signature)

Tabulated By:

(Name and Signature)

GWA Procurement Representative:
ROLAND F. LUMIWES
(Name and Signature)

Witnesses:

Exhibit B

Date: August 15, 2019

Reference No.: GHD/GWA LTR-13

To: Brett Railey
Guam Waterworks Authority
Gloria B. Nelson Public Service Building
688 Route 15
Mangilao, Guam 96913

Project: GWA Project: W14-007-BND
IFB-01-ENG-2019
Northern and Southern Guam Reservoir Replacement

Subject: Recommendation for Award, AIC International

Dear Mr. Railey:

GWA submitted a Request for Information to AIC International (AIC) on August 06, 2019. AIC responded as requested, submitting their response on August 09, 2019. GHD has reviewed the response and detailed our review comments in our August 13, 2019, GHD/GWA LTR-12. To summarize this review, AIC's responses were complete and all items were addressed.

AIC confirmed that:

- AIC confirmed that the reason they did not provide a listing safety citations in the 'Statement of Contractor's 5-year record of OSHA citations or violations' as required by the Bid Documents as these citations had been deleted. Four citations shown on the OSHA website and we asked for further details. AIC provided copies of an email and Informal Settlement Agreement with OSHA showing that these citations had been deleted and therefore they did not need to list them as part of their bid.
- Form 'Appendix G Employment Data' from the Bid was provided.

AIC provided further information and clarifications for:

- AIC extended terms and conditions of the Instruction to Bidders from the 60 calendar days to 120 calendar days
- Confirmed that two bid items that were less than 45% of the engineer's estimate were inclusive of all work in accordance with the plans and specifications.
- Adjusted mobilization bid amount to conform with Specifications that limit bid item amount to 5% of total contract.
- Provided information for review for proposed Commissioning Agent, and Driller of Concrete Piers and Shafts.
- Provided designation of and resumes for AIC's three full time site superintendents, three full time Safety Officers, and one project QC Officer.
- DN Tanks provided more information regarding the number and location of their strand wrapping and automated shotcrete machines.
- Provided list of suppliers and subcontractors, identifying scope of work for each.

GHD, Inc. 865 South Marine Corps Drive Suite 202 Tamuning Guam 96913
T 1 671 472 6792 **F** 1 671 477 6229 **E** guam@ghd.com **W** www.ghd.com

- DN Tanks provided resumes for Tanks Superintendents on Guam.
- Provided updated Contractor's recent license renewal.
- Confirmed that DN Tanks is the only contractor or supplier performing work having a value greater than 10%.
- Provided certificate from their insurance company verifying that AIC continues to have adequate available bonding capacity for this project.

We did request further information from the Commissioning Agent and DN Tanks, but these items that are still in question can be addressed after award. Based on AIC's response, we believe that AIC International has submitted a bid which generally conforms in all material respects to the Invitation for Bids. Based on this, we recommend award of the contract to AIC International.

Regards,

Bryan J. Ryley
Project Coordinator

Cc: Nancy Heuman, P.E., Project Manager GHD
Garrett Yeoh, GWA, Senior Engineer

Exhibit C

BID FORM

BID RECIPIENT

This Bid is submitted to:

Guam Waterworks Authority
Engineering Division, Room 202
Gloria B. Nelson Public Service Building
688 Route 15
Mangilao, Guam 96913

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into a Contract with Buyer in the form included in the Bidding Documents to furnish the Goods and Special Services as specified or indicated in the Bidding Documents, for the prices and within the times indicated in this Bid, and in accordance with the other terms and conditions of the Bidding Documents.

BIDDER'S ACKNOWLEDGMENTS

Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Buyer.

BIDDER'S REPRESENTATIONS

In submitting this Bid, Bidder represents that:

Bidder has examined and carefully studied the Bidding Documents, the related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date
01	23 JANUARY 2019
02	22 FEBRUARY 2019
03	29 MARCH 2019
04	25 APRIL 2019

Bidder has visited the Point of Destination and site where the Goods are to be installed or Special Services will be provided and become familiar with and is satisfied as to the observable local conditions that may affect cost, progress, or the furnishing of Goods and Special Services, if required to do so by the Bidding Documents, or if, in Bidder's judgment, any local condition may affect cost, progress, or the furnishing of Goods and Special Services.

Bidder is familiar with and is satisfied as to all Laws and Regulations in effect as of the date of the Bid that may affect cost, progress, and the furnishing of Goods and Special Services.

Bidder has carefully studied, considered, and correlated the information known to Bidder; information commonly known to sellers of similar goods doing business in the locality of the Point of Destination and the site where the Goods will be installed or where Special Services will be provided; information and observations obtained from Bidder's visits, if any, to the Point of Destination and the site where the Goods will be installed or Special Services will be provided; and any reports and drawings identified in the Bidding Documents regarding the Point of Destination and the site where the Goods will be installed or where Special Services will be provided, with respect to the effect of such information, observations, and documents on the cost, progress, and performance of Seller's obligations under the Bidding Documents.

Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution (if any) thereof by Engineer is acceptable to Bidder.

The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for furnishing the Goods and Special Services for which this Bid is submitted.

BIDDER'S CERTIFICATIONS

Bidder certifies that:

This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;

Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;

Bidder has not solicited or induced any individual or entity to refrain from bidding; and

Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:

1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;

2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Buyer, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Buyer of the benefits of free and open competition;

3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Buyer, a purpose of which is to establish bid prices at artificial, non-competitive levels; and

4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process.

BASIS OF BID

Bidder will furnish the Goods and Special Services in accordance with the Contract Documents for the following price(s):

BID SCHEDULE

Interested Bidders must complete Table A, Table B, and Table C. All blanks in the tables must be filled out.

Definitions:
LS = lump sum

TABLE A
SANTA ROSA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 6, ADDITIVE BID ITEMS 7, 8, 9, 10 & 11)

Item No.	Description	Quantity	Unit	Extended Amount	
1.	Mobilization, as specified in the Contract Documents.	1	LS	$ ~~662,749.00~~	437,349,00
	Item 1 Breakdown:				
	1.1 Move onto Site			$ ~~254,890.00~~	154,890.00
	1.2 Field Offices, fit out and utilities			$ 171,924.00	
	1.3 Project Scheduling			$ 24,349.00	
	1.4 Assessment of existing reservoir per SP C-4			$ 36,178.00	
	1.5 Other mobilization items			$ ~~175,400.00~~	50,008,00
2.	Demolition of existing facilities, including the booster pump building and foundation, fuel system and containment, paving, chain link fences and gates, piping, and appurtenances, as shown and specified in the Contract Documents.	1	LS	$ ~~72,398.00~~	87,798.00

TABLE A
SANTA ROSA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 6, ADDITIVE BID ITEMS 7, 8, 9, 10 & 11)

Item No.	Description	Quantity	Unit	Extended Amount	
3.	Construction of Santa Rosa Reservoir No. 2, including a 1.0 million gallon (MG) nominal capacity pre-stressed concrete tank, earthwork, yard piping, fences and gates, coatings, electrical, instrumentation and controls, site lighting, disinfection, testing, startup, and all appurtenant work, complete and operable, as shown and specified in the Contract Documents.				
	Item 3 Breakdown				
	3.1 Earthwork			$ ~~204,988.00~~	224,988.00
	3.2 Tank Foundation			$ ~~122,098.00~~	147,098.00
	3.3 Tank Piping & Valving			$ ~~85,801.00~~	115,801.00
	3.4 Pre-stressed Concrete Tank			$ 3,822,348.00	
	3.5 Tank Appurtenances			$ 208,356.00	
	3.6 Tank Coating			$ ~~55,065.00~~	70,065,00
	3.7 Tank & Piping Disinfection			$ ~~31,150.00~~	31,150.00
	3.8 Testing & Startup			$ ~~2,219.00~~	12,219.00
	3.9 Electrical System			$ 119,846.00	
	3.10 Instrumentation and Control			$ 274,752.00	
	3.11 Yard Piping & Valving			$ 313,015.00	
	3.12 Inlet Vault, Meter, Valves & Piping			$ 329,168.00	
	3.13 Outlet Vault, Meter, Valves and Piping			$ 131,837.00	
	3.14 Drain Vault, Valves and Piping			$ 54,744.00	
	3.15 Check Valve Vault, Valves and Piping			$ 108,460.00	
	3.16 Overflow Manhole, and Piping			$ 65,289.00	
	3.17 Site Poles & Lighting			$ 61,905.00	
	3.18 Fencing and Gates			$ 94,313.00	
	3.19 All other appurtenant work			$ 189,896.00	
	Subtotal	1	LS	$ ~~6,265,252.00~~	6,375,252,00

TABLE A
SANTA ROSA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 6, ADDITIVE BID ITEMS 7, 8, 9, 10 & 11)

Item No.	Description	Quantity	Unit	Extended Amount	
4.	Site Grading and pavement including retaining walls, curbs, concrete gutters, headwalls, sidewalk, stormwater swales, stormwater infiltration basin and outlet structures, access road, and riprap.	1	LS	$ ~~868,792.00~~	928,792.00
5.	Construction of Control/Pump Station Building, including pumps, hydro-pneumatic tank, electrical and controls, earthwork, and all appurtenant work, complete and operable as shown and specified in accordance with the Contract Documents.	1	LS	$ ~~716,350.00~~	756,350,00
	Item 5 Breakdown				
	5.1 Control/Pump Station Building			$ 93,234.00	
	5.2 Pump System			$ 277,301.00	
	5.3 Hydro-pneumatic Tank			$ 97,365.00	
	5.4 Electrical			$ ~~143,437.00~~	153,437,00
	5.5 Controls			$ ~~30,398.00~~	40,398,00
	5.6 Piping and Valves			$ ~~8,160.00~~	28,160,00
	5.7 All other appurtenant work			$ 76,455.00	

TABLE A
SANTA ROSA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 6, ADDITIVE BID ITEMS 7, 8, 9, 10 & 11)

Item No.	Description	Quantity	Unit	Extended Amount
6.	Construction of Pressure Zone Realignment (PZR) Sites 1 through 6, including survey staking, potholing, trenching, pipe connections, piping and fittings, valves and valve boxes, backfill and paving, disinfection, testing, traffic control, and all appurtenant work, complete and operable, as shown and specified in accordance with the Contract Documents.	1	LS	$ 430,470.00
	Item 6 Breakdown			
	6.1 Site 1			$ 111,576.00
	6.2 Site 2			$ 66,564.00
	6.3 Site 3			$ 68,064.00
	6.4 Site 4			$ 60,716.00
	6.5 Site 5			$ 56,706.00
	6.6 Site 6			$ 66,844.00

TABLE A
SANTA ROSA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 6, ADDITIVE BID ITEMS 7, 8, 9, 10 & 11)

Item No.	Description	Quantity	Unit	Extended Amount
7.	Additive Bid Item: Construction of Department of Defense (DoD) Inter-Tie, within the GWA property, including survey staking, potholing, excavation, trenching, concrete vaults, pipe connections, piping and fittings, operational valves, control valves and adjustments thereto, meter with remote readouts, instrumentation and conduit, backfill, grading and gravel surfacing, bollard, disinfection, testing, and all appurtenant work, complete and operable, as shown and specified in accordance with the Contract Documents.	1	LS	$ 511,174.00
	Item 7 Breakdown			
	7.1 Concrete Vaults			$ 353,516.00
	7.2 Piping and Valves			$ 34,950.00
	7.3 Instrumentation			$ 11,020.00
	7.4 Electrical			$ 20,115.00
	7.5 All other appurtenant work			$ 91,565.00
8.	Additive Bid Item: Construction of Department of Defense (DoD) Inter-Tie, within the DoD property, including survey staking, potholing, excavation, trenching, pipe connections, piping and fittings, isolation valve, backfill, grading and reseeding, gate, disinfection, testing, and all appurtenant work, complete and operable, as shown and specified in accordance with the Contract Documents.	1	LS	$ 83,534.00
	Item 8 Breakdown:			
	8.1 Piping and Valves			$ 23,812.00
	8.2 All other appurtenant work			$ 59,722.00

TABLE A
SANTA ROSA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 6, ADDITIVE BID ITEMS 7, 8, 9, 10 & 11)

Item No.	Description	Quantity	Unit	Extended Amount
9.	Additive Bid Item: Construction of Route 1 12" Waterline, 4,042 L.F., including tie-ins, valves, fittings, pipe jumpers, ARV's, excavation, backfill, resurfacing, testing, disinfection, traffic control, and all appurtenant work, complete and operable, as shown and specified in accordance with the Contract Documents.	1	LS	$ 1,168,617.00
10.	Additive Bid Item: Demolition and disposal of existing reservoir, including foundation and appurtenances thereto.	1	LS	$ 113,123.00
11.	Additive Bid Item: Remove and dispose of reservoir foundation oiled sand (6" thick over 6" base course) as hazardous waste.	1	LS	$ 144,716.00

Table A Base Bid Subtotal $ 9,016,011.00

Table A Base Bid and Additive Bid Subtotal $ 11,037,175.00

TABLE B
SANTA RITA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 6, ADDITIVE BID ITEMS 7 & 8)

Item No.	Description	Quantity	Unit	Extended Amount	
1.	Mobilization, as specified in the Contract Documents. Item 1 Breakdown: 1.1 Move onto Site 1.2 Field Offices, fit out and utilities 1.3 Project Scheduling 1.4 Other mobilization items	1	LS	$ ~~619,994.00~~ 427,465.00 $ ~~255,262.00~~ 155,262.00 $ 126,285.00 $ 21,549.00 $ ~~216,898.00~~ 124,369.00	
2.	Repair Access Road, including removal of debris, grading, installation of two 12" water lines, installation of electrical ductbank, connections to existing water and electrical facilities at ends of repairs, testing, disinfection, and appurtenances, as shown and specified in the contract documents.	1	LS	$ ~~575,427.00~~ 525,427.00	
3.	Demolition of existing facilities, including the steel reservoir, its foundation and appurtenances thereto, paving, electrical vaults, chain link fences and gates, piping, concrete vaults, concrete swales, concrete curbs, and appurtenances, as shown and specified in the Contract Documents.	1	LS	$ ~~236,254.00~~ 261,254.00	

TABLE B
SANTA RITA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 6, ADDITIVE BID ITEMS 7 & 8)

Item No.	Description	Quantity	Unit	Extended Amount	
4.	Construction of Santa Rita Reservoir, including a 1.0 million gallon (MG) nominal capacity pre-stressed concrete tank on pile foundation, earthwork, yard piping, fences and gates, protective coating, electrical, instrumentation and controls, site lighting, disinfection, testing, startup, and all appurtenant work, complete and operable, as shown and specified in the Contract Documents.				
	Item 4 Breakdown				
	4.1 Earthwork			$ ~~233,523.00~~	253,523.00
	4.2 Foundation Piles and Base			$ ~~957,384.00~~	977,384.00
	4.3 Tank Piping & Valving			$ ~~55,134.00~~	85,134.00
	4.4 Pre-stressed Concrete Tank			$ 3,766,362.00	
	4.5 Tank Appurtenances			$ 207,815.00	
	4.6 Tank Coating			$ ~~55,085.00~~	70,085.00
	4.7 Tank & Piping Disinfection			$ ~~14,889.00~~	29,889.00
	4.8 Testing & Startup			$ ~~3,265.00~~	12,265.00
	4.9 Electrical System			$ 86,827.00	
	4.10 Instrumentation and Control			$ 143,507.00	
	4.11 Yard Piping & Valving			$ ~~81,768.00~~	87,768.00
	4.12 Inlet Vault, Meter, Valves and piping			$ 234,092.00	
	4.13 Outlet Vault, Meter, Valves and Piping			$ 127,199.00	
	4.14 Overflow Manhole and Piping			$ 105,667.00	
	4.15 Site Poles & Lighting			$ 40,619.00	
	4.16 Fencing and Gates			$ 144,940.00	
	4.17 All other appurtenant work			$ 43,631.00	
	Subtotal	1	LS	$ ~~6,393,706.00~~	6,418,706.00

TABLE B
SANTA RITA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 6, ADDITIVE BID ITEMS 7 & 8)

Item No.	Description	Quantity	Unit	Extended Amount
5.	Site Grading and pavement including curbs, concrete gutters, sidewalks, stormwater swales, storm drainage inlets and piping, headwalls, riprap, and stormwater infiltration basins and outlet structures, access roads and fencing.	1	LS	$ ~~884,347.00~~ 909,347.00
6.	Construction of Control Building, complete and operable, as shown and specified in accordance with the Contract Documents.	1	LS	$ ~~191,603.00~~ 209,132.00

7.	Additive Bid Item: Construction of Pressure Zone Realignment (PZR) Sites 1 through 12, including survey staking, demolition, potholing, trenching, pipe connections, piping and fittings, valves and vaults, backfill and paving, disinfection, testing, traffic control, and all appurtenant work, complete and operable, as shown and specified in accordance with the Contract Documents.	1	LS	$ 500,921.00
	Item 7 Breakdown			
	7.1 Site 1			
	7.1a Concrete Vault			$ 63,580.00
	7.1b Pressure Reducing Valves			$ 15,864.00
	7.1c Connections/Piping/Fittings			$ 7,932.00
	7.1d Gate Valves			$ 2,645.00
	7.2 Site 2			
	7.2a Concrete Vault			$ 68,263.00
	7.2b Pressure Reducing Valves			$ 14,488.00
	7.2c Connections/Piping/Fittings			$ 7,244.00
	7.2d Gate Valves			$ 2,416.00
	7.3 Site 3			$ 40,934.00
	7.4 Site 4			
	7.4a Concrete Vault			$ 26,832.00
	7.4b Pressure Reducing Valves			$ 15,864.00
	7.4c Connections/Piping/Fittings			$ 7,932.00
	7.4d Gate Valves			$ 2,645.00
	7.5 Site 5			$ 32,850.00
	7.6 Site 6			$ 21,389.00
	7.7 Site 7			
	7.7a Concrete Vault			$ 22,937.00
	7.7b Pressure Reducing Valves			$ 15,864.00
	7.7c Connections/Piping/Fittings			$ 7,932.00
	7.7d Gate Valves			$ 2,645.00
	7.8 Site 8			
	7.8a Concrete Vault			$ 22,937.00
	7.8b Pressure Reducing Valves			$ 15,864.00
	7.8c Connections/Piping/Fittings			$ 7,932.00
	7.8d Gate Valves			$ 2,645.00
	7.9 Site 9			$ 11,415.00
	7.10 Site 10			$ 11,415.00
	7.11 Site 11			$ 11,415.00
	7.12 Site 12			$ 37,041.00

8.	Additive Bid Item: Remove and dispose of reservoir foundation oiled sand (4" thick over 6" base course with oil surfacing) as hazardous waste.	1	LS	$ 144,720.00

Table B Base Bid Subtotal $ 8,751,331.00

Table B Base Bid and Additive Bid Subtotal $ 9,396,972.00

TABLE C
SINIFA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 5, ADDITIVE BID ITEMS 6 & 7)

Item No.	Description	Quantity	Unit	Extended Amount	
1.	Mobilization, as specified in the Contract Documents.	1	LS	$ ~~677,450.00~~	426,591.00
	Item 1 Breakdown:				
	1.1 Move onto Site			$ ~~254,667.00~~	154,667.00
	1.2 Field Offices, fit out and utilities			$ 126,847.00	
	1.3 Project Scheduling			$ 21,552.00	
	1.4 Grant of Temporary Easement for Construction			$ 19,600.00	
	1.5 Assessment of existing reservoir per SP C-4			$ 24,239.00	
	1.6 Other mobilization items			$ ~~226,545.00~~	77,686.00
2.	Demolition of existing facilities, including the pavement, electrical vaults, chain link fences and gates, piping, concrete vaults, concrete swales, concrete curbs, and appurtenances, as shown and specified in the Contract Documents.	1	LS	$ ~~140,676.00~~	158,876.00
3.	Construction of Sinifa Reservoir, including a 1.0 million gallon (MG) nominal capacity pre-stressed concrete tank, earthwork, yard piping, fences and gates, coatings, electrical, instrumentation and controls, site lighting, disinfection, testing, startup, and all appurtenant work, complete and operable, as shown and specified in the Contract Documents.	1	LS	$ ~~6,434,340.00~~	6,567,280.00
	Item 3 Breakdown				
	3.1 Earthwork			$ ~~62,743.00~~	87,743.00
	3.2 Tank Foundation			$ ~~92,894.00~~	122,894.00
	3.3 Tank Piping & Valving			$ ~~126,865.00~~	151,865.00
	3.4 Pre-stressed Concrete Tank			$ 4,460,916.00	
	3.5 Tank Appurtenances			$ 207,979.00	
	3.6 Tank Coating			$ ~~53,811.00~~	71,811.00
	3.7 Tank & Piping Disinfection			$ ~~16,666.00~~	31,006.00

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TABLE C
SINIFA RESERVOIR BID SCHEDULE

(BASE BID ITEMS NO. 1 – 5, ADDITIVE BID ITEMS 6 & 7)

Item No.	Description	Quantity	Unit	Extended Amount	
	3.8 Testing & Startup			$ 37,487.00	
	3.9 Electrical System			$ ~~65,076.00~~	85,076.00
	3.10 Instrumentation and Control			$ 161,811.00	
	3.11 Yard Piping & Valving			$ 143,835.00	
	3.12 Inlet Vault, Meter, Valves & Piping			$ 250,180.00	
	3.13 Outlet Vault, Meter, Valves and Piping			$ 132,251.00	
	3.14 Drain Vault, Valves and Piping			$ 55,182.00	
	3.15 Check Valve Vault, Valves and Piping			$ 127,308.00	
	3.16 Overflow Manhole, and Piping			$ 127,725.00	
	3.17 Site Poles & Lighting			$ 171,618.00	
	3.18 Fencing and Gates			$ 75,419.00	
	3.19 Fuel System Improvements			$ 45,716.00	
	3.20 All other appurtenant work			$ 20,358.00	
	Subtotal	1	LS	$ ~~6,434,346.00~~	6,567,280.00
4.	Site Grading and pavement including retaining walls, curbs, off-site driveway, concrete gutters, headwalls, sidewalks, stormwater swales, storm drainage structures and piping, infiltration basins, riprap, and access roads.	1	LS	$ ~~1,137,791.00~~	1,177,791.00
5.	Construction of Control Building, complete and operable, as shown and specified in accordance with the Contract Documents.	1	LS	$ ~~259,851.00~~	319,770.00

TABLE C SINIFA RESERVOIR BID SCHEDULE (BASE BID ITEMS NO. 1 – 5, ADDITIVE BID ITEMS 6 & 7)				
Item No.	Description	Quantity	Unit	Extended Amount
6.	Additive Bid Item: Demolition and disposal of existing reservoir, including foundation and appurtenances thereto.	1	LS	$ 113,122.00
7.	Additive Bid Item: Remove and dispose of reservoir foundation oiled sand (6" thick over 6" base course) as hazardous waste.	1	LS	$ 147,720.00

Table C Base Bid Subtotal $ 8,650,308.00
Table C Base Bid and Additive Bid Subtotal $ 8,911,150.00

Table A, B, and C Base Bid Total $ 26,417,650.00

Table A, B, and C Base Bid and Additive Bid Total $ 29,345,297.00

TOTAL BASE BID PRICE FOR THE BID SCHEDULE (Table A, B and C)

For the lump sum of:

$ 26,417,650.00
(Price in Figures)

TWENTY SIX MILLION FOUR HUNDRED SEVENTEEN THOUSAND SIX HUNDRED FIFTY DOLLARS AND NO CENTS.
(Price in Words)

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents. Bidder also acknowledges that each unit price includes an amount considered by Bidder to be adequate to cover Bidder's overhead and profit for each separately identified item.

TIME OF COMPLETION

Bidder agrees that the furnishing of Goods and Special Services will conform to the schedule set forth in Article 5 of the Agreement.

Bidder accepts the provisions of the Agreement as to liquidated damages.

ATTACHMENTS TO THIS BID

The following documents are attached to and made a condition of this Bid:

Required Bid security in the form of Bid Bond.

List of Proposed Major Suppliers;

Required Bidder Qualification Statement with Supporting Data.

DEFINED TERMS

The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

BID SUBMITTAL

This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): Not Applicable

By: _____
(Individual's signature)

Doing business as: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____ _____

A Partnership

Partnership Name: Not Applicable (SEAL)

By: _____
(Signature of general partner - attach evidence of authority to sign)

Name (typed or printed): _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

A Corporation

Corporation Name: AIC International, Inc.

State of Incorporation: Guam

Type (General Business, Professional, Service, other): General Contractor

By: _____
(Signature - attach evidence of authority to sign)

Name (typed or printed): Henry Stewart

Title: President

(CORPORATE SEAL)

Attest _____
(Signature of Corporate Secretary)

Business address: P.O. Box DR, Hagatña Guam 96932

_____

Phone: (671) 565-9142 Facsimile: (671) 565-9145

E-mail address: henry@aicconstruction.com

A Limited Liability Company (LLC)

LLC Name: Not Applicable

State in which organized: _____

By: _____
(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

A Joint Venture

First Joint Venturer Name: Not Applicable (SEAL)

By: _____
(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____
(Signature - attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

Business address: _____

_____

Phone: _____ Facsimile: _____

E-mail address: _____

Phone and Facsimile Number, and Address for receipt of official communications to Joint Venture: _____

_____

_____

(Each joint venturer must sign. The manner of signing for each individual, partnership, corporation, and limited liability company that is a party to the joint venture should be in the manner indicated above.)

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

Regular Board Meeting
GUAM POWER AUTHORITY
CCU Conference Room, Gloria B. Nelson Public Service Building
5:30 p.m., August 29, 2019

AGENDA

1. CALL TO ORDER

2. APPROVAL OF MINUTES

3. COMMUNICATIONS
   - 3.1 Public Comments (2 min. per person)

4. GPA
   - 4.1 New Business
   - 4.1.1 GM Report
   - 4.1.2 Financials
   - 4.1.3 Resolution No. 2019-13 Approval of Energy Conversion Agreement [ECA} for New 198MW Combined Cycle Power Plant

5. ANNOUNCEMENTS
   - 6.1 Next CCU Meetings: GWA Work Session – 9/17/19; GPA Work Session – 9/19/19; CCU Regular Monthly Meeting – 9/24/19

6. ADJOURNMENT

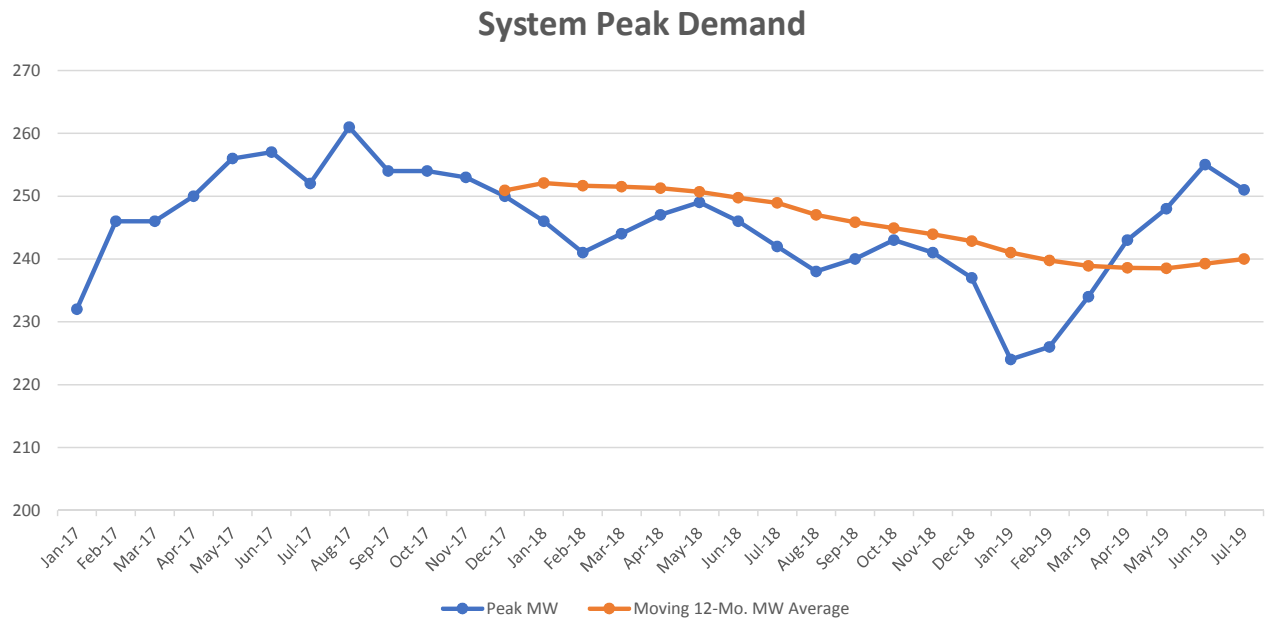
GENERAL MANAGER'S REPORT

AUGUST 2019

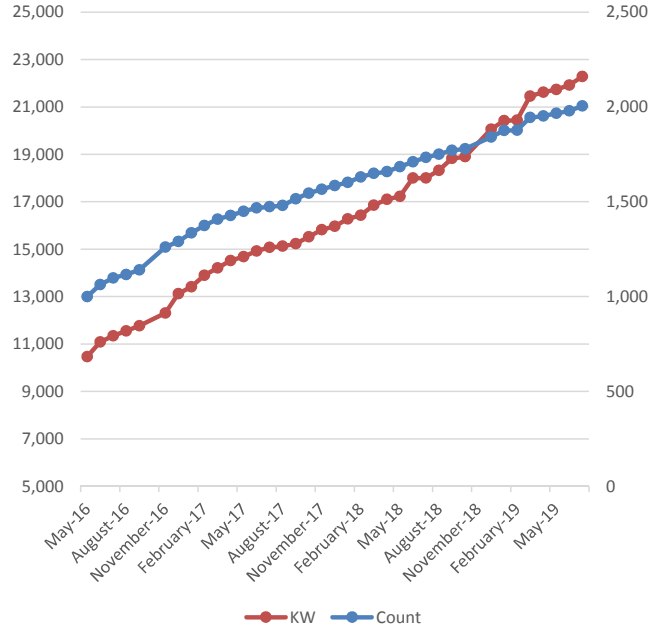
1. **Generation System:** The following summarizes the generation forecast for September 2019:

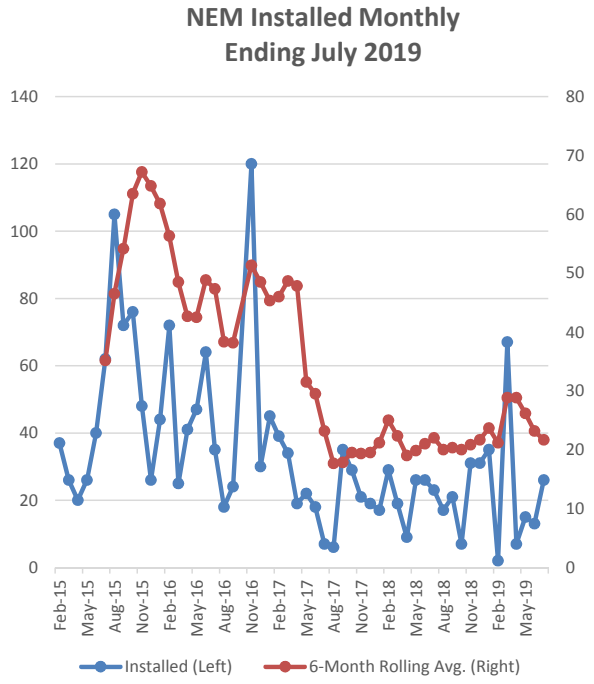
   Projected Available Capacity: 370 MW
   Projected Demand: 258 MW
   Anticipated Reserve Margin: 112 MW

   - The following updates monthly peak demands ending August 20, 2019:



2. Net Metering (NEM) Growth:





3. **Demand Side Management (DSM)**
   Program directly reduces energy cost to customer at a one time fixed rebate.
   GPA currently funded $4.3M from base rate.

DSM EXPENSE SUMMARY

Description	FY16	FY17	FY18	FY19 thru 7/31/19*	Total to Date
Regular/OT Pay	$11,348.80	$22,256.00	$26,121.83	$40,920.10	$100,646.73
Other Contractual	$28,278.50	$85,550.05	$116,977.50	$3,025.00	$233,831.05
Ads & Radio Announcements	-	-	-	$7,500.00	$7,500.00
Paid Rebates-Split AC	$154,700.00	$557,275.00	$1,349,825.00	$856,200.00	$2,918,000.00
Paid Rebates- Central AC	$3,400.00	$8,200.00	$4,400.00	$5,000.00	$21,000.00
Paid Rebates- Washer/Dryer	$2,800.00	$7,425.00	$57,200.00	$77,800.00	$145,225.00
Total Expenses	**$200,527.30**	**$680,706.05**	**$1,554,524.33**	**$990,445.10**	**$3,426,202.78**

4. **FY'2020 Budget:**

   - The FY 2020 budget will be presented in the September work session

5. **New 180 MW Power Plant:**

   - The New Power Plant issue will be presented to the CCU in the August work session August 22, 2019.

6. **PUC Dockets: The following dockets are on PUC agenda for their August meeting**

   - GPA Docket 19-01, Petition for Award of Contract for the Out of Service Inspection and Refurbishment of GPA Bulk Storage Fuel Tanks
   - GPA Docket 19-12, Petition for Award of Contract for the Supply of Diesel

7. **GPA and GDOE BEST Schools Energy Project:**

   - A story was published on the Guam PDN GDOE Supplement on Aug. 19, 2019 on GPA and GDOE's BEST School Energy Project that launched on May 2018. It highlighted our partnership and commitment to assist GDOE. The GPA/GDOE BEST Schools Projects supports CCU's goal to assist GDOE achieve energy cost reduction thru energy efficiency programs. I've attached the story from the Guam PDN for reference.

8. GPA Awards and Recognition:

- On July 10, 2019 Environmental Systems Research Institute (ESRI), the International Supplier of GIS software, Web GIS and Geodatabase recognized GPA as the first in the world electric distribution utility to operate business critical functions on ESRI's Utility Network. A **Special Achievement in GIS** (SAG) award was presented to GPA at the ESRI User Conference in San Diego, CA this past July. Several articles have been written on this, which include the SmartGrid Today and Power Engineers national publications. Kudos to our Team for this achievement award and recognition!

- On July 30, 2019 APPA's Public Power Daily published an article entitled, " Guam Power Authority taps drone to digitally map infrastructure." The article centered around GPA Engineering's pilot project to map out Guam's island wide power system utilizing unmanned aerial vehicles (UAV). This project was of interest to APPA because of its success in utilizing UAV technology to constantly improve reliability.

9. 2019 Vendor Outreach:

- GPA's first annual Vendor Outreach event was held from 9:00 a.m. – 11:00 a.m. on July 30 & 31, 2019 in the GBN Procurement conference room, to provide current and potential vendors an overview of the local government procurement process and requirements, and the Authority's past and current tenders. Seventy-Five attendees registered and/or updated their business information with Procurement/Supply personnel. I have attached some highlights of event. The successful event was well-received. The next Vendor Outreach event is tentatively scheduled for June 2020.

10. Updated Metrics: The following are updates on key metrics

DOI $1.25M Grant Award GPA and GDOE BEST Schools Energy Projects

In a collaborative effort between the Guam Power Authority (GPA) and the Guam Department of Education (GDOE), the Bringing Energy Savings to Schools Project, or "BEST" Schools Project, was launched on May 16, 2018. The GPA/GDOE BEST Schools Project supports GPA's goal to help GDOE achieve its legislative mandate to deploy and utilize green energy. The program also provides an incentive for GDOE to reduce its energy use and expenditures, while modernizing infrastructure and extending the life of energy equipment with enhanced, proactive maintenance routines.

On September 28, 2018, the Department of the Interior Office of Insular Affairs Energizing Insular Communities Program awarded GPA a $1.25 million grant award for LED lighting retrofits at two GDOE high schools. The grants earmarked $954,685 for Southern High School in Santa Rita and $295,315 for George Washington High School in Mangilao.

The Siemens Industry, Inc. Smart Infrastructure Division is working in collaboration with GPA's Strategic Planning & Operations Research Division (SPORD) engineers and Engineering & Technical Services managers to provide energy solutions to support GDOE's energy goals. These energy goals including reducing energy consumption by a minimum of 10 percent.

Siemens conducted a Preliminary Feasibility Assessment of all 41 GDOE elementary, middle and high schools. Following the review of the Preliminary Feasibility Assessment, GPA and GDOE selected B.P. Carbullido Elementary School as a pilot school for energy efficiency enhancements. GPA, GDOE, and Siemens will retrofit Carbullido Elementary School, to include LED lighting, solar assisted air conditioning, and other energy efficiency technologies. Work on all of these energy-efficient projects for GDOE schools began in June 2019.



GPA engineers Victor Torres and Jessica Lazitan evaluate plans and the work in progress at the GDOE B.P. Carbullido Elementary School site on July 5, 2019. The school was selected as a pilot school for energy efficiency enhancements and will be retrofitted to include LED lighting, solar assisted air conditioning, and other energy efficiency technologies, of one of the GPA/GDOE BEST Schools Project(s). GPA, GDOE and the Siemens Industry, Inc. Smart Infrastructure Division are the project partners supporting the improvements at the school.

"GPA will work with our partner-stakeholders, to include the Guam Department of Education leadership, school administration, facilities maintenance, Siemens and their lighting and electrical subcontractors through to completion," said GPA General Manager John M. Benavente, P.E. "And, at the end, we will all stand proud of this valuable work which will ultimately have benefited Guam's school children," Benavente concluded.

SIEMENS
Ingenuity for life

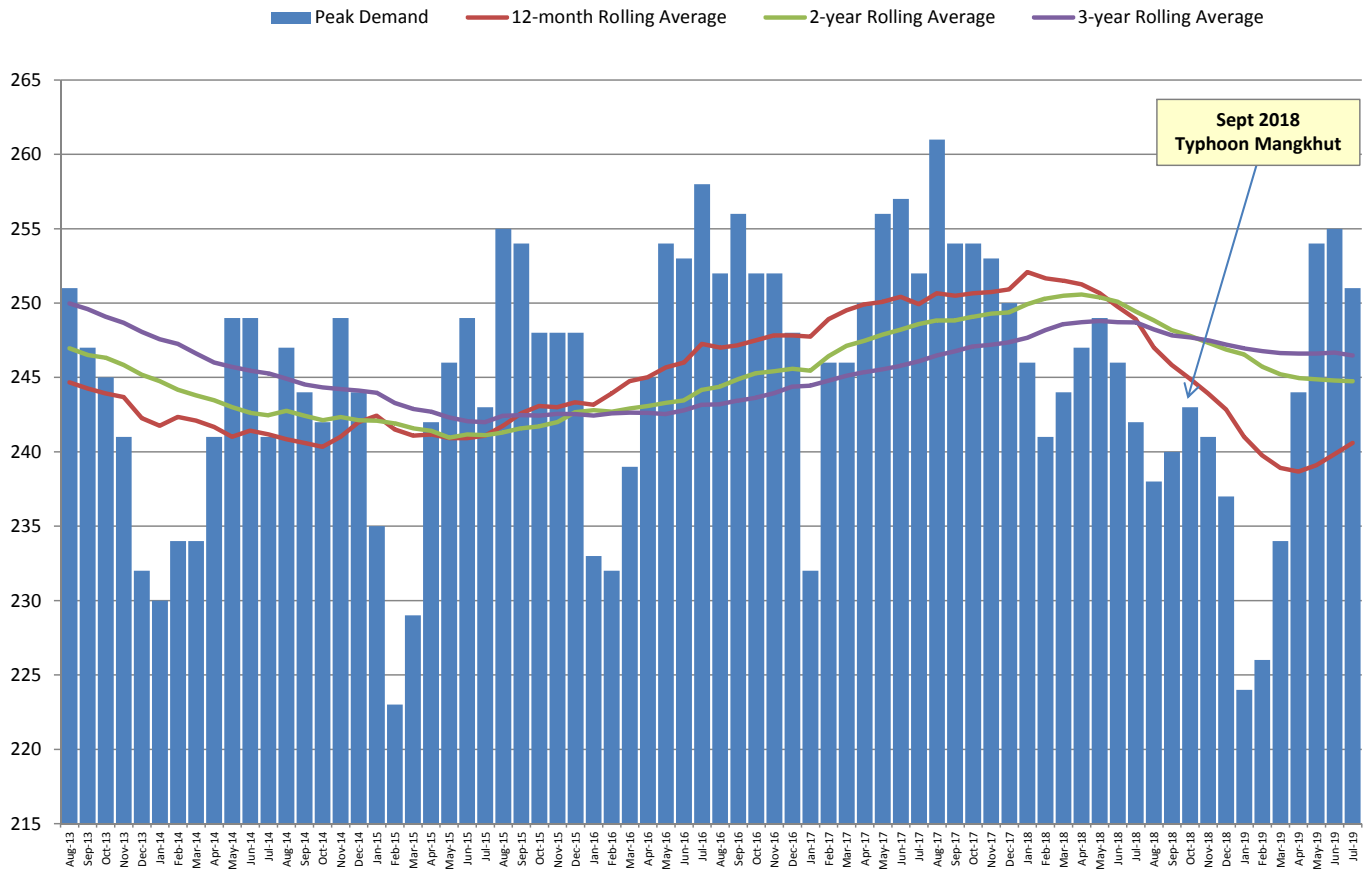
"The high cost of supporting our schools' energy needs - whether it be lighting for after-school sports activities, or air-conditioning to support comfortable learning environments - continues to grow from year to year," GDOE Superintendent Jon Fernandez said. "It is important to invest in energy efficient technologies that will benefit not only our environment, but our department's ability to invest funding in resources that will provide greater supports for teachers and classrooms. I want to thank GPA for partnering with our schools to make this important project a reality."

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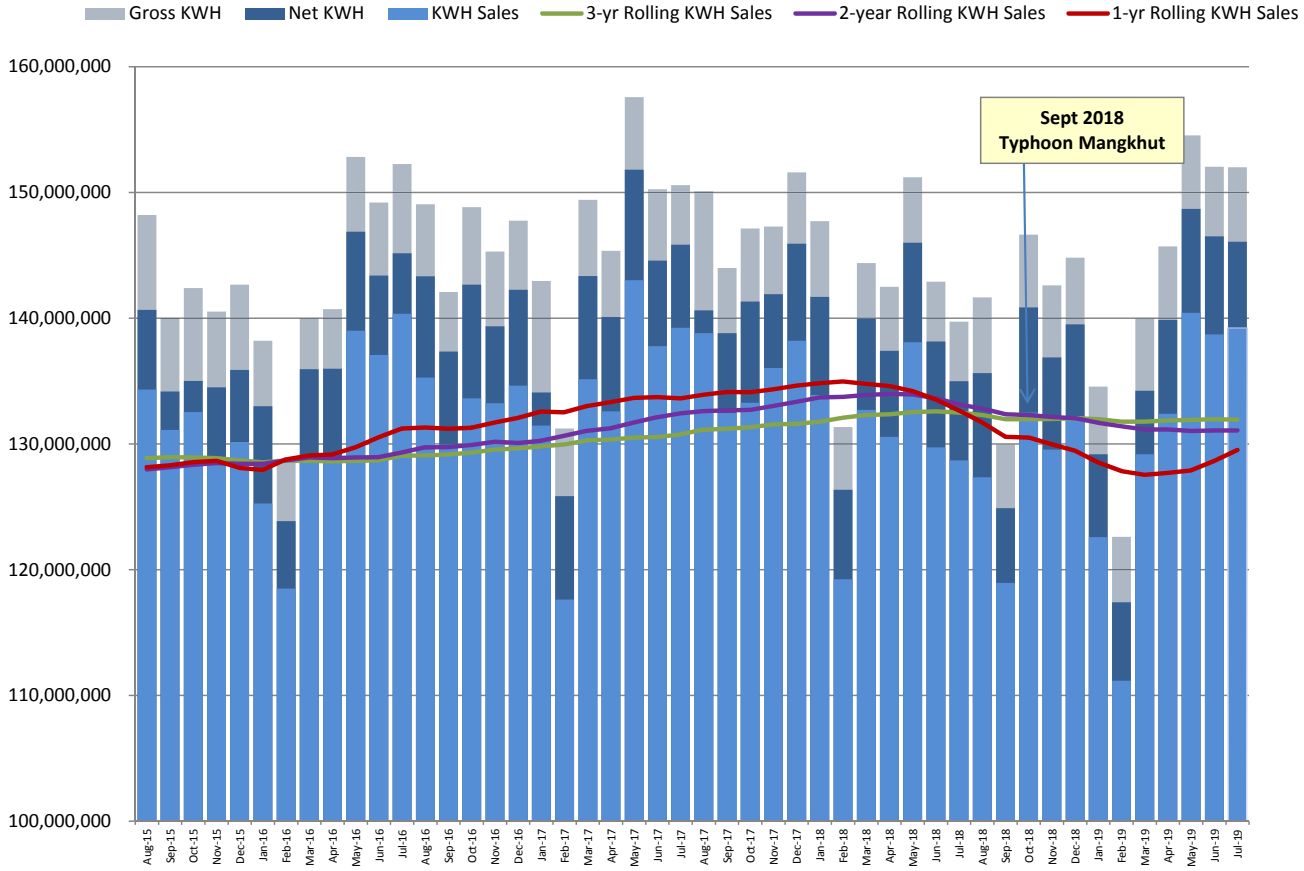
2019 Vendor Outreach

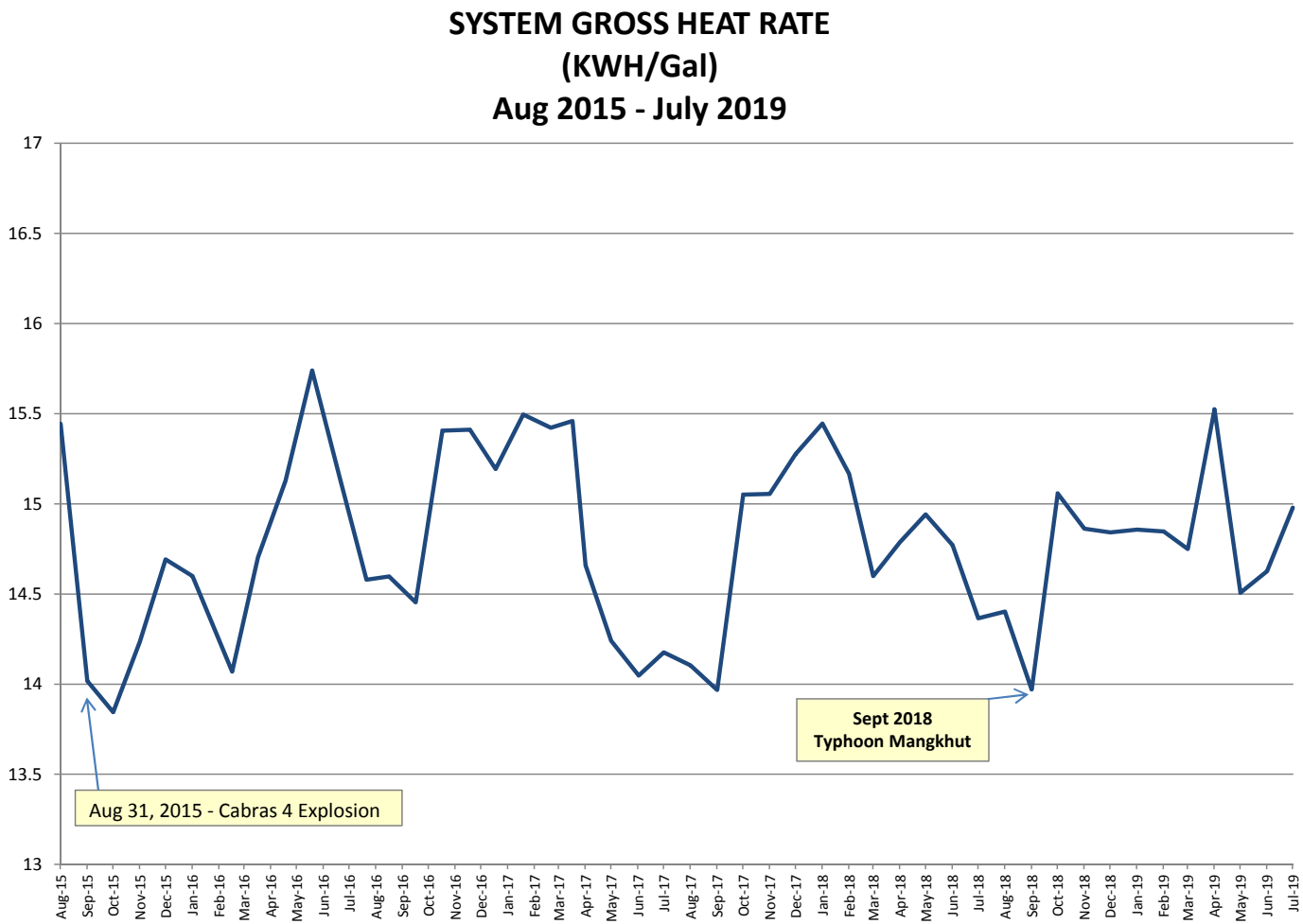


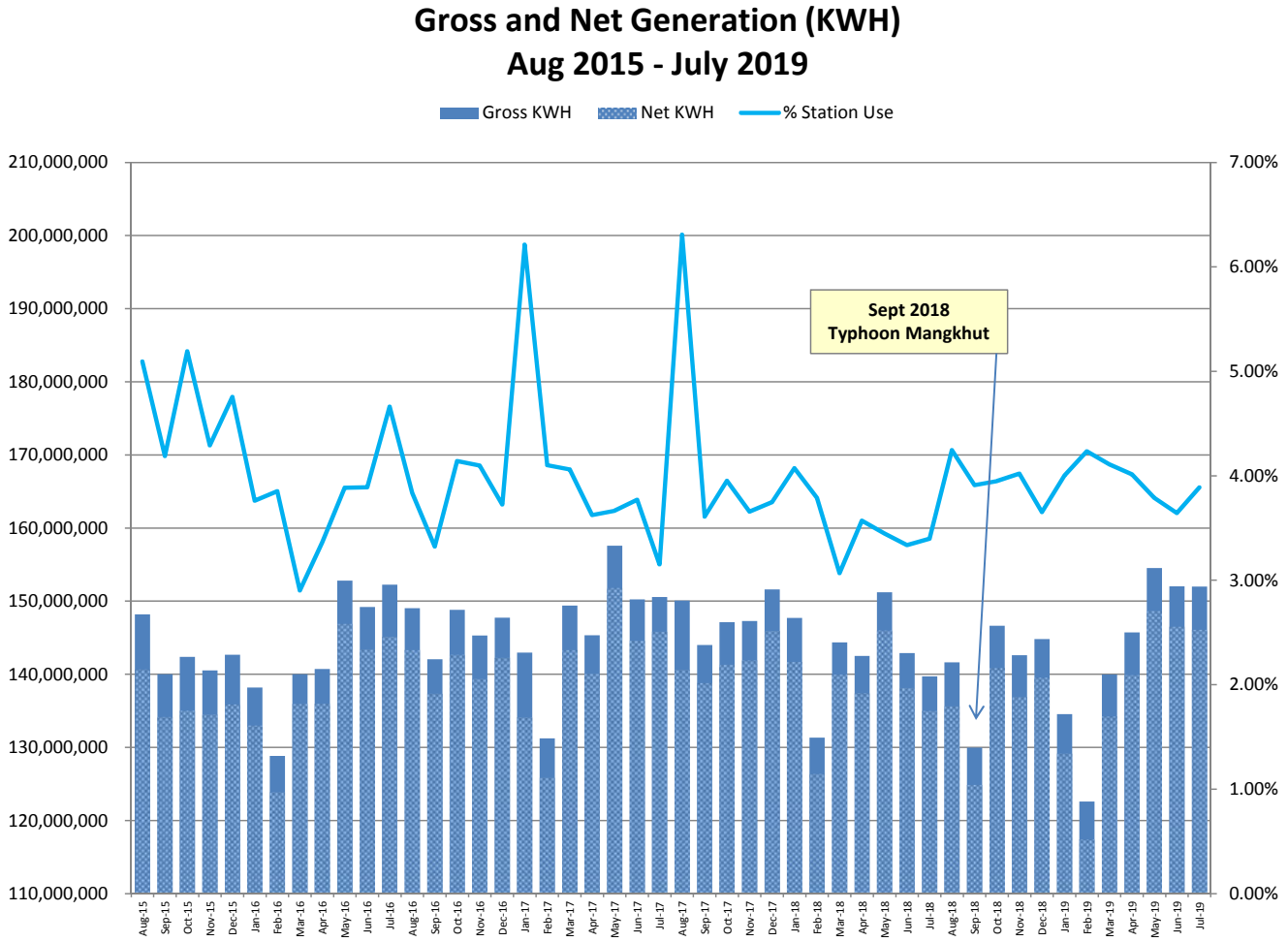
Historical Monthly Peak Demand
Aug 2013 - July 2019



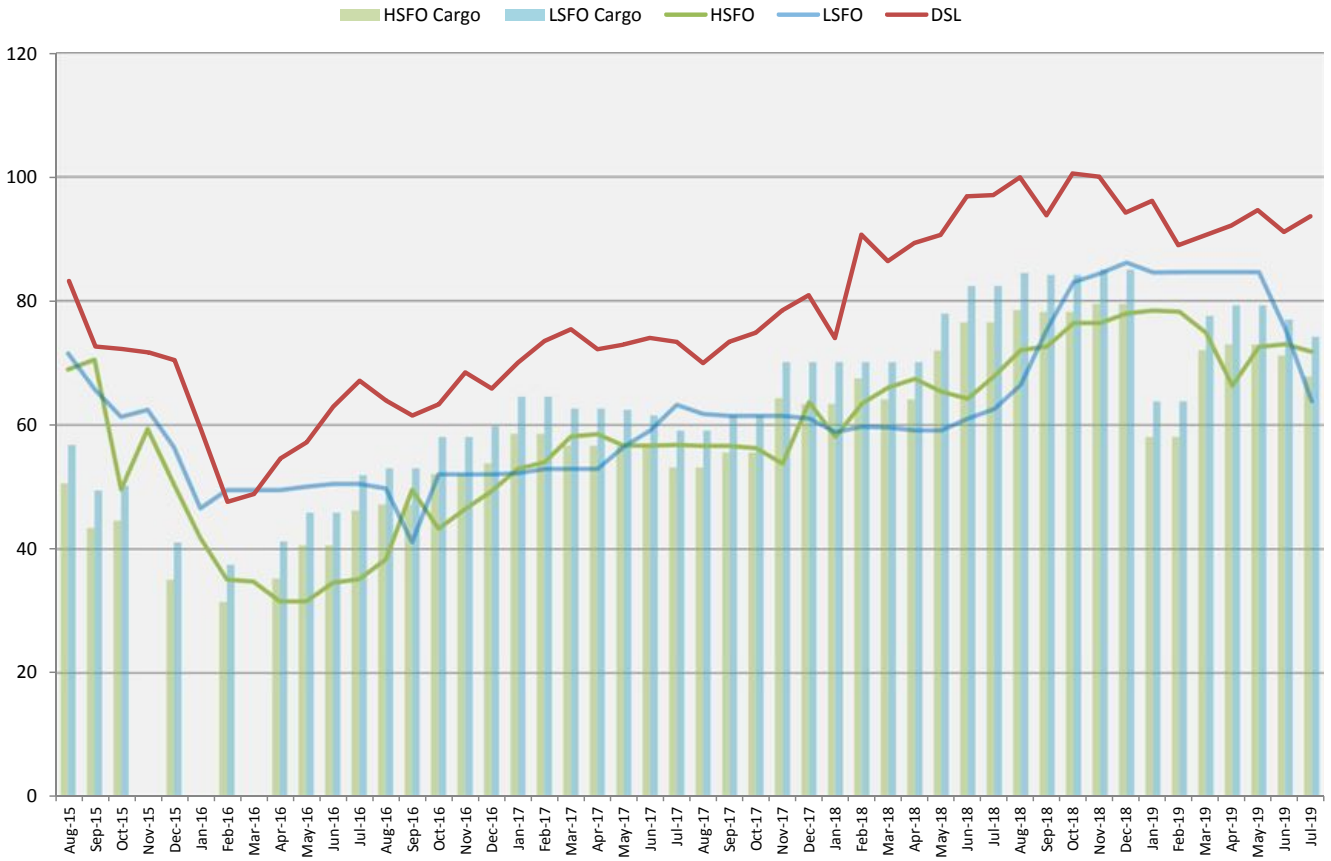
Historical KWH Sales
Aug 2015 - July 2019




SYSTEM GROSS HEAT RATE
(KWH/Gal)
Aug 2015 - July 2019
17
16.5
16
15.5
15
14.5
14
13.5
13
Aug 31, 2015 - Cabras 4 Explosion
Sept 2018
Typhoon Mangkhut
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
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May-16
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Jul-19

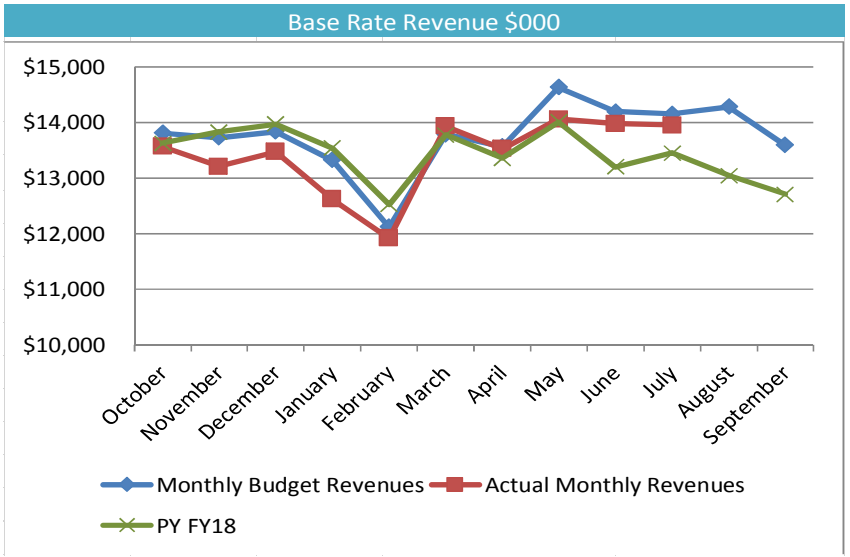

Gross and Net Generation (KWH)
Aug 2015 - July 2019
Gross KWH
Net KWH
% Station Use
Sept 2018
Typhoon Mangkhut
210,000,000
200,000,000
190,000,000
180,000,000
170,000,000
160,000,000
150,000,000
140,000,000
130,000,000
120,000,000
110,000,000
7.00%
6.00%
5.00%
4.00%
3.00%
2.00%
1.00%
0.00%
Aug-15
Sep-15
Oct-15
Nov-15
Dec-15
Jan-16
Feb-16
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Jul-19

Fuel Cargo and Fuel Consumption Costs ($/bbl)
Aug 2015 - July 2019

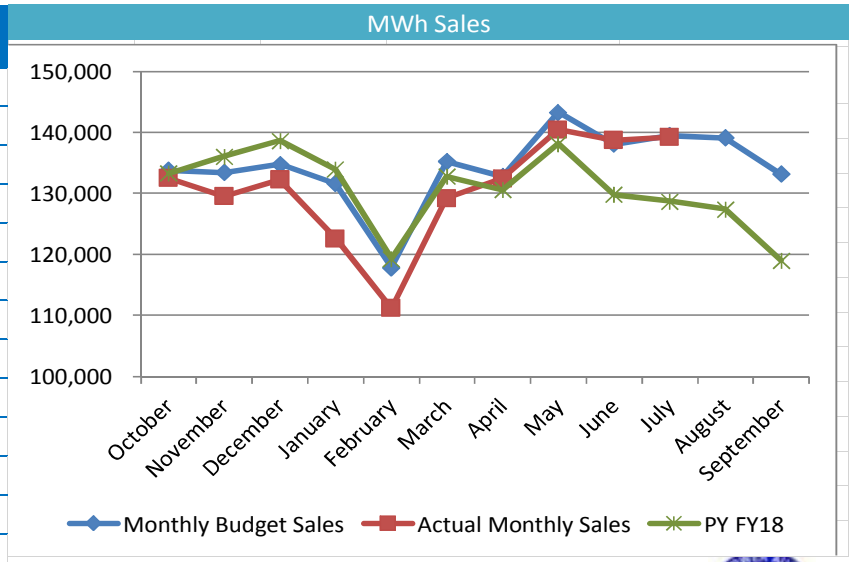


July 2019 Monthly Financial Highlight

$000	Monthly Budget Revenues	Actual Monthly Revenues	Variance		PY FY18	CY vs PY Variance	
October	$ 13,811	$ 13,564	$ (246)	↓	$ 13,625	$ (61)	↓
November	13,723	13,203	$ (519)	↓	13,827	$ (624)	↓
December	13,833	13,467	$ (365)	↓	13,968	$ (501)	↓
January	13,321	12,616	$ (705)	↓	13,534	$ (918)	↓
February	12,114	11,915	$ (199)	↓	12,522	$ (607)	↓
March	13,790	13,926	$ 135	↑	13,776	$ 150	↑
April	13,562	13,520	$ (42)	↓	13,351	$ 169	↑
May	14,630	14,057	$ (573)	↓	14,011	$ 46	↑
June	14,196	13,977	$ (219)	↓	13,201	$ 776	↑
July	14,152	13,951	$ (202)	↓	13,446	$ 504	↑
August	14,280				13,041		
September	13,590				12,707		
Total	**$ 165,002**	**$ 134,197**	**$ (2,935)**	↓	**$ 161,010**	**$ (1,065)**	↓

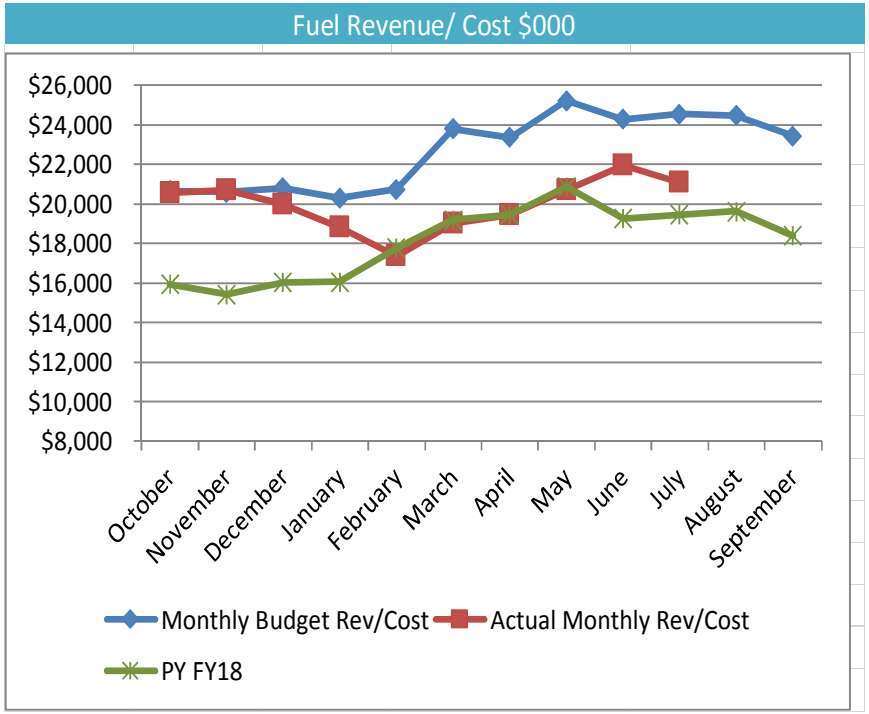


gwh	Monthly Budget Sales	Actual Monthly Sales	Variance		PY FY18	CY vs PY Variance	
October	133,797	132,489	(1,308)	↓	133,262	(773)	↓
November	133,346	129,537	(3,809)	↓	136,044	(6,506)	↓
December	134,715	132,190	(2,525)	↓	138,587	(6,397)	↓
January	131,547	122,590	(8,958)	↓	133,882	(11,292)	↓
February	117,775	111,159	(6,616)	↓	119,241	(8,082)	↓
March	135,196	129,170	(6,026)	↓	132,693	(3,523)	↓
April	132,763	132,396	(367)	↓	130,565	1,830	↑
May	143,236	140,412	(2,824)	↓	138,085	2,327	↑
June	138,016	138,704	688	↑	129,728	8,976	↑
July	139,434	139,204	(230)	↓	128,681	10,523	↑
August	139,030				127,348		
September	133,149				118,935		
Total	**1,612,003**	**1,307,850**	**(31,974)**	↓	**1,567,052**	**(12,919)**	↓



July 2019 Monthly Financial Highlight (Continued)

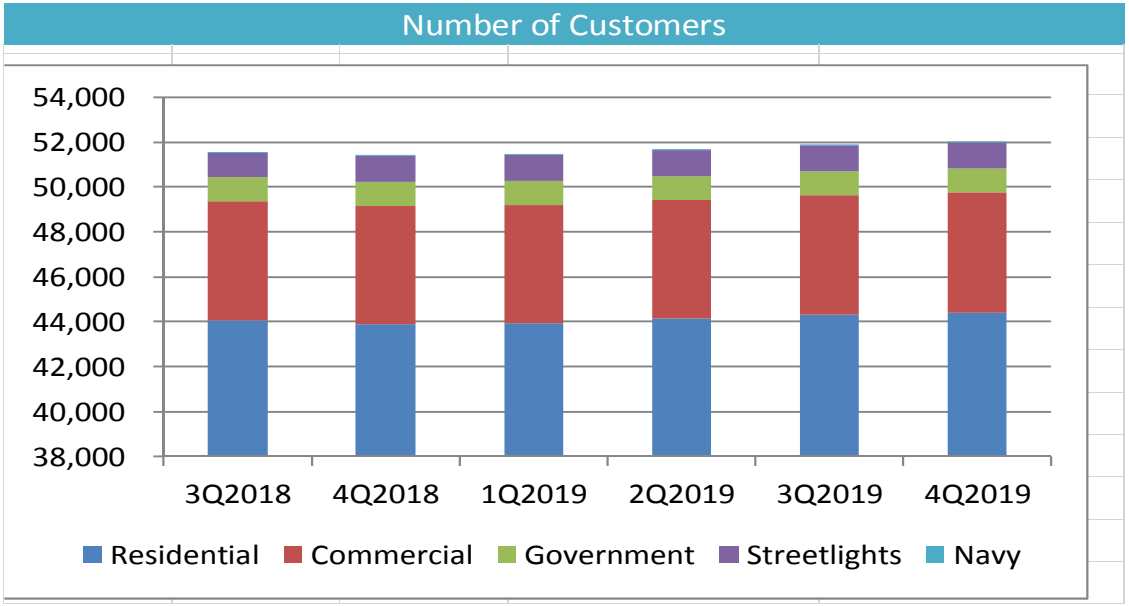
$000	Monthly Budget Rev/Cost	Actual Monthly Rev/Cost	Variance		PY FY18	CY vs PY Variance	
October	$ 20,637	$ 20,550	$ (87)	↓	$ 15,936	$ 4,615	↑
November	20,568	20,711	$ 143	↑	15,400	$ 5,310	↑
December	20,779	19,969	$ (810)	↓	16,007	$ 3,961	↑
January	20,290	18,822	$ (1,468)	↓	16,036	$ 2,785	↑
February	20,718	17,368	$ (3,350)	↓	17,763	$ (395)	↓
March	23,783	19,017	$ (4,765)	↓	19,180	$ (163)	↓
April	23,354	19,442	(3,912)	↓	19,441	2	↑
May	25,197	20,711	(4,486)	↓	20,854	(143)	↓
June	24,279	21,932	(2,347)	↓	19,252	2,680	↑
July	24,528	21,082	(3,446)	↓	19,457	1,624	↑
August	24,457				19,608		
September	23,422				18,390		
Total	**$ 272,011**	**$ 199,603**	**$ (24,529)**	↓	**$ 217,324**	**$ 20,277**	↑



- Under recovery of LEAC - $10.2 million

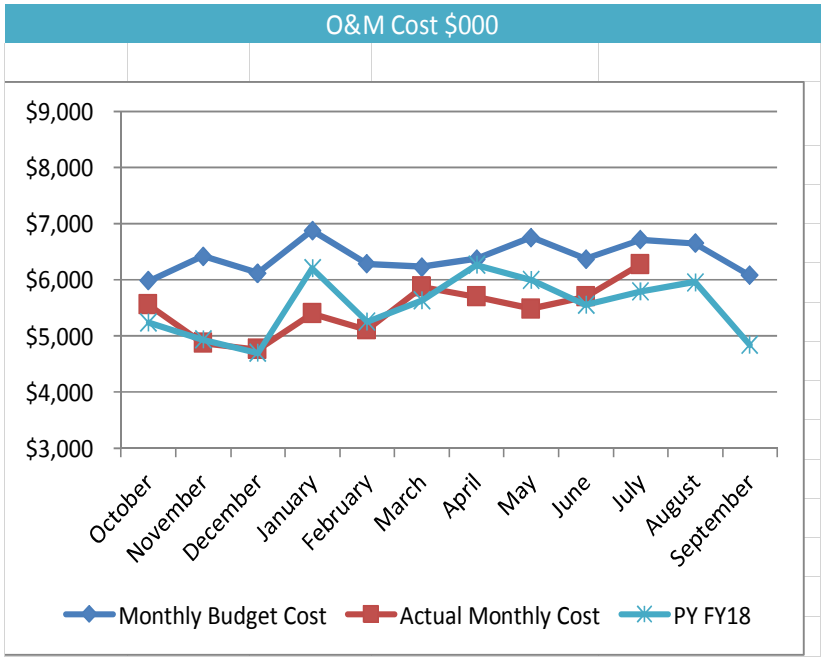
July 2019 Monthly Financial Highlight (Continued)

	3Q2018	4Q2018	1Q2019	2Q2019	3Q2019	4Q2019
Residential	44,074	43,887	43,920	44,144	44,329	44,408
Commercial	5,278	5,261	5,273	5,291	5,303	5,333
Government	1,092	1,077	1,090	1,074	1,075	1,095
Streetlights	1,091	1,152	1,151	1,152	1,138	1,138
Navy	1	1	1	1	1	1
	51,536	51,378	51,435	51,662	51,846	51,975



July 2019 Monthly Financial Highlight (Continued)

$000	Monthly Budget Cost	Actual Monthly Cost	Variance		PY FY18	CY vs PY Variance	
October	$ 5,986	5,551	435	↑	5,239	(312)	↓
November	6,419	4,875	1,544	↑	4,941	66	↑
December	6,119	4,762	1,358	↑	4,694	(68)	↓
January	6,882	5,399	1,483	↑	6,204	805	↑
February	6,291	5,114	1,177	↑	5,252	138	↑
March	6,231	5,869	362	↑	5,638	(231)	↓
April	6,374	5,704	670	↑	6,269	565	↑
May	6,753	5,485	1,268	↑	6,005	520	↑
June	6,373	5,703	670	↑	5,558	(145)	↓
July	6,710	6,276	434	↑	5,797	(479)	↓
August	6,648				5,961		
September	6,079				4,836		
Total	**$ 76,866**	**$ 54,738**	**$ 9,401**	↑	**$ 66,394**	**$ 859**	↑



Debt service coverage (DSC) calculation-indenture	2014	2015	2016	2017	2018	YTD June 2019
Senior lien coverage	3.16	3.62	3.28	2.65	2.53	1.99
Aggregate debt service coverage	1.98	2.62	3.28	2.65	2.53	1.99
Debt service coverage (DSC) calculation-IPP as O&M						
Senior lien coverage	2.55	2.56	2.45	1.79	1.65	1.63
Aggregate debt service coverage	1.41	1.85	2.45	1.79	1.65	1.63

GUAM POWER AUTHORITY
ATURIDÅT ILEKTRESEDÅT GUAHAN
P.O.BOX 2977 • AGANA, GUAM U.S.A. 96932-2977

Issues for Decision

Resolution No. 2019-13:

Relative to Approving the Energy Conversion Agreement (ECA) for the New Dual Fuel Power Plant and Authorizing Guam Power Authority to Petition the Guam Public Utilities Commission (GPUC) to Approve the ECA with Korea Electric Power Company (KEPCO)

What is the project's objective? Is it necessary and urgent?
The commissioning of the *new dual fuel power plant* is critical to meeting GPA's Compliance Plan with USEPA. Discussions and negotiations for a consent decree are currently ongoing between GPA and USEPA. GPA's plan is to have all power plants compliant with USEPA regulations, which includes the retirement of Cabras 1 & 2, and the conversion of MEC 8 & 9 to use ULSD.

The *new dual fuel power plant* will provide high reliability and substantial O&M savings, while burning less fuel when compared to the aging Cabras power plants. The fuel efficiency savings will reduce the initial cost of using a more expensive, though cleaner fuel. The new dual fuel power plant will reduce GPA's annual fuel consumption by about 35 million gallons of fuel per year.

Under the ECA**,** KEPCO's proposal is to build, finance, operate and transfer ownership to GPA after twenty-five years a new dual fuel power plant for a total firm capacity of **198 MW** consisting of three (3) Siemens SGT-800 45 MW combustion turbines for total MW capacity of 135 MW; and one (1) 63 MW Siemens steam turbine. The proposal also included for increased reliability and to meet the guaranteed 96% availability, one (1) 25 MW Battery Energy Storage System (BESS) to improve reliability; and 64 MW of additional small diesel generators to further insure reliability.

The *new dual fuel power plant* can also burn natural gas which is much less expensive than ULSD. Converting from ULSD to LNG would significantly lower fuel costs for ratepayers even more. The *new dual fuel power plant* is projected to lower the average residential power bill by 7.95%, while burning ULSD, once completed in 2023. All other rate classes would also benefit from similar reductions in their power bill.

If GPA is eventually permitted to use LNG instead of ULSD as a fuel source, average residential power bills are projected to be lower by 21.15%, with similar savings for all other rate classes. The technology mix proposed by the new plant will allow for the addition of more renewable energy assets in the future, which would further lower ratepayer power bills while also reducing the amount of fuel used for energy and Guam's carbon footprint. These potential savings are not attainable unless GPA is first allowed to enter into an ECA with KEPCO.

Where is the location?
Harmon (Ukudu) Area

How much will it cost?
25-year Net Present Value cost of $3,121,230,000

When will it be completed?
Commissioning the new power plant by October 2022

What is its funding source?
Base Rate, LEAC and Cabras 3 & 4 Insurance Proceeds

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671)649-3002 | guamccu.org

RESOLUTION NO. 2019-013

Relative to Approving the Energy Conversion Agreement (ECA) for the New Dual Fuel Power Plant and Authorizing the Guam Power Authority (GPA) to Petition the Guam Public Utilities Commission (GPUC) to Approve the Energy Conversion Agreement (ECA) with Korea Electric Power Company (KEPCO)

WHEREAS, Integrated Resources Planning (IRP) is a public process in which GPA planners work together with other interested stakeholders to identify and prepare energy options that serve the highest possible public good at the lowest cost. The IRP process is a conversation between the Authority, its customers, regulators, and other stakeholders on Guam's Energy Future; and

WHEREAS, in 2008 the Consolidated Commission on Utilities (CCU) approved GPA's IRP which recommended to continue development of renewable energy resources, to improve fuel efficiencies through modern technology and to seek opportunities for diversifying to lower cost and cleaner fuel sources, including the potential to use Liquefied Natural Gas (LNG) as an alternate fuel source; and

WHEREAS, in 2008, the CCU and GPA worked with the late Speaker Ben Pangelinan, the Guam Legislature and Governor Felix Camacho to pass P.L. 29-62 to establish Guam's first Renewal Portfolio Standard (RPS). The public policy set a goal to have no less than 25% of Guam's electricity to be provided by renewable energy sources by 2035 in order to reduce Guam's exclusive energy dependency on oil and to reduce the island's carbon footprint; and

WHEREAS, in FY2013 GPA updated its Integrated Resource Plan (IRP) to address new U.S. Environmental Protection Agency (USEPA) regulations on emissions by recommending a generation resource plan which included fuel conversion from residual fuel oil to Ultra-Low Sulfur Diesel (ULSD) Fuel Oil and LNG, replacement of older, less fuel efficient and high production cost generating units with new, more fuel efficient, lower operating cost generating units, which would also allow for even more renewable energy assets to be added to the system; and

WHEREAS, on October 27, 2014 the Consolidated Commission on Utilities (CCU) authorized GPA in Resolution 2014-48 to petition the Guam Public Utilities Commission (PUC) for approval of the procurement of a new dual fuel power plant; and

WHEREAS, GPA's justification for procuring a new dual fuel power plant was the need to lower rate payer costs by reducing the amount of fuel needed to supply Guam's power, and for

base load generating units to come into compliance with certain environmental regulations issued by the United States Environmental Protection Agency (USEPA) under the Clean Air Act, which include the RICE-MACT regulations (slow-speed generations), EGU-MACT regulations (steam generators); and

WHEREAS, the PUC in its January 29, 2015 order, rejected GPA's petition for approval of the procurement of a new dual fuel power plant, and stated that the petition does not present sufficient evidence that the proposed new power plant is justified; and

WHEREAS, on January 30, 2015, GPA submitted its proposed compliance schedule to USEPA which detailed GPA's plans to construct a new dual fuel power plant no later than September 30, 2019, retire all four Cabras steam plants, and to convert MEC 8 & 9 units to ULSD within one year after the commissioning of the new power plant; and

WHEREAS on March 24, 2015, CCU Resolution 2015-21 authorized GPA to petition the PUC for approval of procurement documents for engineering and technical consulting services to support implementing the USEPA compliance plan which includes procurement, contracting, construction and commissioning support for a dual fuel power plant; and

WHEREAS, on May 28, 2015 the PUC in its order in GPA Docket 15-05 deferred GPA's request to begin procurement for new engineering and technical consulting services relating to the new dual fuel power plant; and

WHEREAS, on August 31, 2015 an explosion and fire occurred at GPA's Cabras 3 & 4 power plants resulting in the loss of 79 MW of baseload generation capacity; and

WHEREAS, on October 29, 2015 the PUC ordered GPA in Docket 15-05 to update the Integrated Resource Plan (IRP) as a result of the August 31, 2015 explosion and fire at Cabras 3 & 4; and

WHEREAS, on May 24, 2016 CCU Resolution 2016-36 authorized GPA to petition the PUC to proceed with the Procurement of a new dual fuel power plant and for approval of the plan using the Independent Power Producer (IPP) model. In addition, CCU authorized GPA to procure the services of an Engineering, Procurement and Construction Management (EPCM) firm to assist in the procurement of the new power plant and act as GPA's owner representative; and

WHEREAS, on October 27, 2016, the PUC in Docket 15-05 approved GPA's petition to procure new generation based upon the Independent Power Producer (IPP) model as a Build Operate Transfer (BOT), including assorted transmission facilities and pipelines for both ULSD and LNG. The technology for the new generation shall not preclude any type of technology, and could be combined cycle units, internal combustion units, and/or renewable energy, subject to PUC

procurement protocol. In addition, PUC also approved the consulting services and funding to support the procurement development for an IPP contract; and

WHEREAS, on November 22, 2016, CCU Resolution 2016-66 authorized GPA to procure property in the Harmon area, close to the Harmon substation for the location of the new power plant; and

WHEREAS, on January 24, 2017 CCU Resolution 2017-01 authorized GPA to contract for an Engineering, Procurement and Construction Management (EPCM) for the development of an IPP contract for new generation capacity and to represent GPA as Owner's engineer support during the construction of the new power plant. Stanley Consultants, Inc. was determined to be the most qualified and was the firm GPA selected; and

WHEREAS, on April 18, 2017, the PUC authorized GPA to proceed with the IRP, and approved the procurement of new efficient, reliable, cost effective baseload generation without prohibition of LNG considerations; and

WHEREAS, on April 27, 2017 the PUC ordered GPA in Docket 15-05 supplemental order to open the new power plant bid to the market to offer technology neutral/agnostic solutions including combined cycle, internal combustion engines, and renewables; and

WHEREAS, on September 26, 2017 CCU Resolution 2017-39 authorized GPA to petition the PUC for approval of a multi-step bid process and to initiate the Request for Qualifications to establish a bidders list for the procurement of a new dual fuel power plant; and

WHEREAS, October 13, 2017 CCU Resolution 2017-42 authorized GPA to execute the real property purchase agreement for 60 acres of unimproved real property in the Harmon (Ukudu) area for a price not to exceed $10,870,000 and to commence rezoning efforts, and to petition the PUC for approval of this purchase; and

WHEREAS, on November 30, 2017, the PUC approved in Docket 18-02 a multi-step procurement process and authorized GPA to issue the Request for Qualifications for the new dual fuel power plant; and

WHEREAS, on January 16, 2018 GPA issued Multi-Step Bid GPA-034-18 for Build, Own/Operate and Transfer Contract for the new dual fuel power plant; and

WHEREAS, on May 16, 2018, Public Law 34-102 was enacted that consolidated the lots and rezoned the lots from R-2 to M-1 for the construction and operation of GPA's new dual fuel power plant; and

WHEREAS, on May 31, 2018, the PUC in Docket 18-14 approved GPA's purchase of the Harmon (Ukudu) property for the new dual fuel power plant and to enter into the proposed Contract of Sale; and

WHEREAS, on July 24, 2018 CCU Resolution 2018-015 approved GPA's request to petition the PUC for the approval of the Technical Bid documents for Multi-Step Bid GPA-034-18 for the Build, Own/Operate & Transfer (BOT) Contract for the new dual fuel power plant. PUC Docket 18-02 required GPA to submit and obtain approval of the technical bid documents from PUC; and

WHEREAS, on August 30, 2018, the PUC approved the technical bid documents allowing GPA to issue the bid for public bidding; and

WHEREAS, from an initial list of 18 bidders and 7 qualified proponents, GPA received price proposals from Powerflex (Wartsila), Hanwha Energy and Korea Electric Power Company (KEPCO) on June 3, 2019. The evaluation criteria included financial capacity, experience, qualifications and technical proposal. There were no proposals strictly using only renewables; and

WHEREAS, on June 10, 2019, GPA determined that the lowest qualified bidder was KEPCO, with a 25-year Net Present Value (NPV) cost of $3,121,230,000. This cost was lower than the cost of Hanwha Energy ($3,199,004,000 NPV) and Powerflex (Wartsila) ($4,019,294,000 NPV); and

WHEREAS, the proposal provides a plant with a thermal efficiency of 51% which substantially exceeds existing generating units heat rates, (64% more efficient than Cabras) and will produce the greatest fuel savings for ratepayers; and

WHEREAS, GPA is now requesting the CCU to review and approve the Energy Conversion Agreement (ECA), and its supporting schedules and documents, with KEPCO (**Exhibit A)** for the new dual fuel power plant; and

WHEREAS, under the ECA**,** KEPCO's proposal is to build, finance, operate and transfer ownership to GPA after twenty-five years a new dual fuel power plant for a total firm capacity of **198 MW** consisting of three (3) Siemens SGT-800 45 MW combustion turbines for total MW capacity of 135 MW; and one (1) 63 MW Siemens steam turbine; and

WHEREAS, the proposal also included for increased reliability and to meet the guaranteed 96% availability, one (1) 25 MW Battery Energy Storage System (BESS) to improve reliability; and 64 MW of additional small diesel generators to further insure reliability; and

WHEREAS, the commissioning of the new dual fuel power plant is critical to meeting GPA's Compliance Plan with USEPA. Discussions and negotiations for a consent decree are currently ongoing between GPA and USEPA. GPA's plan is to have all power plants compliant with USEPA

regulations, which includes the retirement of Cabras 1 & 2, and the conversion of MEC 8 & 9 to also be dual fuel capable; and

WHEREAS, the new dual fuel power plant will provide high reliability and substantial O&M savings, while burning less fuel when compared to the aging Cabras power plants. The fuel efficiency savings will reduce the initial cost of using a more expensive, though cleaner fuel. The new dual fuel power plant will reduce GPA's annual fuel consumption by about 35 million gallons of fuel per year; and

WHEREAS, the new dual fuel power plant can also burn natural gas which is much less expensive than ULSD. Converting from ULSD to LNG would significantly lower fuel costs for ratepayers even more; and

WHEREAS, the new dual fuel power plant is projected to lower the average residential power bill by 7.95%, while burning ULSD, once completed in 2023. All other rate classes would also benefit from similar reductions in their power bill; and

WHEREAS, if GPA is eventually permitted to use LNG instead of ULSD as a fuel source, average residential power bills are projected to be lower by 21.15%, with similar savings for all other rate classes; and

WHEREAS, the technology mix proposed by the new plant will allow for the addition of more renewable energy assets in the future, which would further lower ratepayer power bills while also reducing the amount of fuel used for energy and Guam's carbon footprint; and

WHEREAS, these potential savings are not attainable unless GPA is first allowed to enter into an ECA with KEPCO, as described herein; and

WHEREAS, the new dual fuel power plant would provide new capacity to meet the military buildup load growth; and

WHEREAS, time is of the essence to obtain approvals from the CCU and the PUC in order to meet GPA's goal of commissioning the new power plant by October 2022 to comply with the applicable USEPA standards; and

NOW THEREFORE, BE IT RESOLVED, by the Consolidated Commission on Utilities, subject to the review and approval of the Public Utilities Commission, as follows:

1. For all the reasons listed herein, and based on all the additional analysis provided by GPA over the course of this planning, bidding and evaluation process, the CCU determines that is in the best interest of the ratepayers of Guam to proceed with the award and execution of the proposed ECA with KEPCO; and

2. The CCU authorizes the GPA General Manager to contract with KEPCO via the enclosed ECA, and its attachments, to Finance, Build, Own/Operate and Transfer for a **198 MW** new dual fuel power plant and related assets.

RESOLVED, that the Chairman of the Commission certifies and the Secretary of the Commission attests the adoption of this Resolution.

DULY and REGULARLY ADOPTED this 3rd day of September, 2019.

Certified by:	**Attested by:**
JOSEPH T. DUENAS Chairperson Consolidated Commission on Utilities	**MICHAEL LIMTIACO** Secretary Consolidated Commission on Utilities

I, Michael Limtiaco, Secretary for the Consolidated Commission on Utilities (CCU), as evidenced by my signature above do certify as follows:

The foregoing is a full, true, and correct copy of the resolution duly adopted at a regular meeting of the members of Guam Consolidated Commission on Utilities, duly and legally held at the meeting place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

Ayes: _____

Nays: _____

Absent: _____

Abstain: _____

Sponsors' Comments dated September 2, 2019
in tracked changes against GPA draft dated August 27, 2019

[INSERT PROJECT NAME]

ENERGY CONVERSION AGREEMENT

BETWEEN

THE GUAM POWER AUTHORITY
(GPA)

AND

[PROJECT COMPANY]

for a

Gas Dual Fired Power Electric Facility

Located at [Insert Location], Guam

2019

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ENERGY CONVERSION AGREEMENT[1]

This **ENERGY CONVERSION AGREEMENT** (the "**Agreement**") is entered into as of this _____ day of _____, 2019 **BETWEEN** the Guam Power Authority, a public corporation and an enterprise fund of the Government of Guam established by the Guam Power Authority Act of 1968 (herein referred to as "**GPA**"), with principal offices located at Gloria B. Nelson Public Service Building 688 Route 15 Fadian, Mangilao, Guam, **AND** [Project Company], a [insert legal name and description] (herein referred to as the "**Project Company**"), with principal offices at [insert address].[2]

RECITALS

WHEREAS, pursuant to the Invitation For Bids issued by GPA on October 1, 2018 (as amended or supplemented), the Project Company has been chosen to develop, design, permit, finance, construct, test, commission, complete, own, insure, operate and maintain an electric power plant (the "**Facility**", as hereinafter defined), a related BESS Facility and a related Reserve Facility (collectively with the Facility, the "**Project Facilities**" each as hereinafter defined) on a build, own and transfer basis at the Site located near Harmon Substation, Guam, to provide electric power capacity and net energy output to GPA;

WHEREAS, under the Guam Power Authority Act of 1968 GPA is authorized to enter into contracts whereby it will purchase electric capacity and net energy output from third parties in Guam;

[INSERT WHEREAS CLAUSE REGARDING RELEVANT AND UPDATED PUC APPROVAL ORDER/S]

WHEREAS, the Project Company desires to sell electric capacity and net energy output of the Project Facilities to GPA in accordance with the terms and conditions set forth in this Agreement; and

WHEREAS, GPA is agreeable to purchasing such electric capacity and net energy output from the Project Company in accordance with the terms and conditions set forth in this Agreement.

NOW THIS AGREEMENT WITNESSETH as follows:

ARTICLE 1
DEFINITIONS

Each of the following capitalized terms shall have the meaning set forth below unless a different meaning is expressly attributed to it in the Agreement. All units of measurement used in this Agreement shall conform to the International System of Units (SI).

"**Abandonment**" means a voluntarily cessation by Project Company of the development, construction or operation of the Facility and either (i) the Project Company expressly declares in writing that development, construction or operation of the Facility will not be resumed; or (ii) such cessation continues for sixty (60) consecutive Days, provided that an Abandonment shall not occur if the Project Company is using commercially reasonable and diligent efforts to commence or reinstate development, construction or operation.

[1] Note to GPA: Subject to further review once Schedules are available (including careful review of cross-referencing between the ECA body and the schedules).

[2] Note to GPA: Sponsors to provide details of the project company. Sponsors to advise timetable for incorporation of the Project Company.

"**AAA Rules**" has the meaning set forth in Article 18.4.

"**Accumulated Unused Forced Outage Energy**" has the meaning set forth in Article 8.3.

"**Accumulated Unused Scheduled and Maintenance Outage Energy**" has the meaning set forth in Article 8.3.

["**Actual Heat Rate**" means the Heat Rate expressed in BTU per kWh as determined by Commercial Operation Tests.][3]

"**AGC**" means automatic generation control.

"**Agent**" has the meaning set forth in Article 4.2.

"**Agreement**" or "**ECA**" means this Energy Conversion Agreement, including its Schedules, as amended, supplemented or modified in accordance with the terms and conditions herein.

"**Allowable Total Outages Energy**" has the meaning set forth in Article 8.3.

"**Allowable Forced Outages Energy**" has the meaning set forth in Article 8.3.

"**Annual Average Dependable Capacity**" means for the relevant Contract Year, an amount equal to (a) the sum of the multiplication of each Dependable Capacity (including Initial Dependable Capacity) in effect during such Contract Year by the number of hours that each such Dependable Capacity was in effect during such Contract Year, divided by (b) the number of hours in such Contract Year.

"**Bank**" means the Federal Reserve Bank of the United States of America.

"**Bank Rate**" means the prime interest rate of the Bank from time to time.

"**BESS Facility**" means the battery energy storage system (BESS) that meets the requirements set forth in Schedule 1 to be installed by the Project Company as part of the Project Facilities.

"**BESS-Related Capacity**" means 25 MW of BESS capacity to be available for thirty (30) minutes as further described in Schedule 1.

"**Bid Date**" means April 2, 2019.

"**Bid Guarantee**" means the security established in accordance with the IFMSB to secure, inter alia, Project Company's obligations as set forth in this Agreement, during the period between the execution of this Agreement and Financial Close.

"**Black Start**" means the process of restoring an electric power station to operation without relying on the external transmission network.

"**British Thermal Unit**" or "**Btu**" means the amount of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

"**Business Day**" means any Day (including partial Days) of the year on which banks are required to be open for business in Guam.

"**Capacity Charge**" has the meaning set forth in Schedule 4.

[3] Note to GPA: This defined term is not used in the ECA. To be re-checked when the ECA Schedules are inserted into the ECA.

"**Capacity Damages**" has the meaning set forth in Article 8.3.

"**Cause**" means, in relation to the issuance, renewal, revocation, amendment or modification of any Government Authorization, any material default, neglect or failure by Project Company to abide by any Laws of Guam or the United States or any of the terms and conditions of any Government Authorization which entitles the relevant Government Authority to revoke, or refuse to issue or renew, the Government Authorization or make an amendment to its terms and conditions.

"**Change in Law**" means any of the following events occurring after the date falling thirty (30) Days prior to the Bid Date as result of any action by any Government Authority:

(a) the adoption, imposition, promulgation, coming into effect, modification or repeal of any Law of Guam or the United States that affects the Project or Project Company;

(b) any change in the manner in which a Law of Guam or the United States that affects the Project or Project Company is applied or interpreted;

(c) the imposition by a Government Authority (other than for Cause) of any material condition or delay in connection with the issuance, renewal, or modification of any Government Authorization; or

(d) the revocation or failure to issue (other than for Cause) of any Government Authorization by a Government Authority, except to the extent such failure to issue is due to Project Company's failure to diligently prepare the application for the applicable Government Authorization and to diligently seek the issuance thereof by the applicable Government Authority in compliance with applicable application requirements and procedures (taking into account the input of the Project Company's local permitting consultant),

that establishes or results in requirements that affect or relate to the Project that are materially more or less restrictive or materially more or less costly for Project Company.

"**Commercial Operation Date**" or "**COD**" means the earlier of (i) the Day following the Day upon which the Facility is Commissioned; or (ii) the Day following the Day upon which the Facility is deemed Commissioned in accordance with Article 7.

"**Commercial Operation Period**" means, with respect to the Facility, the period of time commencing on the COD and ending on (but including) the last Day of the Term.

"**Commercial Operation Tests**" mean the tests specified in Schedule 3 to demonstrate that the standard requirements and the guaranteed values (set out in Schedule 2) are met to achieve the COD with respect to the Facility.

"**Commissioned**" means notification by Project Company, accompanied by a report of the GPA Engineer certifying that the tests for the Facility have been satisfactorily completed in accordance with Schedule 3, and that the Facility meets the relevant characteristics set out in Schedule 2, provided that upon receipt of such notice and report the date on which the Facility is Commissioned shall be the date upon which the tests for the Facility (as referred to above) have been satisfactorily completed.

"**Commissioning**" means the process by which the Facility is Commissioned.

"**Connection Agreement**" has the meaning set forth in Article 4.5(i).

"**Construction Contract**" means the agreement/s between Project Company and the Construction Contractor/s for the design, engineering, procurement, construction and Commissioning of the Facility, as amended from time to time.

"**Construction Contractor**" means the construction contractor/s that are party to the Construction Contract.

"**Construction Period**" means the period of time commencing on the Construction Start Date and ending on the Commercial Operation Date.

"**Construction Start Date**" means the day on which Project Company issues the first Notice to Proceed to a Construction Contractor.

"**Contracted Characteristics**" means the characteristics of the Project Facilities described in Schedule 2.

"**Contracted Facility Capacity**" means the net electric power generating capacity of the Facility (excluding, for the avoidance of doubt, the Reserve Capacity and the BESS-Related Capacity) guaranteed to be provided to the Delivery Point on a continuous basis, adjusted to Site Reference Conditions as set forth in Schedule 2 and to the Fuel being consumed by such generating capacity at any given time, if applicable.

"**Contractors**" means the Construction Contractor and any O&M Contractor.

"**Contract Year**" means a period of twelve (12) consecutive Months commencing on each consecutive anniversary of the Commercial Operation Date and ending as of the end of the Day preceding the next anniversary of the Commercial Operation Date, except for the first Contract Year which shall start on the Commercial Operation Date.

"**Day**" means a twenty-four (24) hour period beginning and ending at 12:00 midnight Guam time.

"**Declared Capacity**" means the estimated net capacity of the Facility (adjusted to Site Reference Conditions and excluding, for the avoidance of doubt, the Reserve Capacity and BESS-Related Capacity) announced by Project Company pursuant to Article 9.3.

"**Declared Reserve Capacity**" means Reserve Capacity announced by Project Company pursuant to Article 9.3 which is distinct from and additional to the Declared Capacity and is available to be dispatched subject to the provisions of Article 9.2.

"**Delivery Point**" means the connection point of the Electrical Interconnection Facilities to the 115 kV bus bar at the Facility's switchyard where GPA receives the Net Energy Output and Reserve Energy Output from the Project Company, as specified in Schedule 2.

"**Dependable Capacity**" means, at any given time, the net capacity of the Facility (excluding, for the avoidance of doubt, any BESS-Related Capacity and Reserve Capacity) operating on ULSD or Natural Gas if and when applicable, measured in kW (adjusted to Site Reference Conditions), at the Delivery Point of the Facility as determined by the most recent Dependable Capacity Test, provided that for purposes of calculating the Capacity Charge, the Dependable Capacity shall not exceed the Contracted Facility Capacity.

"**Dependable Capacity Test**" has the meaning set forth in Schedule 3 and the frequency described in Article 7.2.

"**Dispatch Instruction**" means an instruction issued directly by the PSCC to Project Company in accordance with (i) the dispatch principles and guidelines established by GPA in accordance

with the applicable system grid code for the Grid System; (ii) the Operating Procedures; (iii) the Technical Limits; (iv) Prudent Utility Practices; and (v) this Agreement.

"**Dispute**" means any dispute or disagreement of any kind whatsoever between GPA and Project Company in connection with or arising out of this Agreement.

"**Dollars**" or "**USD**" or "**US$**" all mean the lawful currency of the United States of America.

"**Early Transfer Price**" means the applicable price set forth in Schedule 8 for the purchase of the Project Facilities by GPA from Project Company pursuant to Article 4.5(e).

"**Electrical Interconnection Facilities**" means all of the electrical interconnection facilities and equipment described in Schedule 1 to be constructed by the Project Company and transferred to GPA at the Commercial Operation Date.

"**Emergency**" means a condition or situation that in the reasonable opinion of GPA poses an imminent threat of (a) materially adversely affecting the ability of GPA to maintain safe, adequate and continuous electrical service to its customers, having due regard to the then current standard of electrical energy provided to its customers; or (b) endangering the safety of people, plant, or equipment.

"**Energy Charge**" has the meaning set forth in Schedule 4.[4]

"**Environmental Attributes**" means (a) credits, benefits, reductions, offsets and other beneficial allowances, howsoever named or referred to, with respect to any and all fuel, emissions, air quality, or other environmental characteristics, resulting from the use of Facility generation or the avoidance of the emission of any gas, chemical or other substance into the air, soil or water attributable to the sale of energy generated by the Project during the Term and in which Project Company has property rights or will have property rights upon such attributes coming into existence, and include any of the same arising out of legislation or regulation (i) concerned with (A) oxides of nitrogen, sulfur, or carbon, (B) particulate matter, soot, or mercury, or (C) implementing the United Nations Framework Convention on Climate Change (the "**UNFCCC**") or protocols connected to the UNFCCC or crediting "early action" with a view thereto, and (b) all Environmental Attribute Reporting Rights.

"**Environmental Attribute Reporting Rights**" means the rights to report the ownership of any Environmental Attribute, including those rights accruing under any emissions trading program.

"**Equity Documents**" means any agreements relating to the issuance, subscription, placement or underwriting of Shares or other securities convertible into Shares issued by Project Company and any instruments constituting or evidencing Shares or other securities convertible into Shares issued by Project Company, and any documents or agreements evidencing or relating to indebtedness for money borrowed by Project Company from the Investors or their affiliates which, by its terms, is subordinated to any indebtedness for borrowed money incurred by Project Company under any Financing Document

"**Excessive Forced Outages Energy**" has the meaning set forth in Article 8.3(a).

"**Excessive Total Outages Energy**" has the meaning set forth in Article 8.3(b).

"**Excusable Event**" means:

[4] Note to GPA: To be checked when the ECA Schedules are inserted into the ECA.

(i) events or circumstances constituting a Change in Law or Force Majeure event occurring after the date falling thirty (30) Days prior to the Bid Date and prior to Financial Close; or

(ii) a delay in the issuance of a Government Authorization, including, without limitation any delay in:[5]

(A) the issuance of a building height variation for the zoning applicable to the Site to accommodate the buildings and structures forming part of the Project Facilities beyond the date falling [six (6)] months after the date of this Agreement, except to the extent that such delay is due to Project Company's failure to diligently prepare the application for the applicable permit, and to diligently seek approval thereof by the applicable Government Authority in compliance with applicable application requirements and procedures (taking into account the input of the Project Company's local permitting consultant); or

(B) the issuance of the environmental permits (including delay in the approval of the environmental impact assessment and the building permit) required under applicable environmental Laws beyond the date falling [six (6)] months after the date of this Agreement, except to the extent such delay is due to Project Company's failure to diligently prepare the applications for the applicable environmental permits and environmental impact assessment, and to diligently seek the approval thereof by the applicable Government Authority in compliance with applicable environmental permit/environmental impact assessment application requirements and procedures (taking into account the input of the Project Company's local environmental consultant),

provided further, that in the case of this sub-clause (ii), such delay prevents Project Company from performing its obligations under this Agreement or delays such performance, as demonstrated by the Project Company.

"**Facility**" means an electric generating facility with an expected continuously available fully dispatchable capacity of 198 MW net (when operating on ULSD) to be constructed by Project Company at a leased Site in Guam, whether completed or at any stage of development and construction, including, without limitation or regard to the level of development, the leased land, buildings, engineering and design documents, all power producing equipment and auxiliary equipment, Black Start capability, Fuel handling and storage infrastructures, Water intakes and discharges, Water treatment and pumping facilities, solid waste disposal facilities, main and plant transformers, plant switchgear, and all other installations as described in Schedule 1, but excluding the BESS Facility and the Reserve Facility.

"**FERC**" means the U.S. Federal Energy Regulatory Commission.

"**Final Major Overhaul**" has the meaning set forth in Article 17.2.

"**Financial Close**" means the date on which all conditions of the Lenders under the Financing Documents have been met or waived (in accordance with the terms thereof), and initial financing disbursements can take place (as certified by the Agent in writing).

"**Financing Documents**" means the loan agreements, notes, bonds, note or bond purchase agreements, participation agreements, indentures, security agreements, hedging agreements, guarantees, shareholder support agreements, the Lenders' Direct Agreements and other documents relating to the construction and permanent financing (including

[5] Note to GPA: Sponsors will confirm with their environmental consultant whether the 6-month period in paragraphs (ii)(A) and (B) of the definition of Excusable Event is feasible. Subject to finalization prior to the signing of the ECA.

refinancing) of the Project Facilities or any part thereof provided by any Lender, but excluding any Equity Documents.

"**First Fill**" has the meaning set forth in Article 3.3.2(a).

"**Fixed Operation and Maintenance Charge**" has the meaning set forth in Schedule 4.[6]

"**Force Majeure**" has the meaning set forth in Article 16.

"**Force Majeure Transfer Price**" means the applicable price set forth in Schedule 8 for the purchase of the Project Facilities by GPA from Project Company pursuant to Article 4.5(g).

"**Forced Outage**" means a failure to make available the Dependable Capacity:

(a) that is not the result of a request by GPA in accordance with this Agreement;

(b) that is not the result of a Scheduled Outage or a Maintenance Outage;

(c) that is not the result of an event or occurrence of a Force Majeure;

(d) that is not the result of a condition caused by GPA or by the Grid System, provided that such condition would not have occurred without the action or inaction of GPA or the condition of the Grid System;

(e) that does not occur during any period during which the Facility is deemed to provide the Dependable Capacity under Article 7.5; or

(f) that is not the result of GPA failing to deliver Fuel that meets the Fuel Specifications at the times and in the quantities required to satisfy the Fuel Supply Requirement (after the Project Company has utilized available Fuel in the ULSD Storage Facilities).

"**Forced Outages Energy**" has the meaning set forth in Article 8.3.

"**Fuel**" means fuel used by the Project Facilities, which will be ULSD (as specified in Schedule 6) or Natural Gas (as specified in Schedule 7).

"**Fuel Delivery Point**" has the meaning set forth in Schedule 2.

"Fuel Price (FP)" has the meaning set forth in Schedule 4.[7]

"**Fuel Specifications**" means the requirements of Schedule 6 (in the case of ULSD) or Schedule 7 (in the case of Natural Gas), as applicable.

"**Fuel Supply Requirement**" means the delivery by GPA of Fuel that meets the Fuel Specifications in the amounts and at the times specified in Articles 3.3.1(a), 3.3.2 or 3.4.1, as the case may be.

"**Functional Specifications**" or "**Specification**" means the characteristics (adjusted to Site Reference Conditions) for the design, construction and operation of the Project Facilities, as set forth in Schedule 1.

"**Government**" means the Government of Guam and the Government of the United States, as applicable.

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[6] Note to GPA: To be checked when the ECA Schedules are inserted into the ECA.

[7] Note to GPA: To be checked when the ECA Schedules are inserted into the ECA.

"**Government Authority**" means the Government and/or any national or local governmental authority of Guam with jurisdiction over Project Company, the Project or any part thereof, and/or any department, regulatory, supervisory or competent authority, or political subdivision or instrumentality, agency or judicial body of the Government, or any national or local governmental authority of the Government and/or any person under the direct or indirect control of any of the foregoing.

"**Government Authorizations**" means all formal written permits, licenses, authorizations, consents, decrees, waivers, privileges, approvals and filings required to be obtained from or provided by any Government Authority for the execution, delivery and performance of this Agreement, any other Project Agreement or any Financing Document, including without limitation the design, development, construction, financing, ownership, maintenance and operation of the Project Facilities (and all other activities incidental thereto), as contemplated by this Agreement, the other Project Agreements and the Financing Documents.

"**GPA**" has the meaning set forth in the Preamble hereto.

"**GPA Default Transfer Price**" means the applicable price set forth in Schedule 8 for the purchase of the Project Facilities by GPA from Project Company pursuant to Article 4.5(d), as the case may be.

"**GPA Engineer**" means the engineering company selected by GPA, the costs of whose appointment and retention shall be paid by GPA.

"**GPA Delay Event**" means a material breach by GPA of its obligations under this Agreement that is not remedied within five (5) Days after Notice from the Project Company to GPA (which Notice shall (i) identify the material breach in reasonable detail, and (ii) request the remedy thereof).

"**GPA Event of Default**" has the meaning set forth in Article 4.3.

"**Grid System**" means the transmission and distribution facilities through which the Net Energy Output and Reserve Energy Output may be transmitted and distributed to users.

"**Guaranteed Heat Rate**" or "**GHR**" means the Heat Rate (at the Site Reference Conditions) guaranteed by the Project Company for the Facility, as set forth in the tables included in Schedule 4.

"**Guam**" or "**Territory of Guam**" means that certain unincorporated and organized territory of the United States in Micronesia.

"**GWA**" means Guam Waterworks Authority.

"**Heat Rate**" expressed in Btu per kWh, means the fuel energy consumption expressed in Btu (higher heating value) required to generate one (1) kWh by the Facility at the high voltage bushings of the main power transformers.

"**IFMSB**" means the invitation for bids issued by GPA on October 1, 2018 and including all updates and amendments thereto between the date of its submission and the date of this Agreement.

"**Independent Engineer**" means a qualified, international, and independent engineering firm selected by Project Company and approved by GPA for purposes of certifying any claim by Project Company that the Facility should be deemed Commissioned in accordance with Article 7.5.

"**Initial Dependable Capacity**" means, at the Commercial Operation Date, the capacity set upon successful completion of the Dependable Capacity Test of the Facility used to establish the Commercial Operation Date, which is the maximum capacity adjusted for Site Reference Conditions that the Facility (excluding, for the avoidance of doubt, the BESS-Related Capacity and Reserve Capacity) is demonstrated to be capable of delivering continuously at the Delivery Point at that time, in accordance with (and subject to) Article 7.1(d)(iii) and is the capacity to apply until the next Dependable Capacity Test occurs after the Commercial Operation Date.

"**Initial Shareholders**" means Korea Electric Power Corporation and Korea East West Power Corporation.

"**Investor**" means a shareholder of Project Company

"**Invoice Due Date**" has the meaning set forth in Article 13.4.

"**Joint Coordinating Committee**" is the committee established by Project Company and GPA pursuant to Article 10.

"**kW**" means kilowatts.

"**kWh**" means kilowatt-hours.

"**Law**" or "**Laws**" means the laws of Guam and the United States of America.

"**Land Lease Agreement**" or "**LLA**" means the agreement entered into by and between Project Company and GPA whereby Project Company will lease the Site on which the Project Facilities shall be built.

"**Lenders**" means the lenders, guarantors, credit providers, multilateral agencies, export credit agencies or other financial institutions or insurers providing (or supporting) the financing or refinancing arrangements for the Project pursuant to the Financing Documents, but not including any Investor or affiliate of an Investor with respect to indebtedness for money borrowed by Project Company from any such Investor or affiliate.

"**Lenders' Direct Agreement**" means the agreement to be entered into by the Project Company, GPA, and the Lenders and/or their security agent pursuant to Article 22.11, substantially in the form attached hereto as Exhibit [•].

"**Liquidated Damages Due Date**" has the meaning set forth in Article 8.6.

"**Liquidated Damages Notice**" has the meaning set forth in Article 8.6.

"**Long Term Programme Agreement**" or **"LTPA"** means the agreement to be entered into between the Project Company and the LTP Contractor for the provision by the LTP Contractor of technical services to the Project Company for the Project Facilities, or any agreement for the provision of similar services.

"**Loss**" means any loss, cost, expense damage, liability, payment or obligation (including reasonable legal fees and expenses but excluding any indirect or consequential loss, cost, expense, damage, liability, payment or obligation or any loss of revenue or loss of profit).

"**LTP Contractor**" means Siemens Corporation or any replacement or successor party under an LTPA for the Project Facilities or any part thereof.

"**Lump Sum Amount**" has the meaning set forth in Article 13.8.

"**Maintenance Outage**" means an interruption or reduction of the generating capability of the Facility that:

(a) is not a Scheduled Outage;

(b) has been scheduled in accordance with Article 9.4(f); and

(c) is for the purpose of performing work on specific components of the Facility which work should not, in the reasonable judgment of Project Company, be postponed until the next Scheduled Outage.

"**Major Overhaul**" means the repair and reconditioning of any Unit of the Facility that is conducted in accordance with Article 9.4(g) and Schedule 2.

"**Maximum Natural Gas Switch Quantity**" has the meaning set forth in Article 7.2(f).

"**Metering System**" means the measurement system capable of interpreting readings of all pertinent parameters required by the invoicing process.

"**Million Btu**" or "**MMBtu**" means 106 Btu.

"**Mitigating Costs**" has the meaning set forth in Article 16.1.

"**Month**" means a month according to the Gregorian Calendar, and "**Monthly**" shall be construed accordingly.

"**MW**" means megawatts.

"**MWh**" means megawatt hours.

"**Natural Gas**" means natural gas meeting the Fuel Specifications contained in Schedule 7.

"**Net Energy Output**" means the energy output delivered by the Facility and BESS Facility accepted by GPA during a given period of time measured in kWh by the Metering System at the Delivery Point (excluding, for the avoidance of doubt, Reserve Energy Output).

"**NERC**" means North American Electric Reliability Corporation.

"**NG Fuel Pipeline**" means the NG fuel pipeline between an LNG receipt and storage facility at the ULSD Bulk Storage and the Site as described in Schedule 1 to be constructed by the Project Company and transferred to GPA on the Commercial Operation Date.

"**Non-Conforming Fuel**" has the meaning set forth in Article 3.3.1(f).

"**Notice**" has the meaning set forth in Article 21.

"**Notice of Intent to Terminate**" has the meaning set forth in Article 4.5(a).

"**Notice to Proceed**" means the initial notice to the Construction Contractor to commence engineering, procurement or construction work pursuant to the Construction Contract.

"**O&M Contract**" means any agreement entered into between Project Company and a third-party contractor for the operation and maintenance of the Project Facilities or any portion thereof, including any LTPA.

"**O&M Contractor**" means any party to any O&M Contract which is responsible for the operation and maintenance of the Project Facilities or any portion thereof, including any LTP Contractor.

"**Operating Procedures**" means the operating procedures developed by the Parties pursuant to Article 6.4 and in compliance with the applicable system grid code, as such procedures may be modified from time to time in accordance with Article 6.4 and the applicable system grid code.

"**Outage Hours**" means for each month during the Commercial Operation Period, the total number of full load equivalent hours during such month in which Dependable Capacity is reduced due to Forced Outages, Maintenance Outages and Scheduled Outages which shall be calculated as the summation of the duration of each such outage in the month (in hours) multiplied by the reduction in Dependable Capacity during such outage (in MW) divided by the Dependable Capacity (in MW).

"**Party**" or "**Parties**" means GPA and Project Company, either individually or collectively.

"**Performance Bond**" means the security established in accordance with Article 8.5(d) to secure the Project Company's ability to pay liquidated damages in accordance with Article 8, substantially in the form attached hereto as Schedule 9.

"**Period of Testing**" means the period from initial synchronization of a Unit or Facility to the Commercial Operation Date, during which period testing occurs and net power is produced.

"**Pipeline Route**" means the land on which the new ULSD Supply Infrastructure and the NG Fuel Pipeline is to be built.

"**Power System Control Center**" or "**PSCC**" means GPA's main control center located at [•] or such other control center designated by GPA from time to time (but not more than one center at a time) which shall issue Dispatch Instructions to Project Company.

"**Pre-Existing Condition**" means a Pre-Existing Site Condition or a Pre-Existing Pipeline Route Condition.

"**Pre-Existing Pipeline Route Condition**" means any artificial obstructions on, under, in, or affecting the Pipeline Route, or any contamination (whether occurring before or after the Bid Date, but not resulting from Project Company's or Contractor's activities on the Pipeline Route) that could not reasonably have been discovered prior to Bid Date by an experienced international engineering and construction contractor using the most sophisticated devices and personnel available at the time of the pipeline route investigation by such contractor but shall not, for the avoidance of doubt, include archaeological discoveries.

"**Pre-Existing Site Condition**" means any artificial obstructions on, under, in, or affecting the Site or any contamination (whether occurring before or after the Bid Date, but not resulting from Project Company's or Contractor's activities on the Site) that could not reasonably have been discovered prior to the Bid Date by an experienced international engineering and construction contractor using the most sophisticated devices and personnel available at the time of Site investigation by such contractor but shall not, for the avoidance of doubt, include archaeological discoveries on the Site.

"**Pre-Existing Condition Period**" means the period from the date of this Agreement to (a) in the case of a Pre-Existing Site Condition, the date falling twelve (12) months after the issuance of Notice to Proceed under the Construction Contract, and (b) in the case of a Pre-Existing Pipeline Route Condition, the date falling fifteen (15) months after the issuance of Notice to Proceed under the Construction Contract.

"**Price**" means the price of electricity charged by Project Company to GPA and calculated in accordance with the formulas in Schedule 4.

"**Project**" means the development, design, engineering, financing, refinancing, insurance, procurement, construction, startup, testing, Commissioning, completion, ownership, operation and maintenance of the Project Facilities, all activities incidental thereto, and each of the Project Facilities themselves.

"**Project Agreements**" means collectively, this Agreement, the Land Lease Agreement, the O&M Contract (if applicable), the Construction Contract, the Water Supply Agreement, and any other document, contract, or agreement executed subsequent to the date hereof by Project Company that is relevant to the construction and development of the Project or the ownership or management of Project Company (other than any Financing Document, Equity Document or Government Authorization) or otherwise mutually agreed in writing to constitute a "Project Agreement".

"**Project Company**" has the meaning set forth in the Preamble hereto.

"**Project Company Default Transfer Price**" means the applicable price set forth in Schedule 8 for the purchase of the Project Facilities by GPA from Project Company pursuant to Article 4.5(f).

"**Project Company Event of Default**" has the meaning set forth in Article 4.2.

"**Project Facilities**" means each of the Facility, the BESS Facility and the Reserve Facility.

"**Project Facilities Transfer**" has the meaning set forth in Article 17.1.

"**Prolonged Force Majeure**" means a condition in which a Force Majeure event has caused fifty percent (50%) or more of the Contracted Facility Capacity to be unavailable for dispatch for eighteen (18) consecutive months or more and is continuing.

"**Proposal**" means Project Company's written offer and amendments based on the covenants, terms and conditions as contained in the IFMSB for the development, financing, construction, ownership, operation and transfer of the Project.

"**Prudent Utility Practices**" means those practices, methods, techniques and standards, as changed from time to time, that are generally accepted internationally for use in electric utility industries (taking into account conditions in Guam), and commonly used in prudent engineering and operation to design, engineer, construct, test, operate and maintain equipment lawfully, safely and economically as applicable to power stations of the size, service, and type (and operating with the contemplated Fuels) as the applicable Project Facility.

"**PUC**" means the Public Utilities Commission of Guam.

"**Remedial Actions**" means any necessary actions to increase the Initial Dependable Capacity to the Contracted Facility Capacity.

"**Required Commercial Operation Date**" means the date falling twenty-seven (27) months from Financial Close, or such later date as may apply in accordance with the provisions of this Agreement.

"**Required Financial Closing Date**" means the date falling nine (9) months after execution of the ECA, as such date may be extended in accordance with Article 8.5(b) or Article 16.8.

"**Reserve Capacity**" means the capacity of the Reserve Facility.

"**Reserve Facility**" means high speed diesels, micro-gas turbines and/or micro-steam turbines with an aggregate capacity as set forth in Schedule 1 to be installed by the Project Company as part of the Project Facilities.

"**Reserve Energy**" means any energy that is generated by Reserve Capacity.

"**Reserve Energy Guaranteed Heat Rate**" means 10,556 Btu/kWh (higher heating value).

"**Reserve Energy Output**" means Reserve Energy which is (i) dispatched under a Dispatch Instruction pursuant to Article 9.2, and (ii) is subsequently delivered by the Reserve Facility to the Delivery Point.

"**Scheduled Outage**" is a planned interruption of the generating capability of the Facility that:

(a) is not a Maintenance Outage;

(b) has been scheduled in accordance with Article 9; and

(c) is for inspection, testing, Major Overhauls, preventive and corrective maintenance, repairs, replacement or improvement of the Facility.

"**Security**" means any one or more of the following: the Bid Guarantee, the Performance Bond, or the Transfer Security.

"**Security Package**" consists of:

(a) this Agreement;

(b) the LLA;

(c) the Construction Contract;

(d) the O&M Contract (if applicable);

(e) the Financing Documents;

(f) the bylaws and articles of Project Company;

(g) the Equity Documents;

(h) the insurance policies required to be obtained by Project Company pursuant to Article 14;

(i) the documents creating or evidencing the security for the Lenders (including the Lenders' Direct Agreement);

(j) all Government Authorizations, including a generation license issued in accordance with [•]; and

(k) any other Project Agreements to which Project Company is party.

"**Shares**" means shares of Project Company with voting or other rights of management and/or control.

"**Site**" means the land on which the Project Facilities are to be installed (defined by the boundaries [Insert site plot designation or coordinates])[8], and has been leased by GPA to Project Company by means of the LLA.

[8] Note to GPA: Sponsors to provide.

"**Site Reference Conditions**" means the physical and meteorological conditions at which the Project Facilities would be operating under hypothetical representative circumstances as defined in Schedule 1.

"**Start**" means the process of starting up a Unit or other Project Facilities until its synchronization, when the corresponding Unit or the other Project Facility has been shut down.[9]

"**Supplemental Charge**" means any additional charges which are payable by GPA to Project Company pursuant to this Agreement (or as otherwise agreed by the Parties) as part of the Price payments.

"**Technical Limits**" means the limits and constraints described in Schedule 2 relating to the operation and maintenance of the Project Facilities, and which shall be in accordance with the Functional Specifications.

"**Term**" has the meaning set forth in Article 4.1.

"**Termination Notice**" has the meaning set forth in Article 4.5(c).

"**Testing**" means the process of testing the Project Facilities pursuant to Article 7.

"**Threshold Capacity**" means a Dependable Capacity equal to ninety per cent (90%) of the Contracted Facility Capacity.

"**Transfer Date**" means the date upon which all ownership, custody and control of the Project Facilities shall be transferred from Project Company to GPA, which date shall be the final day of the Term unless mutually agreed otherwise.

"**Transfer Security**" has the meaning set forth in Article 17.4.

"**ULSD**" means ultra-low sulfur diesel fuel with maximum sulfur content of 14 ppm suitable for firing by diesel engine generators or combustion turbine generators meeting Fuel quality specifications contained in Schedule 6.

"**ULSD Bulk Storage**" means GPA's existing GPA ULSD bulk storage located near the existing Cabras power station to be modified by the Project Company as required under this Agreement.

"**ULSD Storage Facilities**" has the meaning set forth in Article 3.3.1(g).

"**ULSD Supply Infrastructure**" means the ULSD Bulk Storage, and the ULSD supply pipeline between the ULSD Bulk Storage and the Site with all its associated systems, equipment, and accessories as described in Schedule 1 to be constructed by the Project Company and transferred to GPA on the Commercial Operation Date.

"**Unit**" means an individual gas turbine-generator or steam turbine that is not part of the Reserve Facility.

"**Unit Available Capacity**" means the capacity of each Unit (adjusted to Site Reference Conditions) announced by Project Company pursuant to Article 9.3(e).

"**U.S. EPA**" means the United States Environmental Protection Agency.

[9] Note to GPA: Sponsors to confirm.

"**Variable Operation and Maintenance Charge**" has the meaning set forth in Schedule 4.[10]

"**Water**" means water used by the Facility coming from the Northern District Wastewater Treatment Facility, or if such water is not available, potable water provided by GPA or GWA.[11]

"**Water Supply Agreement**" means the agreement to be entered into by and between GWA and the Construction Contractor, and which shall be novated on Commercial Operation Date pursuant to the terms thereof to substitute the Project Company in place of the Construction Contractor as a party to the Water Supply Agreement.[12]

"**Wilful Misconduct**" means an intentional, conscious or reckless default in announcing an accurate Declared Capacity by a director, officer, manager or employee of Project Company exercising apparent authority to announce, or cause to be announced, a Declared Capacity, provided, however, that Wilful Misconduct shall not include any error of judgement or mistake made in good faith in the exercise of any function, authority or discretion arising under or in connection with the performance of this Agreement.

"**Year**" means a calendar year according to the Gregorian calendar beginning at midnight December 31 in Guam.

ARTICLE 2
INTERPRETATION

In this Agreement (including its Schedules), unless otherwise stated:

2.1 Any references to:

(a) any agreement (including this Agreement) or document shall be construed, at any particular time, as including a reference to the relevant agreement or document as it may have been amended, novated, assigned, modified or supplemented in accordance with its terms;

(b) the Preamble, Recitals or a particular Article or Schedule, shall be a reference to the Preamble, Recitals or relevant Article or Schedule in or to this Agreement;

(c) a particular paragraph or sub-paragraph, if contained in an Article or Schedule, shall be a reference to the relevant paragraph or sub-paragraph of that Article or Schedule; and

(d) a Party or any other person includes its successors in title, permitted assigns and permitted transferees.

2.2 Words in the singular may be interpreted as referring to the plural and vice versa.

2.3 A requirement that a payment be made on a Day which is not a Business Day shall be construed as a requirement that the payment be made on the next following Business Day.

2.4 The words "including" and "include" are to be construed as being at all times followed by the words "without limitation", unless the context otherwise requires.

[10] Note to GPA: To be checked when the ECA Schedules are inserted in the ECA.

[11] Note to parties: To add in the ECA or a separate side agreement among GPA, GWA and the Project Company a right for GPA to provide potable water as back-up supply. Drafting subject to the review of the Water Supply Agreement.

[12] Note to GPA: Novation arrangement subject to Sponsors' review once the Water Supply Agreement is available. Sponsors to revert on the timing of the execution of the Water Supply Agreement.

2.5 For the purpose of any calculation under this Agreement, references to any period or periods of an hour or hours shall be rounded up to the nearest 1/10th of an hour.

2.6 The Schedules contained herein form an integral part of this Agreement. In the event of an inconsistency between the body of this Agreement and the Schedules thereto, the provisions of the body shall govern.

2.7 Where reference is made in this Agreement to a period or periods of time the periods in question shall be deemed to end at midnight on the last Day of such period unless otherwise stated.

2.8 Unless otherwise stated, whenever a consent or approval is required by one Party from the other Party, such consent or approval shall not be unreasonably withheld or delayed.

2.9 In carrying out its obligations and duties under this Agreement, each Party shall have an implied obligation of good faith.

2.10 Any capitalized term used but not defined in this Agreement shall have the meaning attributable thereto in the IFMSB.

2.11 The Parties agree that, should a situation arise where the provisions of Schedule 1 require clarification, then Form 8 of the Proposal, to the extent relevant, would be used to interpret the provisions of Schedule 1, provided that this process in no event results in the modification of the Project Company's obligations hereunder or the imposition of obligations additional to those included in this Agreement.

2.12 Any reference to GPA's successors and permitted assigns shall be a reference to such successors and permitted assigns in all of GPA's capacities.

ARTICLE 3
SALE AND PURCHASE OF CAPACITY AND ENERGY

3.1 Energy and Capacity

Subject to and in accordance with the terms and conditions of this Agreement, Project Company agrees to maintain and make available and deliver exclusively to GPA, and GPA agrees to accept and purchase from Project Company, from and after the Commercial Operation Date, for the consideration described in Article 13 and Schedule 4, the entire Dependable Capacity and, subject to Dispatch Instructions, the Net Energy Output and the Reserve Energy Output. GPA further agrees to pay to Project Company all amounts (and adjustments to amounts) described in Article 13.1 in the circumstances contemplated in Article 13.1.

3.2 Sales to Third Parties and Test Energy

3.2.1 No Sales to Third Parties

The Parties agree that Project Company shall not during the Term sell or deliver electric capacity or energy produced by the Project Facilities to any entity other than GPA.

3.2.2 No Payment for Test Energy

Prior to the Commercial Operation Date, GPA shall not pay for energy delivered to GPA during Testing and Commissioning.

3.3 Fuel Supply

3.3.1 Fuel Supply after COD

(a) Commencing as of the Commercial Operation Date, GPA shall deliver Fuel to Project Company in compliance with the Fuel Specifications for each Day of operation, at such times as it may be required by Project Company to satisfy the hourly dispatch requirements to be provided by GPA. All Fuel required to be delivered by GPA to Project Company under this Article shall be delivered to the corresponding Fuel Delivery Point and shall be measured at the corresponding Fuel Measurement Point in accordance with the provisions set forth in Schedule 10.

(b) Unless Project Company informs GPA otherwise, the Fuel Supply Requirement shall be consistent with the Guaranteed Heat Rate and Reserve Energy Guaranteed Heat Rate specified in Schedule 4, adjusted to Site Reference Conditions and expressed in BTUs per kWh. In the event the expected operating heat rate applicable to any period of operation is higher than the corresponding Guaranteed Heat Rate, Project Company shall inform the magnitude of the deviation, the likely cause of such deviation, and the way this deviation is going to be corrected. Project Company shall use its best efforts to meet the Guaranteed Heat Rate and Reserve Energy Guaranteed Heat Rate. GPA shall supply the Fuel Supply Requirement even if the expected operating heat rate is higher than the Guaranteed Heat Rate and Reserve Energy Guaranteed Heat Rate.

(c) Each Party shall cooperate reasonably with the other Party to coordinate the supply and delivery of Fuel to the Fuel Delivery Point with the operation of the Facility and the Reserve Facility as follows: (x) by providing the other Party such information as the first Party shall reasonably request regarding the supply and delivery of the Fuel to the Fuel Delivery Point (on both a historical and estimated future basis); and (y) by maintaining personnel available at all times to address scheduling of Fuel supply and delivery.

(d) Subject to the foregoing, GPA shall have the right to change the quantities of Fuel nominated and received on a daily basis, or more frequently, to the extent permitted, so long as such changes do not disrupt Project Company's operations.

(e) GPA shall be deemed to be in exclusive control of, and responsible for any damage or personal injury caused by, Fuel up to the Fuel Delivery Point. Project Company shall be deemed to be in exclusive control of, and responsible for any losses of Fuel, and any damages or injury caused by, such Fuel at and from the Fuel Delivery Point. GPA warrants that Fuel caused to be delivered hereunder to Project Company shall be free and clear of all liens or other encumbrances. Title to and risk of loss of all Fuel shall transfer from GPA to Project Company upon delivery to the Fuel Delivery Point.

(f) GPA undertakes that all Fuel delivered at the Fuel Delivery Point shall meet the Fuel Specifications. Project Company shall have the right to reject Fuel which fails to meet the Fuel Specifications at the Fuel Delivery Point ("**Non-Conforming Fuel**"), provided that the Project Company shall use reasonable efforts to accept Non-Conforming Fuel where such acceptance is consistent with Prudent Utility Practices and will not adversely impact the reliability, efficiency or performance of the Project Facilities or the ability of the Project Company to comply with applicable Laws based on the Project Company's then existing permits; provided further, that the Project Company shall not have any

obligation to accept Non-Conforming Fuel if the original equipment manufacturer of the Facility or the Reserve Facility (as applicable) will not accept the use of such Non-Conforming Fuel. If Project Company erroneously rejects Fuel that in fact meets the Fuel Specifications, Project Company shall be liable to GPA for all damages caused by said rejection and shall indemnify and hold GPA harmless therefor. If either Party becomes aware that Fuel that is being or will be delivered by GPA to the Project Company fails to meet the Fuel Specifications, such Party shall inform the other Party of this fact as soon as possible after becoming aware thereof.

(g) Project Company shall, in accordance with Schedule 1, construct and maintain storage facilities at the Site for the supply of ULSD for the operation of the Facility and the Reserve Facility (the "**ULSD Storage Facilities**"). Such storage facilities shall be capable of holding an inventory equivalent to the amount of ULSD necessary to operate the Facility at the full Contracted Facility Capacity (in accordance with the Guaranteed Heat Rate) for at least thirty (30) consecutive Days or such larger quantities as may be required by Lenders.

(h) Project Company shall, in accordance with Schedule 1, (i) finance, design and construct each of the ULSD Supply Infrastructure and the NG Fuel Pipeline, and (ii) transfer each of them to GPA at no cost on the Commercial Operation Date. GPA shall (x) procure all easements required for the ULSD Supply Infrastructure and the NG Fuel Pipeline and (y) own, operate, and maintain the ULSD Supply Infrastructure and NG Fuel Pipeline during the Term of the ECA.

3.3.2 Fuel Supply During Testing and Commissioning

(a) Commencing as of the date falling eleven (11) months prior to the planned Commercial Operation Date (as such date is notified by the Project Company to the GPA), GPA shall procure and deliver the Fuel required for start-up, Testing and Commissioning to the ULSD Storage Facilities pursuant to the specifications in Schedule 6. GPA shall pay for the Fuel required for start-up, Testing and Commissioning up to a maximum of [•] MMBtu[13] and Project Company shall pay for any Fuel required and delivered in excess thereof. The Project Company shall be responsible for the operation and maintenance of the ULSD Supply Infrastructure prior to the Commercial Operation Date and the cost of first fill of ULSD in an amount equal to the Fuel storage requirements in Article 3.3.1(g) (the "**First Fill**").

(b) At least eighteen (18) Months prior to the Required Commercial Operation Date, Project Company and GPA shall agree to a procedure to periodically estimate and forecast the necessary amount of Fuel expected to be required for Commissioning and start-up, provided, however, that the final amount of Fuel required shall be set no later than [•] [14] days prior to the Required Commercial Operation Date.

3.4 Natural Gas Supply

The following is applicable for Natural Gas if and when it becomes available and if and when GPA so elects to supply Natural Gas to the Facility.

3.4.1 Natural Gas Procurement

[13] Note to GPA: Sponsors' technical team to confirm.

[14] Note to GPA: Sponsors' technical team to confirm.

At any time after the Commercial Operation Date, GPA, in its sole discretion may elect to supply Natural Gas to the Facility and require that the Facility burn Natural Gas. The procedure set forth in Articles 7.2(f) and 7.2(g) of this Agreement shall apply to the implementation of this election. For such time as GPA elects for the Facility to burn Natural Gas, the provisions of Articles 3.3.1(a), (b), (c), (d), (e) and (f) shall apply, mutatis mutandis.

3.4.2 Natural Gas Nominations by the Project Company

After receiving the daily Dispatch Instructions, the Project Company shall provide to GPA the Natural Gas daily nominations as required by the Project Company to satisfy the Dispatch Instructions. The detailed procedure for daily nominations and for renominations shall be determined by the Joint Coordinating Committee.

3.5 Fuel Cost Allocation

(a) When GPA receives bills for Fuel supply and delivery for the Facility, GPA shall send a copy to the Project Company. Once received by the Project Company, the Joint Coordinating Committee shall meet to distribute the cost between the Parties.

(b) For Fuel consumed by the Facility, the Project Company shall be responsible for the cost determined in accordance with Schedule 4 of any Fuel consumed in excess of the quantity of Fuel that should have been required to produce the applicable amount of Net Energy Output had the Facility operated in compliance with the Guaranteed Heat Rate for the simple or combined operation modes as specified in Schedule 4, as adjusted to the operating parameters provided in the applicable Dispatch Instructions.

(c) For Fuel consumed by the Reserve Facility, the Project Company shall be responsible for the cost determined in accordance with Schedule 4 of any Fuel consumed in excess of the quantity of Fuel that should have been required to produce the applicable amount of Reserve Energy Output had the Reserve Facility operated in compliance with the Guaranteed Reserve Energy Heat Rate as specified in Schedule 4, as adjusted to the operating parameters provided in the applicable Dispatch Instructions.

(d) In the event that, in any given hour or portion thereof, the Facility is unavailable to operate at one hundred percent (100%) load due to a reason other than the fault of GPA, an event of Force Majeure, a Change in Law or an Excusable Event, and this event occurs during a Scheduled Outage, Maintenance Outage or Forced Outage after the Facility has exceeded its Allowable Total Outages Energy for the applicable Contract Year pursuant to Article 8.3, then the Guaranteed Heat Rate used to calculate the Fuel cost allocation for fuel used by the Facility shall be the Guaranteed Heat Rate applicable to the load at which the Facility would have been dispatched had the Facility been available to operate at one hundred percent (100%) load, as further specified in Schedule 4.

(e) Commencing from the third (3rd) anniversary of the Commercial Operation Date, the Project Company may from time to time request an amendment or supplement to the terms of this Agreement to incorporate a Fuel saving bonus for Fuel consumed by the Facility on terms that are mutually acceptable to the Parties. Upon receipt of such a request, the Parties shall negotiate reasonably and in good faith to seek to reach agreement on the terms of such a Fuel saving

bonus, which shall be reflected in an amendment or supplement to the terms of this Agreement.

3.6 Set-off for Fuel Costs

Any amounts owed to GPA by the Project Company with respect to Fuel, if any, shall be deducted from the monthly invoice as set forth in Article 13.

3.7 Non-Conforming Fuel

(a) If GPA supplies Non-Conforming Fuel, Project Company may send a Notice to GPA notifying that Project Company has received Non-Conforming Fuel.

(b) GPA shall, promptly upon becoming aware of such delivery or promptly upon receipt of the Notice from Project Company referred to in paragraph (a) above, take such steps as are reasonably necessary to rectify the situation and shall send a Notice to Project Company stating, to the extent known to GPA, the period during which the Non-Conforming Fuel was delivered, the quantity thereof and how its specifications vary from the ones set out in Schedule 6 or Schedule 7, as the case may be, and the steps it is taking (and will take) to rectify the situation.

(c) Except for Fuel accepted by the Project Company pursuant to Article 3.3.1(f), Project Company shall be under no obligation to accept, or operate the Facility or the Reserve Facility, on such Non-Conforming Fuel. In the event that the Dependable Capacity would otherwise be available but for the delivery of Non-Conforming Fuel, then GPA shall remain obligated to pay the Capacity Charge.

ARTICLE 4
TERM, DEFAULTS AND REMEDIES

4.1 Term of Agreement

(a) Except for the provisions of Articles 1, 2, 4, 5.5, 6, 10, 15, 16, 18, 19, 21 and 22 (which shall commence and be effective upon the date of signature of this Agreement), the term of this Agreement ("**Term**") shall commence and be effective upon Financial Close (provided that this Agreement shall be effective upon satisfaction or waiver of all conditions precedent other than the condition to achieve Financial Close if the only condition precedent to Financial Close that is not satisfied or waived is that any or all of this Agreement or other Project Agreement is not in full force and effect because Financial Close has not occurred) and shall terminate twenty five (25) Contract Years after the Commercial Operation Date, unless extended or earlier terminated pursuant to the provisions of this Agreement. The termination of this Agreement shall be without prejudice to all rights and obligations of the Parties accrued under this Agreement prior to the date of such termination.

(b) On or before the end of the twenty-first (21st) Contract Year the Parties shall meet to discuss whether the Term of this Agreement shall be extended. To the extent the Parties agree to extend the Term, then the terms and conditions of this Agreement shall be negotiated and mutually agreed by the Parties, as required and appropriate. To the extent this Agreement is not extended, then this Agreement shall terminate in accordance with its terms and conditions, and the Parties shall commence the implementation of the Project Facilities Transfer procedures set forth in Article 17.

4.2 Project Company Events of Default

The Project Company shall be in default under this Agreement upon the occurrence of any of the following events set forth in subsections (a) to (r) below (each a "**Project Company Event of Default**"); provided, however, that none of such events shall constitute a Project Company Event of Default if such event (a) results from a breach or default by GPA under this Agreement or the LLA or (b) occurs as a result of, or during, a Force Majeure pursuant to Article 16. Subject to the proviso in the preceding sentence, the following are Project Company Events of Default:

(a) the failure of Project Company to achieve Financial Close by the Required Financial Closing Date due to the failure of the Project Company, in the reasonable opinion of GPA, to use commercially reasonable efforts to do so;

(b) the failure of Project Company to issue the Notice to Proceed to the Construction Contractor within two (2) Business Days after Financial Close;

(c) prior to the achievement of the Commercial Operation Date, an Abandonment occurs without GPA's prior written consent and continues for a period of thirty (30) consecutive Days from the receipt of a Notice from GPA;

(d) the failure of the Project Company to achieve the Commercial Operation Date within one hundred and eighty (180) Days after the Required Commercial Operation Date;

(e) the failure of Project Company to submit the Performance Bond on or before Financial Close;

(f) the failure of the Project Company to establish and maintain any Security in accordance with the terms of this Agreement;

(g) after the Commercial Operation Date, an Abandonment occurs without the prior written consent of GPA and continues for a period of fifteen (15) consecutive Days from receipt of a Notice from GPA;

(h) the failure of the Facility to achieve the Threshold Capacity upon completion of the Commercial Operation Tests under Article 7.1 or, after the Commercial Operation Date, the failure of the Facility to (A) achieve a Dependable Capacity level equal to eighty-five percent (85%) of the Initial Dependable Capacity after any Dependable Capacity Test and (B) achieve such level of Dependable Capacity after a later Dependable Capacity Test or otherwise make available to GPA such level of capacity, in each case no later than six (6) Months after the test mentioned in (A) above, provided that, in the case of a failure of equipment where the Project Company can demonstrate that replacement equipment has been ordered, or that a repair has been undertaken, as soon as reasonably practicable after the failure (taking into account the amount of time required to determine whether a repair can be achieved), but in any event no later than the end of such six (6) Month period, such period shall be extended for as long as Project Company is awaiting delivery of such equipment or is otherwise diligently pursuing a cure of the cause of the failure, up to a maximum of fifteen (15) Months;

(i) should the Facility experience more than two hundred and eighty-five (285) Outage Hours in each month for a period of six (6) consecutive Months, provided that, in the case of a failure of equipment where the Project Company can demonstrate that replacement equipment has been ordered, or that a repair has been undertaken, as soon as reasonably practicable after

the failure (taking into account the amount of time required to determine whether a repair can be achieved), but in any event no later than the end of such six (6) Month period, such period shall be extended for as long as the Project Company is awaiting delivery of such equipment or is otherwise diligently pursuing a cure of the Forced Outage, up to a maximum of fifteen (15) Months;

(j) Project Company's failure to operate, maintain, modify, or repair the Project Facilities in accordance with Prudent Utility Practices and applicable environmental Laws, such that the safety of persons and property (including the Project Facilities) is materially adversely affected, and such failure shall continue unremedied for a period of thirty (30) Days after Notice from GPA, provided that where Project Company has implemented a remedial plan approved by GPA, such failure shall continue unremedied for a period of ninety (90) Days after Notice from GPA;

(k) the occurrence of any of the following events: (i) the passing of a resolution by the Investors for voluntary liquidation (or other similar relief) of Project Company; (ii) the appointment of a liquidator by Project Company or by the Controller of Companies for liquidation of Project Company; (iii) submission of an application to a court of competent jurisdiction for mandatory liquidation of Project Company which application is not dismissed within ninety (90) Days, (iv) the issuance of a final and conclusive order by a court of competent jurisdiction for liquidation or winding up of Project Company; or (v) except as otherwise permitted under and pursuant to the Financing Documents or the Project Agreements, the transfer, conveyance, loss, or relinquishment to any person of Project Company's right to own and/or operate the Project Facilities or any material part thereof or to occupy the Site without the prior written approval of GPA;

(l) any statement, representation or warranty by Project Company in this Agreement proves to have been incorrect, in any material respect, when made and such failure or incorrect statement, representation, or warranty has a material and adverse effect on Project Company's ability to perform its obligations under this Agreement;

(m) the failure of Project Company to make any payment or payments required to be made by it hereunder (other than payments disputed by Project Company in good faith and by Notice to GPA) within thirty (30) Days of the due date for such payment;

(n) any material breach by Project Company of this Agreement (other than any such breach referred to elsewhere in this Article 4.2), that is not remedied within sixty (60) Days after Notice from GPA to Project Company (which Notice shall (i) state that a material breach of this Agreement has occurred that could result in the termination of the Agreement; (ii) identify the material breach in question in reasonable detail; and (iii) demand remedy thereof);

(o) the occurrence of a Project Company Event of Default under the LLA or Water Supply Agreement (as such term is defined in each such agreement), which is not cured within the applicable cure period (if any) provided for therein;

(p) Project Company makes an assignment of this Agreement or transfers or creates a lien on the Project in violation of Article 20.2;

(q) the failure of Project Company to obtain or maintain the Government Authorizations during the Term of this Agreement and its extension, without

which the Project Company cannot comply with its material obligations under the Project Agreements, which is not remedied within ninety (90) Days after Notice from GPA; and

(r) except as otherwise provided in this Article 4.2, Project Company shall fail to comply with any of its other obligations under this Agreement and such failure has a material adverse effect upon GPA, and such failure shall continue uncured for sixty (60) Days after Notice from GPA to the Project Company, provided that if such failure is not capable of being cured within such period of sixty (60) Days with the exercise of commercially reasonable efforts, then such cure period shall be extended for an additional reasonable period of time (not to exceed one hundred and twenty (120) Days) so long as Project Company is exercising commercially reasonable efforts to cure such failure.

GPA shall deliver to the Lenders' agent ("**Agent**") (in accordance with the Lenders' Direct Agreement) a copy of any Notice given under this Article 4.2.

4.3 GPA Events of Default

GPA shall be in default under this Agreement upon the occurrence of any of the following events set forth in subsections (a) to (e) (each a "**GPA Event of Default**"); provided, however, that none of such events will constitute a GPA Event of Default if such event (i) results from a breach or default by Project Company under this Agreement or the LLA, or (ii) occurs as a result of a Force Majeure pursuant to Article 16. Subject to the proviso in the preceding sentence, the following are GPA Events of Default:

(a) the submission for voluntary liquidation (or other similar relief) of GPA by GPA or any Government Entity with the authorization to make such submission, the appointment of a liquidator by GPA or the Public Utilities Commission, the submission of an application to a court of competent jurisdiction for mandatory liquidation of GPA which application is not dismissed within ninety (90) Days, or the issuance of a final and conclusive order by a court of competent jurisdiction for liquidation or winding up of GPA;

(b) any default or defaults by GPA in the making of any payment or payments (other than payments disputed by GPA in good faith and by Notice to Project Company) required to be made by it within thirty (30) Days of the due date for such payment;

(c) any material breach by GPA of this Agreement (other than any such breach referred to elsewhere in this Article 4.3) that is not remedied within sixty (60) Days after Notice from the Project Company to GPA (which Notice shall (i) state that a material breach of this Agreement has occurred that could result in the termination of this Agreement, (ii) identify the material breach in reasonable detail and (iii) demand remedy thereof);

(d) any statement, representation, or warranty made by GPA in this Agreement proves to have been incorrect in any material respect when made, and such failure or incorrect statement, representation, or warranty has a material and adverse effect on GPA's ability to perform its obligations under this Agreement; or

(e) the occurrence of a GPA Event of Default under the LLA (as such term is defined therein) which is not cured within the applicable cure period (if any) provided for therein.

The Project Company shall deliver to the Agent a copy of any Notice given under this Article 4.3.

4.4 GPA Early Termination and Termination for Prolonged Force Majeure

(a) GPA shall have the right to terminate this Agreement for convenience at any time subject to the terms and procedures set forth in Article 4.5(e).

(b) GPA shall have the right to terminate this Agreement during a Prolonged Force Majeure, subject to the terms and procedures set forth in Article 4.5(g), unless (i) the Project Company is exercising reasonable efforts to resolve the impact of the underlying Force Majeure event on the Project Facilities' performance, (ii) that such resolution is reasonably expected to occur within three (3) months from the end of the eighteen (18) month period described in the definition of Prolonged Force Majeure, and (iii) result in the Facility operating, on a continuing basis, with an annual availability of ninety percent (90%) or more.

4.5 Termination Notices and Rights

(a) Upon the occurrence of a GPA Event of Default or a Project Company Event of Default, as the case may be, the non-defaulting Party may, subject to the Lenders' Direct Agreement, at its option, initiate termination of this Agreement by delivering a Notice of its intent to terminate this Agreement (a "**Notice of Intent to Terminate**") to the defaulting Party and the Agent. The Notice of Intent to Terminate shall specify in reasonable detail the Project Company Event of Default or the GPA Event of Default, as the case may be, giving rise to such Notice.

(b) Following the delivery of a Notice of Intent to Terminate, the Parties shall consult for a period of up to forty-five (45) Days in the case of a failure by either Party to make payments when due, and up to sixty (60) Days with respect to any other Event of Default (or such longer period as the Parties may mutually agree), as to what steps shall be taken with a view to mitigating the consequences of the relevant Event of Default taking into account all the circumstances. During the period following the delivery of the Notice of Intent to Terminate, the Party in default may continue to undertake efforts to cure the Event of Default, and if the Event of Default is cured at any time prior to the delivery of a Termination Notice in accordance with Article 4.5(c) then the non-defaulting Party shall have no right to terminate this Agreement in respect of such cured Event of Default.

(c) Upon expiration of the consultation period described in Article 4.5(b) and unless the Parties shall have otherwise agreed or unless the Event of Default giving rise to the Notice of Intent to Terminate shall have been remedied, the Party having given the Notice of Intent to Terminate may, subject to the Lenders' Direct Agreement and the conditions set forth in subsections (d)-(i) below, terminate this Agreement by delivery of a Notice (a "**Termination Notice**") to the other Party and the Agent, whereupon, subject to the Lenders' Direct Agreement, this Agreement shall immediately terminate.

(d) In the event of a termination by Project Company due to a GPA Event of Default, GPA shall be required to acquire the Project Facilities from Project Company for the applicable GPA Default Transfer Price set forth in Schedule 8. The Parties will commence working together diligently and in good faith to effect such transfer within forty-five (45) Days of GPA's receipt of Project Company's Termination Notice, or as soon as practicable, but otherwise no later than ninety (90) Days thereafter.

(e) In the event of an early termination by GPA for convenience pursuant to Article 4.4(a), GPA shall be required to acquire the Project Facilities from Project Company for the applicable Early Transfer Price set forth in Schedule 8. The Parties shall work together diligently and in good faith to effect such transfer within forty-five (45) Days of Project Company's receipt of GPA's early Termination Notice or as soon as practicable, but otherwise no later than ninety (90) Days thereafter.

(f) In the event of a termination by GPA due to a Project Company Event of Default, GPA shall have the right, but not the obligation, to acquire the Project Facilities from Project Company for the applicable Project Company Default Transfer Price set forth in Schedule 8. In order to exercise such right, GPA shall provide Project Company with Notice of its election to acquire the Project Facilities within sixty (60) Days of the date Project Company received the Notice of Intent to Terminate from GPA, after which the Parties shall commence working together diligently and in good faith to effect such transfer within forty-five (45) Days of Project Company's receipt of GPA's Notice of its election to acquire the Project Facilities or as soon as practicable, but otherwise no later than ninety (90) Days thereafter.

(g) In the event of a termination by GPA due to a Prolonged Force Majeure pursuant to Article 4.4(b), GPA shall have the right, but not the obligation, to acquire the Project Facilities from Project Company for the applicable Force Majeure Transfer Price set forth in Schedule 8. In order to exercise such right, GPA shall provide Project Company with Notice of its election to acquire the Project Facilities within sixty (60) Days of the date Project Company receives the applicable Notice of Intent to Terminate from GPA, after which the Parties will commence working together diligently and in good faith to effect such transfer within ninety (90) Days of Project Company's receipt of GPA's Notice of its election to acquire the Project Facilities or as soon as practicable, but otherwise no later than ninety (90) Days thereafter.

(h) Any transfer contemplated in subsections (d)-(g) above shall:

(i) be free and clear of all liens or other encumbrances;

(ii) include all right, title and interest in and to the Project Facilities including all fixtures, fittings, plant and equipment (including all test equipment, special tools, as-built drawings, software, documents, reports, analyses, all relevant files, plant procedures and forms as reasonably required and necessary for GPA to effectively operate the Project Facilities after the transfer) and all improvements comprising the Project Facilities; and,

(iii) include, at GPA's election and upon the payment of the applicable transfer price in Schedule 8, the assignment by the Project Company to GPA of the Construction Contract, LTPA and O&M Contract, including, for the avoidance of doubt, the assumption by GPA of all rights, obligations and liabilities of the Project Company under the foregoing agreements.

(i) In the event of a termination resulting in Project Company (or any successor thereof) continuing to be the owner of any of the Project Facilities, the Parties shall enter into a connection agreement (the "**Connection Agreement**") whereby the Project Company shall be granted the exclusive rights to use the Electrical Interconnection Facilities and to provide capacity and inject energy to the Grid System from the Project Facilities at the Delivery Point as if this Agreement had not been terminated; provided that the Connection

Agreement shall (i) be compliant with the applicable system grid code, (ii) have a term that is equal to or greater than the remaining term of this Agreement immediately prior to its termination, and (iii) obligate GPA to operate and maintain the Electrical Interconnection Facilities in accordance with the applicable system grid code and Prudent Utility Practices for a reasonable and customary annual fee limited to the amount necessary to cover the reasonable costs of such operation and maintenance.

4.6 Other Remedies

(a) The exercise of the right of a Party to terminate this Agreement, as provided herein, does not preclude such Party from exercising other remedies that are provided herein or available at Law, provided that, notwithstanding the above:

(i) no Party may terminate this Agreement other than in accordance with the express terms of this Agreement;

(ii) the termination rights, rights to liquidated damages, and right to draw under the Performance Bond as expressly set out in this Agreement shall be the sole and exclusive remedies available to GPA against Project Company or the Project for any delay in Commissioning or failure of any Project Facility to be available or to meet the Dependable Capacity and/or outage requirements set out in this Agreement; and

(iii) the termination right and right to draw under the Bid Guarantee shall be the sole and exclusive remedies available to GPA against Project Company for failure to achieve Financial Close by the Required Financial Closing Date.

(b) Subject to Article 4 and Article 4.6(a) above, remedies are cumulative, and the exercise of, or failure to exercise, one or more of them by a Party shall not limit or preclude the exercise of, or constitute a waiver of, other remedies by such Party.

ARTICLE 5
COVENANTS, REPRESENTATIONS AND WARRANTIES

5.1 Project Company Covenants

The Project Company hereby covenants and agrees with GPA to:

(a) develop, design, permit, engineer, finance, construct and complete the Project Facilities in a good and workmanlike manner, only with materials and equipment that are new and of international utility-grade quality, and in all material respects in accordance with:

(i) the Functional Specifications set forth in Schedule 1;

(ii) the plans and specifications prepared in accordance with this Agreement;

(iii) the Technical Limits set forth in Schedule 2;

(iv) the U.S. EPA requirements;

(v) all applicable Laws and the Government Authorizations;

(vi) Prudent Utility Practices; and

(vii) FERC and NERC requirements;

(b) design, engineer, construct and complete the Facility in such a manner as to provide, with proper maintenance and operation, that the useful life of the Facility will be at least equal to thirty (30) years;

(c) after the Commercial Operation Date, operate and maintain the Project Facilities in all material respects, in accordance with:

(i) the Operating Procedures developed pursuant to Article 6.4 and the Dispatch Instructions;

(ii) the Technical Limits set forth in Schedule 2;

(iii) the Guam and U.S. EPA requirements;

(iv) all applicable Laws and the Government Authorizations; and

(v) Prudent Utility Practices;

(d) use all reasonable efforts to procure and maintain all Government Authorizations necessary for its performance under this Agreement;

(e) engage only such advisors, representatives and experts as are experienced in the development, engineering, construction, financing, operation and maintenance of power stations similar to the Project Facilities;

(f) provide at its own risk and expense the necessary facilities and services for the safety, comfort and protection of its personnel;

(g) work and cooperate in good faith with GPA with respect to all of GPA's obligations and rights hereunder;

(h) ensure that the Construction Contract, LTPA and O&M Agreement (if any) are freely assignable to GPA (at no cost to GPA for such assignment beyond the applicable transfer price under Schedule 8) upon an early transfer of the Project Facilities pursuant to Article 4; and

(i) ensure that the Project does not have a debt to equity ratio in excess of 80% to 20% and that the Lead Bidder maintains at least 35% of the Project equity.

5.2 GPA Covenants

GPA hereby covenants and agrees with Project Company to:

(a) work with and cooperate in good faith with Project Company with respect to all of Project Company's obligations and rights hereunder;

(b) upon request by Project Company, use its reasonable efforts to support Project Company in obtaining the Government Authorizations required by Article 6; and

(c) deliver possession of the Site to the Project Company no later than the date of this Agreement, and in accordance with the provisions of the LLA.

5.3 The Project Company Representations and Warranties

The Project Company hereby represents and warrants at the date of this Agreement that:

(a) the Project Company is a company duly organized, validly existing and in good standing under the Laws of Guam, and Project Company has all requisite corporate power and authority to conduct its business, to own its properties, and to execute, deliver, and perform its obligations under this Agreement;

(b) the execution, delivery and performance by Project Company of this Agreement have been duly authorized by all necessary corporate action on the part of Project Company, and do not and will not:

(i) require any consent or approval of Project Company's board of directors, shareholders or partners other than those which have been obtained (evidence of which consents and approvals shall be, if it has not heretofore been, delivered to GPA upon its request), or

(ii) violate or result in a breach of, or constitute a default under any provisions of Project Company's articles and memorandum of association or bylaws or other organic documents, or any material indenture, contract, or agreement to which it is a party or by which it or its properties may be bound, or any material law, rule, regulation, order, writ, judgment, injunction, decree, determination, or award presently in effect applicable to Project Company;

(c) to the best of Project Company's knowledge, no Government Authorization or approval by any other Government Authority is necessary for the due execution, delivery and performance by Project Company of this Agreement other than the Government Authorizations or approvals by any other Government Authority as contemplated by this Agreement, the other Project Agreements and the Financing Documents;

(d) this Agreement is a legal, valid and binding obligation of Project Company, enforceable against Project Company in accordance with its terms; and

(e) there is no pending or, to the best of Project Company's knowledge, threatened action or proceeding against Project Company before any court, Government Authority or arbitrator that could materially and adversely affect the financial condition or operation of Project Company or the ability of Project Company to perform its obligations hereunder, or that could affect the legality, validity or enforceability of this Agreement (as in effect on the date hereof).

5.4 GPA Representations and Warranties

GPA hereby represents and warrants at the date of this Agreement that:

(a) GPA is a public corporation and an enterprise fund of the Government of Guam established by the Guam Power Authority Act of 1968, duly organized, validly existing, and in good standing under the Laws of Guam, and has all requisite corporate power and authority to conduct its business, to own its properties, and to execute, deliver, and perform its obligations under this Agreement;

(b) the execution, delivery and performance by GPA of this Agreement have been duly authorized by all necessary corporate or Government action, and do not and will not:

(i) require any consent or approval of GPA's board of directors, shareholders, officers, or officials other than those which have been obtained (evidence of which consents and approvals shall be, if it has not heretofore been, delivered to the Project Company upon its request); and

(ii) violate or result in a breach or constitute a default under any provisions of GPA's articles and memorandum of association or bylaws, or other organic documents, or any material indenture, contract, or agreement to which it is a party or by which it or its properties may be bound, or any material law, rule, regulation, order, writ, judgment, injunction, decree, determination, or award presently in effect applicable to GPA;

(c) to the best of GPA's knowledge, no Government Authorization or approval by any other Government Authority is necessary for the due execution, delivery and performance by GPA of this Agreement other than the Government Authorizations or approvals by any other Government Authority as contemplated by this Agreement, the other Project Agreements and the Financing Documents;

(d) this Agreement is a legal, valid, and binding obligation of GPA, enforceable against GPA in accordance with its terms; and

(e) there is no pending or, to the best of GPA's knowledge, threatened action or proceeding against GPA before any court, Government Authority, or arbitrator that could materially and adversely affect the financial condition or operation of GPA or the ability of GPA to perform its obligations hereunder, or that could affect the legality, validity or enforceability of this Agreement (as in effect on the date hereof).

5.5 Pre-Existing Condition

(a) If a Pre-Existing Condition is discovered during the Pre-Existing Condition Period, Project Company will notify GPA within fourteen (14) Days of such discovery (or, if later, the date when Project Company becomes aware of such discovery).

(b) Following a notification under paragraph (a) above, Project Company will promptly submit to GPA a remediation plan and a proposal for the cost of any remedial action required to remove such Pre-Existing Condition. Within thirty (30) Days of receipt of such plan and proposal, GPA will either (i) approve the remediation plan and proposal or (ii) not approve the remediation plan and proposal (setting out in reasonable detail the reasons therefore).

(c) In the event that GPA does not approve the remediation plan and proposal proposed by Project Company, GPA and Project Company shall discuss in good faith to attempt to agree to such a plan and proposal for a period of thirty (30) Days. In the event of a failure to agree to such a plan and proposal within such thirty (30) Days, GPA shall carry out, or shall appoint a third party to carry out, the remediation work and Project Company shall grant access to the Site or relevant portion of the Pipeline Route to GPA or such third party for this purpose, provided that the remediation work shall be carried out on a timely basis and in a manner that does not interfere with the activities of Project Company and its Contractors, and that all persons present on the Site on behalf

of GPA (or the third party appointed by it to carry out the remediation work) will comply with Project Company or its Contractors' safety rules.

(d) GPA may not unreasonably withhold or delay its consent in relation to any remediation plan and proposal delivered by Project Company pursuant to this Article 5.5 and failure by GPA to respond to any remediation plan and proposal within fifteen (15) Days of receipt of such proposal shall be deemed to constitute GPA's consent to such remediation plan and proposal.

(e) Following any remediation plan and proposal being agreed (or being deemed to have been agreed) by Project Company and GPA and subject to subsections (g) and (h) below:

(i) Project Company shall be responsible for the first one million Dollars (US$1,000,000) (in aggregate) of remediation costs resulting from the discovery of Pre-Existing Site Condition(s) during the Pre-Existing Condition Period;

(ii) Project Company shall be responsible for the first one million Dollars (US$1,000,000) (in aggregate) of remediation costs resulting from the discovery of Pre-Existing Pipeline Route Condition(s) during the Pre-Existing Condition Period; and

(iii) GPA shall be responsible for (i) all remediation costs resulting from the discovery of Pre-Existing Site Condition(s) during the Pre-Existing Condition Period in excess of the one million Dollars (US$1,000,000) of costs (in aggregate) to be met by Project Company and (ii) all remediation costs resulting from the discovery of Pre-Existing Pipeline Route Condition(s) during the Pre-Existing Condition Period in excess of the one million Dollars (US$1,000,000) of costs (in aggregate) to be met by Project Company, and GPA shall pay such costs to Project Company within thirty (30) Days of receipt of an invoice from Project Company in respect of such costs. Notwithstanding the above, only reasonable and documented remediation costs shall be considered in determining whether and to what extent GPA may be responsible for remediations costs under this subsection (e).

(f) Late payment of any invoice delivered by Project Company under this Clause shall accrue interest in accordance with Article 13.4. Project Company shall not be in default or breach of any of its obligations under this Agreement where such default or breach is directly attributable to a Pre-Existing Condition.

(g) Project Company shall exercise commercially reasonable efforts to mitigate the effects and costs of any Pre-Existing Condition. GPA shall have no obligation to pay any remediation costs pursuant to this Article 5.5 to the extent such costs are incurred due to a failure by Project Company to meet its obligation under this subsection (g).

(h) Prior to finalizing the design of the Project Facilities, Project Company shall perform early-stage site investigation and analysis consistent with Prudent Utility Practices. GPA shall not be obligated to pay remediation costs (and subsection (f) shall not excuse Project Company from any of its obligations under this Agreement) for any Pre-Existing Condition that was not notified to GPA within fourteen (14) Days of the date such condition was discovered.

ARTICLE 6
PRE-OPERATIONAL PERIOD

6.1 Permits, Licenses and Approvals

Prior to the Commercial Operation Date, Project Company shall, at its own expense, obtain and maintain all Government Authorizations or any other permit, license, approval or authorization required to be obtained and maintained by Project Company as and when required to comply with its obligations under this Agreement, including reaching Financial Close by the Required Financial Closing Date and achieving the Commercial Operation Date by the Required Commercial Operation Date.

6.2 Documents to be Submitted by Project Company

Project Company shall provide the following documents to GPA:

(a) as soon as available but no later than the earlier of Financial Close and Notice to Proceed, a complete copy of the Construction Contract, including all exhibits and schedules thereto, and complete plans and specifications for the construction of the Project Facilities, including drawings and interconnection points for SCADA and AGC, as soon as these are completed, provided that the Project Company shall be entitled to redact certain commercial terms from the copy of the Construction Contract supplied to GPA;

(b) as soon as available but no later than the earlier of Financial Close and Notice to Proceed, a complete copy of the O&M Contract (if applicable), including all exhibits and schedules thereto, provided that Project Company shall be entitled to redact certain commercial terms from the copy of the O&M Contract supplied to GPA;

(c) as soon as available but no later than Financial Close, a complete copy of the Water Supply Agreement;

(d) on or before Financial Close, complete copies of all Government Authorizations that have been issued to Project Company for the design, financing, construction, operation and maintenance of the Project Facilities;

(e) as soon as available, copies of all Government Authorizations other than those provided under the preceding clause that have been issued to Project Company or the Contractors (as applicable) for the design, financing, construction, operation and maintenance of the Project Facilities;

(f) on or before Financial Close, a copy of Project Company's quality control program, safety program, environmental compliance program, and security (including cybersecurity) program, each with respect to all aspects of the design, engineering, equipping, construction, and operation and maintenance of the Project Facilities;

(g) on or before the Construction Start Date, complete copies of all insurance policies and certificates of insurance required for construction as indicated in Article 14, provided that Project Company shall be entitled to redact from the copy of the insurance policies supplied to GPA, all commercial terms and all other information that Project Company reasonably considers to be of a confidential or proprietary nature;

(h) as soon as available, but not later than the Commercial Operation Date, complete copies of all insurance policies and certificates of insurance obtained pursuant to Article 14 other than those provided under the preceding subsection;

(i) at least one hundred and twenty (120) Days (or such other period as shall be agreed between the Parties) before the scheduled commencement of the Testing and Commissioning for the Project Facilities, detailed programs and protocols to be used during the Testing and Commissioning of the Project Facilities consistent with the provisions of this Agreement, including Article 7 and Schedule 3. The GPA Engineer and GPA shall have the opportunity to comment on the proposed program and protocols within thirty (30) Days of receipt from Project Company of said documentation, and the GPA Engineer, GPA, and Project Company will work together to agree on the procedures and protocols to be used for Testing and Commissioning not later than sixty (60) Days prior to the scheduled commencement of the respective Testing and Commissioning;

(j) at least sixty (60) Days before the scheduled commencement of the Commercial Operation Tests, the intended start up and test schedule;

(k) not later than thirty (30) Days after the Commercial Operation Date, copies of all test results, certified by the GPA Engineer, for the Commercial Operation Tests performed with respect to the Project Facilities; and

(l) all the drawings, manuals, procedures, and other technical documents listed in Schedule 1 at the time specified in Schedule 1.

6.3 Supply of Power

(a) The Project Company will arrange for the supply of all electrical energy and capacity required for construction of the Project Facilities through (i) self-generation, or (ii) to the extent available, through making arrangements to purchase construction power from the GPA.

(b) GPA will arrange for backfeed power to be available at the Harmon Substation as required for Testing and Commissioning. Any such backfeed power shall be charged to Project Company at the prevailing rates applicable to such power.

(c) Project Company will arrange for the supply of all electrical energy and capacity required for the maintenance and operation of the Project Facilities by (i) generating it with Project Company's own facilities, or (ii) to the extent available, using backfeed power through GPA's Harmon substation. Any such backfeed power, to the extent it is supplied by GPA, shall be paid to GPA by Project Company at the then current rate for electricity at that location.

6.4 Operating Procedures

(a) Not later than one hundred and eighty (180) Days before the Required Commercial Operation Date, Project Company shall provide GPA with a first draft of its proposed operating procedures dealing with all operation interfaces between GPA and Project Company, including the method of day-to-day communication, key personnel lists, clearances and switching practices, outage scheduling, capacity and energy reporting, operating log and reactive power support, which procedures shall be consistent with this Agreement, the designs of the Project Facilities and the Grid System (including the principles and guidelines developed by GPA for the Grid System as part of and in accordance with the applicable system grid code and as provided to Project

Company), and Prudent Utility Practices (the "**Operating Procedures**"). GPA shall cooperate with Project Company, including by providing responses to reasonable requests for information submitted by Project Company in preparation of the Operating Procedures.

(b) Within ninety (90) Days after GPA's receipt of the first draft of the Operating Procedures, GPA shall notify Project Company of any requested deletions, amendments or additions which, in the exercise of GPA's reasonable judgment, are necessary or desirable. Project Company shall make any deletions, amendments or additions that GPA reasonably requests unless such requests would be inconsistent with this Agreement, the designs of the Project Facilities, and the Grid System or Prudent Utility Practices. GPA may, from time to time, require the Operating Procedures to be revised to conform to any duly established grid code binding on GPA to the extent that those revisions are not inconsistent with the terms of this Agreement, the designs of the Project Facilities, the Grid System (including the principles and guidelines developed by GPA as part of and in accordance with the applicable system grid code for the Grid System), and Prudent Utility Practices.

6.5 GPA Observation Visits

GPA shall have the right, upon reasonable prior Notice, and subject to the safety rules and regulations of Project Company, to have its agents or employees at the Site at any time; provided that (i) such visits do not unreasonably interfere with the construction, Testing, Commissioning, operation or maintenance of the Project Facilities and (ii) such visits are at GPA's own expense. All persons visiting the Project Facilities on behalf of GPA shall comply with the reasonable instructions and directions of Project Company and/or its Contractors. GPA shall bear responsibility for any claim, demand, action, proceeding, loss or damage to such persons or any property of Project Company caused by the negligence or wilful misconduct of any persons visiting pursuant to this Article 6.5 or the negligence or wilful misconduct of GPA during such visits. Insurance policies issued to Project Company must also cover GPA personnel and the GPA Engineer other than their bodily injury or death during their visits to the Site during the Term.

6.6 Project Company Progress Reports

Commencing on the date of this Agreement and continuing until the end of the Term, the Project Company shall submit progress reports to GPA prior to the fifteenth (15th) Day of each Month. Such reports shall cover in reasonable detail the progress in the development, permitting, financing, procurement, construction, and operation of the Project Facilities for the preceding Month.

Prior to the Commercial Operation Date, the progress report shall include, as a minimum, an updated critical path schedule, a list of activities completed in the preceding month, a list of activities behind schedule and reasons therefor, a recovery plan for activities more than thirty (30) Days behind schedule, a safety report specifying all safety related incidents (e.g., fatalities, lost time accidents, and near misses), and a list and description of outstanding issues or concerns impacting, or reasonably expected to impact, the Project or its implementation schedule.

Subsequent to the Commercial Operation Date, the progress report shall include, as a minimum, an operational performance report (including hours of operation, gross and net capacity, heat rate, auxiliary load, number of trips, outages, or derations), description of maintenance activity, an updated maintenance plan, a safety report specifying all safety related incidents (e.g., fatalities, lost time accidents, and near misses), a list and detailed description of any environmental or security violations and

a list and description of outstanding issues or concerns impacting the operation and maintenance of the Project Facilities.

ARTICLE 7
TESTING OF THE FACILITY

7.1 Testing of the Facility Prior to the Commercial Operation Date

(a) Project Company shall provide to GPA on an on-going basis relevant information regarding its program for Testing the Facility, including any delay suffered, or reasonably anticipated to be suffered, in the date of synchronization of a Unit (or Facility) or to the Required Commercial Operation Date.

(b) Not less than sixty (60) Days prior to the Required Commercial Operation Date, Project Company will deliver to GPA in writing the final program for Testing, including the expected duration of Project Company's start-up and Testing program and a tentative schedule for conducting all tests required by Schedule 3. Project Company shall advise GPA in writing of its final schedule for the Testing program not less than fifteen (15) Days prior to the commencement of the tests required by Schedule 3. If the schedule for any test required by Schedule 3 is adjusted after Project Company has provided GPA with the final Testing program schedule, Project Company shall advise GPA not less than seventy-two (72) hours prior to the commencement of any such test. On each Day beginning with the Day on which Testing commences, Project Company shall provide GPA with a schedule of the tests to be conducted on the following Day or Days, if such test will continue for more than one (1) Day. All Testing of the Facility shall satisfy the requirements provided in Schedule 3 and the procedures and protocols agreed upon by GPA, Project Company, and the GPA Engineer pursuant to Article 6.2(i). GPA will make all reasonable efforts to accept all the energy generated by the Facility during the Period of Testing and enable full load operation of the Facility during Dependable Capacity Tests.

(c) If GPA is unable to accommodate the schedule for such test or tests as provided by Project Company in the final schedule for the program of tests pursuant to the foregoing Article 7.1(b), GPA will give Project Company a Notice regarding deferral of any test or tests within seventy-two (72) hours of its receipt of the final schedule for Testing, and the Parties will mutually agree on a date for any deferred test or program of tests.

(d) Additional Commercial Operation Tests

(i) Project Company shall be entitled to attempt as many Commercial Operation Tests as are necessary to ensure that the Facility is Commissioned in accordance with the requirements of this Agreement. Project Company shall give GPA not less than seventy-two (72) hours' Notice of each additional Commercial Operation Test it desires to attempt.

(ii) Notwithstanding subsection (i), if the results of a Commercial Operation Test satisfy the applicable minimum performance criteria for successful completion of such Commercial Operation Test, but Project Company is not satisfied with the results of such Commercial Operation Test, Project Company may request additional tests to establish the results of the Commercial Operation Test with at least seventy-two (72) Hours' prior Notice provided to GPA prior to a subsequent test; provided, however, that Project Company will continue to be responsible for any

delay liquidated damages under Article 8.1 and will not be paid for capacity until it has notified GPA that Project Company has designated the test as the Commercial Operation Test in accordance with subsection (iii) below.

(iii) When Project Company is satisfied with a test to establish the Commercial Operation Date, Project Company shall notify GPA that Project Company has designated such test as the Commercial Operation Test. The Initial Dependable Capacity shall be set at any level successfully demonstrated during the Commercial Operation Test up to the Contracted Facility Capacity.

(iv) The Commercial Operation Date shall occur and payment for Capacity Charges shall commence as of the first Day after the Day the Facility is Commissioned. In the event that Project Company is unable to demonstrate in the Commercial Operation Tests (carried out in accordance with the foregoing subsection (i) that the Facility is capable of operating at Threshold Capacity, GPA may terminate this Agreement as a Project Company Event of Default in accordance with Article 4.5.

7.2 Testing of Dependable Capacity and Heat Rate of the Facility after the Commercial Operation Date

The following provisions with respect to Testing the Facility after the Commercial Operation Date shall apply:

(a) Dependable Capacity shall be tested annually (at Project Company's cost) after the Commercial Operation Date at times mutually agreed upon by Project Company and GPA. Project Company may, within twenty-four (24) hours of completion of a Dependable Capacity Test, reject the test and may conduct a retest (at Project Company's cost) at a time to be mutually agreed; provided, however, that Project Company cannot conduct more than two (2) retests of any Dependable Capacity Test before the level of capacity achieved during such a test is set as the Dependable Capacity. Project Company shall give GPA at least forty-eight (48) hours' prior Notice of the first retest and twenty-four (24) hours' prior Notice of the second retest, and any retest shall be conducted within ten (10) Days after the completion of the rejected test.

(b) The test period for the Dependable Capacity Test shall be for six (6) continuous hours. The test shall be run using the Metering System and plant instrumentation for measurements, unless otherwise decided by the Joint Coordinating Committee. The Dependable Capacity shall be the Net Energy Output during those six (6) hours corrected for Site Reference Conditions divided by six (6), but may not exceed the Contracted Facility Capacity. If, as the result of a Dependable Capacity Test, the tested capacity is shown to be above the Dependable Capacity in effect prior to such test, Project Company shall set the Dependable Capacity at the new tested capacity up to the Contracted Facility Capacity, and payments for the Dependable Capacity shall be increased accordingly, effective the Day such Dependable Capacity Test is completed. If, as a result of the Dependable Capacity Test, the tested capacity is shown to be below the Dependable Capacity in effect prior to such test, the Dependable Capacity will be reduced to the newly tested capacity, and payments for the Dependable Capacity shall be decreased to the tested level, effective the Day Dependable Capacity Test is completed.

(c) Between annual tests, GPA may request one (1) additional Dependable Capacity Test (at Project Company's cost) if GPA reasonably believes that the currently set Dependable Capacity does not accurately reflect the Dependable Capacity previously declared to GPA. GPA shall provide written Notice of its request to test fourteen (14) Days prior to the requested test date. Project Company shall be entitled to one (1) retest of such Dependable Capacity Test (at Project Company's cost) before the level of capacity achieved during such a test is set as the Dependable Capacity provided that it rejects the test within twenty-four (24) hours of completing the Dependable Capacity Test. Each such Dependable Capacity Test and, as appropriate, any retest, shall be conducted in accordance with the foregoing subsection (b), within ten (10) Days of its request or, as the case may be, the rejection, and Project Company shall give GPA not less than seventy-two (72) hours' Notice of its intention to perform such retest.

(d) Between annual tests, Project Company may:

(i) conduct one (1) additional Dependable Capacity Test; and

(ii) in addition to Project Company's right to request an additional Dependable Capacity Test under subsection 7.2(d)(i) above, conduct (at Project Company's cost) one additional Dependable Capacity Test if GPA has elected to conduct an additional Dependable Capacity Test mentioned in Article 7.2(c) during a Forced Outage,

in each case, if Project Company reasonably believes that the currently set Dependable Capacity does not accurately reflect the Dependable Capacity that the Facility is able to achieve.

Each such Dependable Capacity Test carried out pursuant to this Article 7.2(d) shall be conducted in accordance with Article 7.2(b) and Project Company shall give GPA not less than seventy-two (72) hours' Notice of its intention to perform each such Dependable Capacity Test.

(e) Notwithstanding anything to the contrary in this Agreement, no Dependable Capacity Test will be conducted during a Scheduled or Maintenance Outage, during the occurrence of a Force Majeure that affects the Facility, or while the consequences of such Force Majeure continue to affect the Facility. For the avoidance of doubt, the additional Dependable Capacity Test mentioned in Article 7.2(c) may be conducted during a Forced Outage.

(f) If GPA requires the Facility to operate on Natural Gas in accordance with the provisions of Article 3.4:

(i) GPA shall issue a Notice to Project Company stating the date, which shall not be less than ten (10) months from the date of the Notice, starting from which it could start the supply of Natural Gas;

(ii) Project Company shall be allowed a period of twenty-five (25) Days following the date set forth in the above-mentioned Notice to implement the switch to Natural Gas and to perform the tests set forth in Schedule 3;

(iii) during such twenty-five (25) Day period, which shall be extended in case of occurrence of any Force Majeure event or unavailability of Natural Gas:

(A) the Facility shall be deemed to provide the Dependable Capacity and the Project Company shall receive the full Capacity Charge;

(B) GPA shall provide sufficient quantities of Natural Gas in order to allow Project Company to implement the switch;

(C) Provision of Natural Gas by GPA to Project Company up to [•][15] MMBtu of Natural Gas (the "**Maximum Natural Gas Switch Quantity**") shall be at GPA's cost;

(D) provision of Natural Gas by GPA to Project Company in quantities exceeding the Maximum Natural Gas Switch Quantity shall be at Project Company's cost; and

(E) Project Company shall perform the tests referred to in Schedule 3 (at Project Company's cost) and shall be required to conduct (including after the expiry of such period) as many retests (at Project Company's cost) as necessary to pass these tests in accordance with the provisions of Schedule 3.

(g) The Parties agree that the provisions of subsection (f) above shall only apply when GPA elects to burn Natural Gas for the first time during the Term.

(h) GPA shall have the right to request that the Facility's Heat Rate be tested (at Project Company's cost) concurrently with any Dependable Capacity Test and Project Company shall be obligated to comply with such request.

7.3 Notice of and Compliance with Testing Procedures

Project Company shall carry out Commissioning of the Facility, the Testing of the Initial Dependable Capacity at or prior to the Commercial Operation Date and the Testing of the Dependable Capacity of the Facility thereafter in accordance with Article 7.2 and Schedule 3. GPA shall use its reasonable efforts to comply promptly with all reasonable requests made by Project Company for assistance in carrying out such Testing and Commissioning. GPA shall be given prior Notice of the Testing or Commissioning procedure in accordance with Article 7.2 and shall be entitled to be present and observe any such testing and Commissioning. The procedures and results of such tests shall be certified by the GPA Engineer.

7.4 Copies of Test Results

Project Company shall provide GPA with copies of the results of all tests performed pursuant to Schedule 3 and after every Major Overhaul of a generating Unit at the Facility. GPA shall not use or disclose such results other than in connection with the administration and enforcement of this Agreement or subject to applicable Law.

7.5 Deemed Commissioning

(a) In the event that for any reason (other than a breach by Project Company of its obligations under this Agreement or any other Project Agreement):

(i) Due to (A) any action or inaction by GPA, the GPA Engineer or GWA which is inconsistent with the terms of this Agreement, the LLA or the Water Supply Agreement (including any failure by GPA to satisfy the

[15] Note to GPA: Sponsors to advise.

Fuel Supply Requirement, (B) the discovery of a Pre-Existing Condition, (C) any failure by GPA or any third party appointed by GPA to carry out remediation work in accordance with Article 5.5(c), or (D) unavailability of Fuel or Water, a Commercial Operation Test is delayed beyond the date falling fourteen (14) Days before the Required Commercial Operation Date, then upon receipt of a certificate from an Independent Engineer to the effect that the Facility is, or would have been, ready for testing by the Required Commercial Operation Date, the Facility shall be deemed Commissioned fifteen (15) Days after the Required Commercial Operation Date (provided that for the avoidance of doubt the Project Company shall in no event be required to pay delay liquidated damages under Article 8.1 for such fifteen (15) Day period) and the Facility shall be deemed to be providing Initial Dependable Capacity equal to the applicable Contracted Facility Capacity from the end of such fifteen (15) Day period for the purposes of payments of Capacity Charges to be made by GPA to Project Company.

(ii) If the Facility has been deemed Commissioned, the Commercial Operation Tests for the Facility shall be conducted at the first available opportunity after such deemed Commissioning, and the Initial Dependable Capacity adjusted as a result of such test in accordance with subsection (b) below. Project Company shall use reasonable efforts to mitigate the delay caused by any of the events mentioned in this Article 7.5(a).

(b) In the event that the Initial Dependable Capacity of the Facility at the Commercial Operation Tests after the Facility has been deemed Commissioned is less than the Contracted Facility Capacity, Project Company shall refund to GPA an amount equal to:

(i) the difference, if any, between the Contracted Facility Capacity and the Initial Dependable Capacity divided by the Contracted Facility Capacity; times

(ii) the total Capacity Charges paid between the date of deemed Commissioning and the date upon which the Initial Dependable Capacity Tests take place; provided, however, that in the event that the Initial Dependable Capacity is less than the Threshold Capacity, the Project Company shall refund all Capacity Charges received based on deemed Commissioning.

(c) If, due to a delay mentioned in Article 7.5(a), the actual Commercial Operation Date does not occur within one (1) month of the Required Commercial Operation Date, GPA shall indemnify Project Company for (i) the actual reasonable documented costs of demobilization and remobilization of the personnel of Project Company, the O&M Contractor and the Construction Contractor, and (ii) for any other actual reasonable documented costs payable to the Construction Contractor.

ARTICLE 8
LIQUIDATED DAMAGES PAYABLE BY PROJECT COMPANY

8.1 Delay in Commissioning

Project Company covenants that the Facility shall be Commissioned on or before the Required Commercial Operation Date. If the Commercial Operation Date has not

occurred by the Required Commercial Operation Date, the Project Company shall pay GPA, as liquidated damages, for the delay in Commissioning a sum equal to:

(a) for the initial sixty (60) day period after the Required Commercial Operation Date, two thousand Dollars (US$2,000) for each Day of delay or fraction thereof; and

(b) thereafter, two hundred and forty thousand Dollars (US$240,000) for each Day of delay or fraction thereof.

In no event shall the damages assessed under this Article 8.1 exceed twenty-eight million eight hundred thousand Dollars (US$28,800,000).

8.2 Failure to Meet Contracted Facility Capacity

(a) Project Company covenants that the Initial Dependable Capacity of the Facility shall not be less than the Contracted Facility Capacity. In the event that upon completion of the Dependable Capacity Test used to establish the Initial Dependable Capacity of the Facility at or prior to the Commercial Operation Date pursuant to Article 7, the Initial Dependable Capacity for the Facility is less than the Contracted Facility Capacity (but greater than the Threshold Capacity), Project Company shall have the option for a period of up to six (6) months from the Commercial Operation Date to undertake Remedial Actions to increase the Initial Dependable Capacity to the Contracted Facility Capacity at its own cost. Within fifteen (15) Days of the expiration of such period or any decision by Project Company not to undertake Remedial Actions (whichever is the earlier to occur), Project Company shall pay to GPA, as liquidated damages, an amount equal to three thousand one hundred Dollars (US$3,100) per kW of the shortfall between the most recently determined Initial Dependable Capacity and the Contracted Facility Capacity.

(b) In no event shall the damages assessed under this Article 8.2 exceed thirty-five million Dollars (US$35,000,000).

(c) Results of all Initial Dependable Capacity Tests and Dependable Capacity Tests shall be valid only to the extent such tests are performed while the Facility operates within the requirements of all Government Authorizations and the environmental permits.

8.3 Excessive Outages

(a) Excessive Forced Outages

Project Company covenants that, in respect of each Contract Year, the Excessive Forced Outages Energy ("**EFOE**") for such Contract Year shall be less than or equal to zero (0).

In the event that, during any Contract Year other than the first Contract Year, the EFOE is greater than zero (0), then Project Company shall pay to GPA, as liquidated damages, the Capacity Damages, calculated as follows:

Capacity Damages (US$) =
Capacity Damages Amount (US$/MW) x 1.3 x EFOE (MWh)/ number of hours in such Contract Year

Where:		
Capacity Damages Amount	=	the product of (i) the Capacity Charge per MW per Month prevailing during the relevant Contract Year and (ii) twelve (12) Months.

The EFOE for any Contract Year, other than as modified in Article 8.3 for the first Contract Year, will be the sum of the actual Forced Outages Energy (FOE) minus the Allowable Forced Outages Energy (AFOE), minus Accumulated Unused Forced Outage Energy (AUFOE), namely:

Excessive Forced Outages Energy (MWh) = [FOE – (AFOE) – (AUFOE)] (each term expressed in MWH)

FOE (MWh)	=	the summation of all periods of Forced Outage of this product: duration of outage (hours) x reduction in Dependable Capacity (MW).
AFOE (MWh)	=	Annual Average Dependable Capacity (MW) x guaranteed maximum Forced Outage hours pursuant to the availability guarantee set forth in Schedule 4.
AUFOE (MWh)	=	Annual Average Dependable Capacity (MW) x unused guaranteed maximum Forced Outage Hours pursuant to the availability guarantee set forth in Schedule 4 from previous Contract Years (MWh), up to a maximum number of such unused hours that may be carried over from prior Contract Years to the then current Contract Year of one hundred and twenty (120) hours[, where unused guaranteed maximum Forced Outage Hours is the sum of the quotients, for each of the previous Contract Years when such quotient was above zero, of (a) AFOE minus FOE, divided by (b) the Annual Average Dependable Capacity for the relevant Contract Year].

If the EFOE for any Contract Year is less than or equal to zero (0), no liquidated damages are due.

(b) Excessive Total Outages

Project Company covenants that, in respect of each Contract Year, the Excessive Total Outages Energy ("**ETOE**") for such Contract Year shall be less than or equal to zero (0).

In the event that, during any Contract Year other than the first Contract Year, the Excessive Total Outages Energy is greater than zero (0), then Project Company shall pay to GPA, as liquidated damages, the Capacity Damages, calculated as follows:

Capacity Damages (US$) =

Capacity Damages Amount (US$/MW) x 1.3 x Excessive Total Outages Energy (MWh)/ the number of hours in such Contract Year

Where		
Capacity Damages Amount	=	the product of (i) the Capacity Charge per MW per Month prevailing during the relevant Contract Year and (ii) twelve (12) Months.

The Excessive Total Outages Energy (ETOE) for any Contract Year, other than as modified in Article 8.3 for the first Contract Year, will be the sum of the actual total outages (FOE, MOE and SOE) minus the Allowable Total Outages Energy (ATOE), minus the difference between the FOE and the AFOE minus Accumulated Unused Scheduled and Maintenance Outage Energy (AUSMOE), namely

Excessive Total Outages Energy (MWh) = [FOE + MOE + SOE - (ATOE) – (AUSMOE)] – [FOE-AFOE-AUFOE)] if

[FOE – AFOE-AUFOE] is above zero or

Excessive Total Outages Energy (MWh) = [FOE + MOE + SOE - (ATOE) – (AUSMOE)] if [FOE – AFOE - AUFOE] is equal to or below zero (each term expressed in MWH)(each term expressed in MWH)

FOE (MWh)	=	the summation of all periods of Forced Outage of this product: duration of outage (hours) x reduction in Dependable Capacity (MW).
MOE (MWh)	=	the summation of all periods of Maintenance Outage of this product: duration of outage (hours) x reduction in Dependable Capacity (MW).
SOE (MWh)	=	the summation of all periods of Scheduled Outage of this product: duration of outage (hours) x reduction in Dependable Capacity (MW).
ATOE (MWh)	=	Annual Average Dependable Capacity (MW) x guaranteed maximum total Outage Hours pursuant to the availability guarantee set forth in Schedule 4.
AFOE (MWh)	=	Annual Average Dependable Capacity (MW) x guaranteed maximum forced Outage Hours pursuant to the availability guarantee set forth in Schedule 4.
AUSMOE (MWh)	=	Annual Average Dependable Capacity (MW) x unused guaranteed maximum Scheduled Outage and Maintenance Outage hours pursuant to the availability guarantee set forth in Schedule 4 from previous Contract Years (MWh), up to a maximum number of such unused hours that may be carried over from prior Contract Years to the then current Contract Year of one hundred and twenty (120) hours, where unused guaranteed maximum Schedule Outage hours and Maintenance Outage hours is the sum of the quotients for each of the previous Contract Years[, when such quotient is a positive number, of (a) ATOE minus AFOE minus the sum of SOE and MOE divided by (b) Annual Average Dependable Capacity for the relevant Contract Year].

If the ETOE for any Contract Year is less than or equal to zero (0), no liquidated damages are due.

8.4 Waiver of Defences

Notwithstanding that GPA may be substantially damaged in amounts that may be difficult or impossible to determine in the event that the Facility (i) is not Commissioned by the date required, (ii) is not capable of achieving and maintaining the Contracted Facility Capacity, (iii) cannot minimize the number of Forced Outages, or (iv) cannot achieve the designated operating levels, the Parties agree that the sums set out in this

Article 8 constitute a genuine pre-estimate of the loss to GPA and as a result are fair and reasonable as liquidated damages and it is further understood and agreed that the payment of liquidated damages is in lieu of actual damages for such occurrences. Project Company hereby waives any defence as to the validity of any liquidated damages in this Agreement on the grounds that such damages are void as penalties.

8.5 Financial Close and Security Deposits

(a) Notice of Possible Delays to Financial Close

Project Company shall, promptly (and in no event later than seven (7) Days after becoming aware thereof) give written Notice to GPA of the occurrence of any event which delays, or is reasonably likely to delay, Financial Close beyond the Required Financial Closing Date. Within fourteen (14) Days after any such initial Notice, Project Company shall provide GPA with a further written Notice substantiating such occurrence in reasonable detail, its effect on Project Company's ability to achieve Financial Close, and its effects, if any, on the Project, including financial implications. Further, Project Company shall thereafter provide such further information and updates as GPA may reasonably request from time to time in order to substantiate such occurrence and/or such effects.

(b) Extension of Required Financial Closing Date

If Project Company does not achieve Financial Close by the Required Financial Closing Date due to reasons other than an Excusable Event, a GPA Delay Event or Project Company's failure, then the Required Financial Closing Date shall be extended until the date that is ninety (90) Days after the original Required Financial Closing Date, provided, however that (A) if the failure to achieve Financial Close is due to the occurrence of one or more Excusable Events, then the Required Financial Closing Date shall be extended on an equitable basis up to a maximum of an additional one hundred and eighty (180) Days to account for such delay, and (B) if the failure to achieve Financial Close is due to a GPA Delay Event, then the Required Financial Closing Date shall be extended on an equitable basis to account for such delay.

Prior to any extension referred to in this subsection (b), the validity period of the Bid Guarantee shall be extended (by written amendment thereto delivered to GPA) until the extended Required Financial Closing Date.

(c) Failure to Achieve Financial Closing

In the event that Project Company fails to achieve Financial Close by the Required Financial Closing Date or extended Required Financial Closing Date, either Party may terminate this Agreement. In the event of such termination, GPA shall be entitled to cash the Bid Guarantee, in which event neither Party shall have any further liability or obligation to the other under this Agreement, except for liabilities accrued hereunder prior to or upon such termination (including liability for any breach of this Agreement by the Project Company).

(d) Financial Closing

At Financial Close, GPA shall return the Bid Guarantee to Project Company and Project Company shall provide to GPA a security deposit (the "**Performance Bond**") in an amount in Dollars equal to sixty-three million and eight hundred thousand Dollars (US$63,800,000) to ensure Project Company's obligations to pay liquidated damages in accordance with Articles 8.1 and 8.2. The

Performance Bond shall terminate three (3) Months after the Day following the Day upon which the Facility is Commissioned (or, in the case that Project Company opts to pursue Remedial Actions, six (6) months thereafter), at which point GPA shall return the Performance Bond to Project Company. The Performance Bond shall consist of either: (i) an unconditional and irrevocable direct pay letter of credit issued by an international bank with an investment grade rating in form and substance reasonably acceptable to GPA; (ii) a bank guarantee issued by an international bank with an investment grade rating in form and substance reasonably acceptable to GPA; or (iii) a performance bond issued by an international surety with an investment grade rating in form and substance reasonably acceptable to GPA.

8.6 Payments of Liquidated Damages

(a) Within fourteen (14) Days after the end of (i) each Month in respect of amounts due pursuant to Articles 8.1 and 8.2, and (ii) each Contract Year in respect of amounts due pursuant to Article 8.3, GPA shall compute and advise Project Company by Notice (a "**Liquidated Damages Notice**") of the amount of liquidated damages, if any, due to GPA pursuant to this Agreement for the preceding Month or Contract Year, as the case may be. Subject to Article 8.6(b), Project Company shall pay to GPA the amount of liquidated damages shown on the Liquidated Damages Notice within thirty (30) Business Days of the date of the Liquidated Damages Notice (the "**Liquidated Damages Due Date**"). If Project Company fails to pay any amount due pursuant to Articles 8.1, 8.2 and 8.3 by the Liquidated Damages Due Date, GPA shall be entitled to draw such amount from the Performance Bond. Interest shall accrue on any unpaid and undrawn amount from the Liquidated Damages Due Date until the date payment is made at the rate of the Bank Rate. Save to the extent that the amount of liquidated damages reflected on the Liquidated Damages Notice is paid to GPA by Project Company or, with respect to liquidated damages pursuant to Articles 8.1, 8.2 and 8.3, drawn from the Performance Bond, the amount of liquidated damages pursuant to Articles 8.1, 8.2 and 8.3 plus accrued interest due to GPA may be set off against amounts owed to Project Company by GPA on the next statement(s) submitted to GPA pursuant to Article 13.

(b) In the event of any Dispute as to the computation or payment of liquidated damages, Project Company shall provide Notice to GPA specifying the amount disputed and the reason therefor. In such event, the amounts not disputed shall be paid as described in this Article 8 and the Dispute shall be settled in accordance with the Dispute resolution procedures set forth in Article 18. If any such Dispute is resolved in favor of GPA, the determination of amounts due to GPA shall include interest at the rate specified for late payment in Article 13.4. Upon resolution, the Project Company shall pay the amount determined to be owed to GPA within ten (10) Days of such resolution, failing which GPA shall be entitled to claim such amount from the Performance Bond, as applicable.

ARTICLE 9
CONTROL AND OPERATION OF THE FACILITY

9.1 Operating Procedures

The Project Facilities shall be operated and maintained in accordance with the Operating Procedures.

9.2 Dispatch

(a) The PSCC will issue Dispatch Instructions to establish the Net Energy Output (in respect of dispatch of the Facility) and Reserve Energy Output (in respect of dispatch of the Reserve Facility) that the Facility and the Reserve Facility, as applicable, are expected to feed into the Grid System during forthcoming periods of time. In coordination with GPA, Project Company shall be responsible for determining the operating modes (including but not limited to the determination of how to load each Unit) that will result in the most efficient and reliable operation.

(b) Project Company shall notify GPA and the PSCC whenever a Dispatch Instruction results in a part of or the whole Facility or Reserve Facility being operated beyond the Technical Limits. Project Company never has an obligation to operate and GPA never has a right to dispatch any of the Project Facilities beyond the Technical Limits. The Operating Procedures shall establish the circumstances under which Project Company will trip a Unit, prior to such Unit being tripped by a protective device. GPA's right to issue Dispatch Instructions in respect of the Reserve Facility is subject to (i) the characteristics and Technical Limits of the Reserve Capacity set forth in Schedule 2 and (ii) compliance with environmental Laws and any applicable environmental Government Authorizations.

(c) Dispatch Instructions shall indicate the total amount of Net Energy Output required during the relevant period, expressed as an amount in MW, which amount may not exceed the Declared Capacity, and the total amount of Reserve Energy Output, if any, required during the relevant period.

9.3 Scheduling of Capacities and Energy

GPA and Project Company shall cooperate in establishing the following scheduling for the Facility's Dependable Capacity and Net Energy Output:

(a) Year-Ahead Notification: Not less than ninety (90) Days before the scheduled Commercial Operation Date and thereafter not less than ninety (90) Days before the beginning of each Contract Year, GPA shall provide to Project Company good faith estimates of its requirements on a Monthly basis, for the Net Energy Output and the maximum capacity required during that Contract Year, but shall not be bound by those figures. GPA will also indicate the desired maintenance periods for the upcoming Contract Year.

(b) Quarter-Ahead Notification: Not less than sixty (60) Days before each quarter of each Contract Year, GPA shall provide to Project Company good faith estimates of its requirements, on a week-by-week basis for the Net Energy Output and maximum capacity required during that quarter and also provisionally for the following quarter, but shall not be bound by those figures.

(c) Month-Ahead Notification: Not less than fourteen (14) Days before each Month, GPA shall provide to Project Company good faith estimates of its requirements on a day-by-day basis, for the Net Energy Output and maximum capacity required during that Month and also provisionally for the following Month, but shall not be bound by those figures.

(d) Week-Ahead Notification: Not later than 12:00 noon on Thursday before each week beginning on each Saturday, GPA shall:

(i) provide Project Company estimated requirements, on an hour by hour basis, for the Net Energy Output and maximum capacity required

during that week and also provisionally, during the following week, but shall not be bound by these figures; and

(ii) determine which Fuel shall be used each hour during that week.

(e) Declared Capacity Notification: To enable GPA to give final schedules of requirements, Project Company shall notify the PSCC, by 8:00 a.m. each Day, of the Declared Capacity and Declared Reserve Capacity available during each hour of the following Day. However, Project Company may notify the PSCC, not less than twelve (12) hours prior to its scheduled occurrence, of any reasonable modification to the Declared Capacity and Declared Reserve Capacity schedule. The Notices that Project Company is required to send to GPA pursuant to this Article 9.3(e) shall include the number of MW available for each Unit during each hour of the following day and the amount and type of Fuel required to comply with the expected dispatch (the "**Unit Available Capacity**"). The availability of the Facility shall be based, for the purposes of determining the Declared Capacity or calculating Outage Hours, on the availability of the Facility with the Fuel that GPA instructs the Project Company to run.

(f) Day-Ahead Notification: Not less than eight (8) hours before the start of each Day the PSCC shall provide to Project Company firm requirements in accordance with Article 9.2(c), on an hour-by-hour basis for capacity during that Day and also, provisionally, during the following Day. The firm requirements shall be binding upon GPA; provided, however, Project Company shall not unreasonably withhold its consent to any reasonable request from GPA for an alteration to its requirements.

(g) The methods for scheduling the capacity may be modified from time to time. Such modifications may be initiated by GPA, the PSCC, or Project Company and must be approved by the Joint Coordinating Committee.

9.4 Scheduled Maintenance

(a) Project Company shall submit its desired schedule of Scheduled Outage periods (including the duration of each such period) to GPA six (6) months before the Required Commercial Operation Date and thereafter on August 1st of each calendar year. Project Company shall seek to schedule any Scheduled Outage periods during the period from January to (and including) April or such other alternative periods as GPA may specify (but, in each case, without any obligation to do so and subject to the recommendations and maintenance requirements of the applicable original equipment manufacturers of the various components of the Project Facilities), provided that GPA specifies at least one (1) year in advance the alternative period and that the period available for Scheduled Outages is of equal duration to the period specified herein. Within thirty (30) Days of receipt of such schedule, GPA shall notify Project Company in writing as to the acceptability of such schedule. Project Company shall use all reasonable efforts to make each such Scheduled Outage period of relatively short duration consistent with the Technical Limits and Prudent Utility Practices.

(b) If GPA does not accept any one or more of the requested Scheduled Outage(s) periods, GPA shall advise Project Company within thirty (30) Days of the receipt of Project Company's notification in accordance with subsection (a) above of the acceptable period when GPA determines any such unacceptable Scheduled Outage can be rescheduled. The rescheduled time shall be as close as reasonably practicable to the requested time, shall be

consistent with the Technical Limits, Prudent Utility Practices and the recommendations and maintenance requirements of the applicable original equipment manufacturers of the various components of the Project Facilities, and shall be of the same duration as the requested period. If GPA fails within such thirty (30) Day period to object to any Scheduled Outage for which it receives Notice pursuant to subsection (a) above or fails within such period to advise Project Company of a substitute time, Project Company may schedule and conduct the Scheduled Outage(s) as initially requested.

(c) Project Company shall schedule Scheduled Outages only at times determined as aforesaid; provided, however, that GPA may not require Project Company to schedule Scheduled Outages in a manner or time which is outside the Technical Limits, is inconsistent with Prudent Utility Practices or the recommendations and maintenance requirements of the applicable original equipment manufacturers of the various components of the Project Facilities.

(d) Notwithstanding the fixing of a time for a Scheduled Outage pursuant to subsections (a), (b) and (c)(c) above, GPA may, upon at least ninety (90) Days prior Notice and upon agreeing to pay the documented increased cost, if any, to the Project Company resulting therefrom, require Project Company to reschedule a Scheduled Outage; provided, however, that (i) GPA shall not require such Scheduled Outage to be rescheduled for a period of shorter or longer duration or in a manner or time that is outside the Technical Limits, or inconsistent with Prudent Utility Practices or the recommendations and maintenance requirements of the applicable original equipment manufacturers of the various components of the Project Facilities, (ii) GPA shall not require that a single Scheduled Outage period be split into two (2) or more periods without compensating Project Company for any additional costs incurred thereby, and (iii) GPA shall not require that a Scheduled Outage be brought forward any earlier than sixty (60) Days from the date of such Notice without the consent of Project Company.

(e) Notwithstanding the fixing of a time for a Scheduled Outage pursuant to subsections (a), (b) and (c) above, Project Company may request a rescheduling of any Scheduled Outage upon ninety (90) Days prior written Notice to GPA. GPA shall respond to such request within ten (10) Business Days and shall not unreasonably withhold its permission for such rescheduling.

(f) When the need arises for a Maintenance Outage, Project Company shall advise GPA of such need and of the commencement and estimated duration of such work, and GPA shall allow Project Company to schedule such Maintenance Outage within a period of time that is reasonable under the circumstances, but in any event not to exceed the time required by the Technical Limits and Prudent Utility Practices. Project Company shall use all reasonable efforts to conduct such Maintenance Outage during off-peak hours. Project Company may advise GPA orally of the above matters set forth in this subsection (f), and GPA shall respond orally within twenty-four (24) hours of such notice. GPA shall confirm its communication in writing within one (1) week of such oral notice.

(g) For those years in which Project Company plans to conduct a Major Overhaul, Project Company shall submit its Major Overhaul schedule (including the number of Units subject to Major Overhaul and outage duration of each Unit for such period) to GPA, for each Contract Year, one (1) year in advance by Notice. It is expected that a Major Overhaul will take place approximately in accordance with Schedule 2, as defined by the manufacturer and will not exceed twenty-three (23) Days per Unit in any Contract Year. Project Company

shall seek to schedule a Major Overhaul outside the months of May through (and including) December (but, in each case, without any obligation to do so and subject to the recommendations and maintenance requirements of the applicable original equipment manufacturers of the various components of the Project Facilities). Within thirty (30) Days of receipt of this schedule, GPA shall notify Project Company in writing as to the acceptability of such schedule. If GPA does not accept this schedule, GPA shall advise Project Company within thirty (30) Days of receipt of such schedule of the time when GPA determines the Major Overhaul can be rescheduled. The rescheduled time shall be as close as reasonably practicable to the requested time, shall be consistent with the Technical Limits, Prudent Utility Practices, and the recommendations and maintenance requirements of the applicable original equipment manufacturers of the various components of the Project Facilities, and shall be of equal duration as the requested period. If GPA fails within the allowed period to object to any Major Overhaul for which it receives Notice pursuant to this Article, or fails within such period to advise Project Company of a substitute time, Project Company may schedule the Major Overhaul as initially requested.

9.5 Emergencies

(a) Project Company shall cooperate with GPA in establishing agreed Emergency plans for the Project Facilities at least ninety (90) Days before the Required Commercial Operation Date, including recovery from a local or widespread electrical blackout and voltage reduction in order to curtail load.

(b) On or after the Commercial Operation Date, Project Company shall, during an Emergency, within no more than fifteen (15) minutes of GPA's request, and more quickly if possible consistent with Prudent Utility Practices, supply such power as one or more of the Project Facilities is able to generate; provided, however, that Project Company shall not be obligated to operate any of the Project Facilities beyond the Technical Limits or beyond the limits which Project Company reasonably believes could result in a trip. If a Scheduled Outage or Maintenance Outage occurs or would occur coincident with an Emergency, Project Company, upon consultation with GPA and at GPA's sole cost and expense, shall make all reasonable efforts to reschedule the Scheduled Outage or Maintenance Outage or, if the Scheduled Outage or Maintenance Outage has begun, expedite the completion of the work to restore power supply as soon as possible.

9.6 Maintenance of Operating Records

(a) Each Party shall keep complete and accurate records and all other data required by each of them for the purposes of proper administration of this Agreement. Among, but not limited to, other records and data required hereby or elsewhere in this Agreement, Project Company shall maintain an accurate and up-to-date operating log at the Project Facilities with records of:

(i) Net Energy Output and Reserve Energy Output production for each demand period and Delivery Point, and bus voltage at all times (for this purpose Project Company shall install a computerized system that will maintain an agreed data base of all pertinent parameters, as determined by the Joint Coordinating Committee);

(ii) changes in operating status, Scheduled Outages, Maintenance Outages and Forced Outages; and

(iii) any unusual conditions found during inspections.

(b) All such records required under Article 9.6(a) shall be maintained for a minimum of sixty (60) Months after the creation of such record or data; provided, however, that the Parties shall not dispose of or destroy any such records after such sixty (60) Month period without thirty (30) Days' prior Notice to the other Party. Either Party shall have the right, upon reasonable prior Notice to the other Party, and at reasonable times during normal office hours, to examine the records and data of the other Party relating to this Agreement or the operation and dispatch of the Project Facilities within the Grid System at any time during the period such records and data are required hereunder to be maintained.

9.7 Annual Report

Project Company shall deliver to GPA an annual operating and maintenance report for each Contract Year, within two (2) Months following the expiration of each Contract Year. Such annual report must include the operation and maintenance report for the prior year and the anticipated operation and maintenance plan and Emergency plan for the upcoming year.

9.8 Project Facility Improvements

Subject to the prior written consent of Project Company and the Agent (in accordance with the Lenders' Direct Agreement), if Project Company shall be requested by GPA to (a) increase the generation capacity of the Project Facilities or (b) add equipment, then Project Company shall (once all relevant details have been agreed by Project Company and GPA) implement and prosecute such request at GPA's expense.

Notwithstanding the first sentence of this Article 9.8, the Project Company shall not prosecute and implement such request until:

(a) GPA and the Project Company shall have agreed on the feasibility, schedule and cost of such implementation and additional construction (if any), with capital costs and operational costs being recoverable through Supplemental Charges or by direct cost-plus reimbursement at the discretion of the Project Company;

(b) the financing for such implementation and construction (if any) has been obtained; and

(c) appropriate adjustments to the Price (if any), including the Capacity Charge and the Energy Charge, have been agreed, and taking into account any lost revenue due to necessary Project Facility outages and all other costs or Losses to be incurred by Project Company as a consequence of the implementation of such changes.

9.9 Reactive Power

If, due to instability in the Grid System, GPA requests Project Company to operate the Facility in a power factor range outside the range mentioned in Schedule 2, Project Company shall comply with such request, provided that (i) it shall not have any obligation to operate the Facility in such a way for more than one (1) hour at a time if, in the opinion of Project Company, it could damage the Project Facilities and (ii) Project Company shall never be required to operate the Project Facilities in a manner that is inconsistent with the Functional Specifications or the Technical Limits and the Contracted Characteristics.

9.10 GPA Access to Site

Project Company shall allow GPA to have reasonable access to the Site subject to prior notice by GPA. GPA personnel will be required to comply with all Project Company safety rules and procedures when accessing the Site.

GPA will be allowed to access the on-site ULSD Storage Facilities, without the need for prior notice, to fuel GPA's tanker trucks at no charge, subject to coordination of such access and fueling pursuant to the Operating Procedures.

9.11 Employment of former GPA Employees by the Project Company

GPA power facilities maintenance and operations employees who may be adversely affected or separated as a result of the commissioning of the Project, shall have an opportunity to be interviewed by the Project Company (in priority to other candidates) for employment at the Project Facilities in positions for which they are qualified. For each case of hiring an existing GPA maintenance and/or operating employee, the Project Company shall advise GPA of their plan for hiring such employee and allow a minimum of six (6) months before beginning the employment period to allow GPA to adjust its plant operation and maintenance activities. If requested by GPA, Project Company will make reasonable efforts to assist GPA with finding a temporary labor pool for positions at their existing power plants that will be vacated by personnel hired by the Project Company.

ARTICLE 10
JOINT COORDINATING COMMITTEE

10.1 Membership

Within ninety (90) Days from the date of this Agreement, the Parties shall establish a Joint Coordinating Committee of ten (10) members, with Project Company and GPA each appointing five (5) members. Each Party shall also appoint two (2) substitutes for each of its members. The substitutes must be appointed at least thirty (30) Days prior to being able to substitute for one (1) of the members. Substitutes may attend the Joint Coordinating Committee meetings but cannot participate in them unless they are replacing a regular member.

The Joint Coordinating Committee shall meet at least once per month.

The chairmanship of the Joint Coordinating Committee shall rotate each year between the Parties, and the first chairman shall be appointed by GPA. The Joint Coordinating Committee shall develop procedures for holding meetings, keeping minutes of meetings, maintaining records and appointing and operating sub-committees as may be required.

10.2 Duties

The power and duties of the Joint Coordinating Committee shall include only the following:

(a) coordination of the respective programs of the Parties for the permitting, design, construction and Commissioning of the Project Facilities, the Fuel supply and delivery interfacing, and the Electrical Interconnection Facilities, and agreement where necessary upon the respective Commissioning procedures;

(b) discussion of the steps to be taken upon shutdown or reduction in capacity for Force Majeure or any other reason;

(c) coordination and modification, if required, of Operating Procedures, including day-to-day communications, dispatching procedures, and Emergency plans and procedures, and compliance with Operating Procedures;

(d) coordination and modification, if required, of scheduled maintenance programs and scheduling and acceptance of performance tests and periodic tests;

(e) review of maintenance records, including results of periodic tests, for compliance with manufacturers' maintenance instructions and recommendations;

(f) coordination of annual, monthly, weekly, and daily forecasts or requirements for the Project Facilities;

(g) developing, monitoring, and auditing the procedures to record Dependable Capacity, reliability, Net Energy Output, Reserve Energy Output and any other parameters that may influence the billing or liquidated damages arising from operation;

(h) developing protocols for invoicing and for measuring Dependable Capacity, Net Energy Output and Reserve Energy Output;

(i) developing detailed procedures with respect to Natural Gas (when available) daily nominations and renominations based on Dispatch Instructions, ambient conditions for the next day and data provided in the tables entitled "Guaranteed Heat Rates at Guaranteed Conditions" and "Guaranteed Heat Rate Correction Curve" contained in Schedule 4;

(j) dealing with safety and security matters affecting the Project Facilities, the Parties, and their Contractors;

(k) consultation on Emergency plans developed by the Parties for recovery from a local or widespread electrical blackout;

(l) review of metering and protective schemes and devices; and

(m) any other matter agreed by the Parties affecting the operation of the Project Facilities and the Grid System.

10.3 Scope and Effect

The Parties agree and acknowledge that the jurisdiction of the Joint Coordinating Committee shall be limited to liaison and consultation only and that any decisions or agreements of the committee shall not be binding upon the Parties absent express written agreement to the contrary. The resolutions, considerations and discussions taking place from time to time within the Joint Coordinating Committee shall at all times remain subject to the express provisions of this Agreement, and, accordingly the respective rights and obligations of the Parties under this Agreement (or otherwise) shall not be affected by Articles 10.1 to 10.2.

10.4 Special Reporting

During any period in which the one hundred and eighty (180) Day period mentioned in Article 4.2(d) is extended, the Joint Coordinating Committee will meet every fourteen (14) Days and the members of the Joint Coordinating Committee appointed by Project

Company will report on the status of the measures taken by Project Company to cure the deficiency.

ARTICLE 11
ELECTRICAL INTERCONNECTION

11.1 Electrical Interconnection Facilities

The Electrical Interconnection Facilities shall be designed, procured, and constructed by Project Company. Upon achieving the Commercial Operation Date and GPA's written acceptance thereof, the ownership, custody and control of the Electrical Interconnection Facilities shall be transferred by Project Company to GPA, after which the latter will operate and maintain the facilities in accordance with Prudent Utility Practices and the applicable system grid code at no cost to the Project Company. The transfer of the Electrical Interconnection Facilities shall be at no cost to GPA.

11.2 Testing

The Parties shall cooperate in testing the Electrical Interconnection Facilities from time to time prior to the scheduled synchronization dates of the Project Facilities and at such other times thereafter as either Party may reasonably require. All such testing shall be carried out on a timely basis.

ARTICLE 12
METERING

12.1 Electrical Metering

The standards for performance measurement systems and testing are specified in Schedule 5.

(a) All electrical metering devices used to measure Net Energy Output and Reserve Energy Output pursuant to this Agreement, and to monitor and coordinate operation of the Project Facilities, shall be purchased, owned, installed and maintained by Project Company according to the specifications in Schedule 5. All electrical metering will be done jointly by the Parties, and each Party shall designate a representative for performing such metering. All electrical metering devices used to provide data for the computation of payments due under this Agreement shall be sealed, and the seal shall be jointly broken by the designated representatives of the Parties when such metering devices are to be inspected and tested or adjusted in accordance with Article 12.1(b) below. The number, type and location of such electrical metering devices shall be on the 115 kV high voltage bushings of the main power transformers and according to the single line diagram presented by Project Company and approved by GPA.

(b) GPA shall inspect, test, calibrate, and if necessary, replace all electrical metering devices upon installation and at least once every three (3) years thereafter. GPA shall provide the Project Company with reasonable advance Notice of, and allow a representative of the Project Company to witness and verify such inspections, tests, calibrations and replacements. Upon the written request by the Project Company, and in the presence of the Project Company, GPA shall perform additional inspections, tests, or calibrations of the electrical metering devices within twenty (20) Days following the date of such written request. The actual expense of any such requested additional inspection, tests, or calibration shall be borne by the Project Company, unless, upon such inspection, tests or calibration, a metering device is found to register

inaccurately by more than zero point two percent (0.2%), in which event the expense of the requested additional inspection or testing shall be borne by GPA. If an electrical metering device is found to be defective or inaccurate, whether or not within the accuracy and repeatability tolerances set forth in Table 1 of Schedule 5, GPA shall, at its own expense, adjust, repair, replace, and/or recalibrate the electrical metering device as near as practicable to a condition of zero (0) error.

(c) The Project Company may elect to install and maintain, at its own expense, back-up electrical metering devices at the Delivery Point in addition to (and identical to) those installed and maintained by GPA, which installation and maintenance by the Project Company shall be in accordance with Prudent Utility Practices.

12.2 Adjustment for Inaccurate Electrical Meters.

(a) If an electrical metering device fails to register, or if the measurement made by a metering device is found upon testing to be inaccurate, an adjustment shall be made correcting all measurements by the inaccurate or defective electrical metering device for the Project for the amount of the inaccuracy and the period of the inaccuracy, in the following manner:

(i) by (x) integrating the capacity measurements obtained by the MW-meter readings which are registered every thirty (30) minutes in the PSCC, or (y) by using the Declared Capacity, whichever is applicable; or

(ii) as may be agreed upon by the Parties.

(b) In the event that the Parties cannot agree on the amount of the adjustment necessary to correct the measurements made by any inaccurate or defective electrical metering device, the Parties shall use GPA's back-up electrical metering device, if installed, to determine the amount of such inaccuracy, so long as such electrical metering devices are tested and maintained in the same manner as Project Company's. In the event GPA's back-up electrical metering devices are also found to be outside the accuracy and repeatability tolerances set forth in Table 1 of Schedule 5, as are applied to Project Company's electrical metering devices under Article 12.1(b) above, the Parties shall estimate the amount of the necessary adjustment on the basis of deliveries of Net Energy Output and Reserve Net Energy Output during periods of similar operating conditions when the electrical metering device was registering accurately;

(c) In the event that the Parties cannot agree on the actual period during which the inaccurate measurements were made, the period during which the measurements are to be adjusted shall be the shorter of (i) the last one-half of the period from the last previous test of the electrical metering device, or (ii) the one hundred and twenty (120) Days immediately preceding the test which found the electrical metering device to be defective or inaccurate.

(d) To the extent that the adjustment period covers a period of deliveries for which payment has already been made by GPA, GPA shall use the corrected measurements as determined in accordance with Articles 12.2(a)(i), 12.2(a)(ii), 12.2(b), or 12.2(c) hereof to recompute the amount due for the period of the inaccuracy and shall subtract the previous payments by GPA for this period from such recomputed amount. If the difference is a positive number, the difference shall be paid by GPA to Project Company. If the difference is a negative number, the difference shall be paid by Project Company to GPA, or

in the sole discretion of GPA, the difference may take the form of an offset to payments due to Project Company by GPA. Payment of such difference by the owing Party shall be made not later than thirty (30) Days after the owing Party receives Notice of the amount due, unless GPA elects payment via an offset.

12.3 Natural Gas Metering

(a) Natural Gas Metering Equipment

(i) GPA at its cost shall be responsible to install and maintain primary Natural Gas measurement equipment at the gas metering station in the Natural Gas pipelines supplying Natural Gas to the Facility in accordance with Schedule 10. GPA shall read its meter(s) at that point and such readings shall be considered official meters.

(ii) Project Company may install Natural Gas backup measurement equipment downstream of GPA's measurement equipment for Natural Gas. In such case, Project Company shall be responsible for installing and maintaining the Natural Gas backup measurement equipment.

(iii) GPA's Natural Gas metering devices shall be inspected, tested, and calibrated by GPA at least once each three (3) years. If Project Company at any time desires a special test of any meter or the computer used in the operation of the GPA's Natural Gas metering devices, it will promptly notify GPA and the Parties will then co-operate to secure a prompt test. All tests of GPA's Natural Gas metering devices shall be made at GPA expense, except that Project Company shall bear the GPA's reasonable cost of special tests made at the Project Company's request if the inaccuracy is found to be within one percent (1%). Following each test, GPA shall ensure that GPA's Natural Gas metering devices shall be adjusted as required to record centrally and accurately.

(iv) Project Company's Natural Gas metering devices shall be inspected, tested, and calibrated by Project Company at least once each three (3) years. If GPA at any time desires a special test of any meter or the computer used in the operation of Project Company's Natural Gas metering devices, it will promptly notify Project Company and the parties will then co-operate to secure a prompt test. All tests of Project Company's Natural Gas metering devices shall be made at Project Company's expense, except that GPA shall bear Project Company's reasonable cost of special tests made at GPA's request if the inaccuracy is found to be within one percent (1%). Following each test, Project Company shall ensure that Project Company's Natural Gas metering devices shall be adjusted as required to record centrally and accurately.

(b) Adjustment for Inaccurate Natural Gas Meters.

(i) If, for any reason, GPA's Natural Gas meters are out of service or registering outside the specified limits, so that the quantity of Natural Gas delivered cannot be ascertained or computed from the reading thereof, the Natural Gas delivered during the period such meters are out of service shall be determined upon the basis of the best data available, using the first of the following methods which is feasible:

(A) by using the quantity recorded by Project Company's Natural Gas meters, if installed and accurately registering;

(B) by adjusting for the error, if the extent of the error is ascertainable by calibration, test or mathematical calculation; or

(C) by estimation on the basis of deliveries (Net Energy Output) during preceding periods of similar demand under similar conditions when the equipment was registering accurately, and for purposes of this estimation, the Parties may agree upon using data from measurements from outside of the measurement facility.

(ii) In the event that the Parties cannot agree on the actual period during which the inaccurate measurements were made, the period during which the measurements are to be adjusted shall be the shorter of (x) the last one-half of the period from the last previous test of the Natural Gas metering device, or (y) the one hundred and twenty (120) Days immediately preceding the test which found the Natural Gas metering device to be defective or inaccurate.

(c) To the extent that the adjustment period covers a period of deliveries for which payment has already been made by GPA, GPA shall use the corrected measurements as determined in accordance with Articles 12.3 and 12.4(b)(i) or (ii) hereof to recompute the amount due for the period of the inaccuracy and shall subtract the previous payments by GPA for this period from such recomputed amount. If the difference is a positive number, the difference shall be paid by GPA to Project Company. If the difference is a negative number, the difference shall be paid by Project Company to GPA, or in the sole discretion of GPA, the difference may take the form of an offset to payments due to Project Company by GPA. Payment of such difference by the owing Party shall be made not later than thirty (30) Days after the owing Party receives Notice of the amount due, unless GPA elects payment via an offset.

12.4 ULSD Metering

(a) ULSD Fuel Metering Equipment

(i) The Project Company shall be responsible for installing primary ULSD measurement equipment at the Fuel Delivery Point in accordance with Schedule 10. These meters will be transferred to GPA at the Commercial Operation Date. GPA will own and maintain these meters and shall read these meter(s) at these points and such readings shall be considered official meters.

(ii) Project Company may install ULSD backup measurement equipment downstream of GPA's measurement equipment for ULSD. In such case, Project Company shall be responsible for installing and maintaining the ULSD backup measurement equipment.

(iii) GPA's ULSD metering devices shall be inspected, tested, and calibrated by GPA at least once each three (3) years. If Project Company at any time desires a special test of any meter or the computer used in the operation of the GPA's ULSD metering devices, it will promptly notify GPA and the Parties will then co-operate to secure a prompt test. All tests of GPA's ULSD metering devices shall be made at GPA expense, except that Project Company shall bear the GPA's reasonable cost of

special tests made at the Project Company's request if the inaccuracy is found to be within one percent (1%). Following each test, GPA shall ensure that GPA's ULSD metering devices shall be adjusted as required to record centrally and accurately.

(iv) Project Company's ULSD metering devices shall be inspected, tested, and calibrated by Project Company at least once each three (3) years. If GPA at any time desires a special test of any meter or the computer used in the operation of Project Company's ULSD metering devices, it will promptly notify Project Company and the parties will then co-operate to secure a prompt test. All tests of Project Company's ULSD metering devices shall be made at Project Company's expense, except that GPA shall bear Project Company's reasonable cost of special tests made at GPA's request if the inaccuracy is found to be within one percent (1%). Following each test, Project Company shall ensure that Project Company's ULSD metering devices shall be adjusted as required to record centrally and accurately.

(v) Project Company shall, or shall have other party(ies) on its behalf, install and maintain measurement equipment at the ULSD truck delivery stations with the coordination and approval of GPA. The specifications and the location for ULSD Fuel meters and the associated metering system are set forth in Schedule 10. The measurement equipment shall be installed next to the storage tank.

(vi) The Project Company's ULSD metering devices shall be inspected tested and calibrated in accordance with the provisions of Schedule 10.

(b) Adjustment for Inaccurate ULSD Meters.

(i) If, for any reason, GPA's main ULSD meters are out of service or registering outside the specified limits, so that the quantity of ULSD consumed cannot be ascertained or computed from the reading thereof, the ULSD consumed during the period such meters are out of service shall be determined upon the basis of the best data available, using the first of the following methods which is feasible:

(A) by using the quantity recorded by Project Company's back-up ULSD meters, if accurately registering; or

(B) by adjusting for the error, if the extent of the error is ascertainable by calibration, test or mathematical calculation.

(ii) In the event that the Parties cannot agree on the actual period during which the inaccurate measurements were made, the period during which the measurements are to be adjusted shall be the shorter of (x) the last one-half of the period from the last previous test of the ULSD metering device, or (y) the one hundred and twenty (120) Days immediately preceding the test which found the ULSD metering device to be defective or inaccurate.

To the extent that the adjustment period covers a period of deliveries for which payment has already been made by GPA, GPA shall use the corrected measurements as determined in accordance with Article 12.4(b)(i) or (ii) hereof to recompute the amount due for the period of the inaccuracy and shall subtract the previous payments by GPA for this period from such recomputed amount. If the difference is a positive

number, the difference shall be paid by GPA to Project Company. If the difference is a negative number, the difference shall be paid by Project Company to GPA, or in the sole discretion of GPA, the difference may take the form of an offset to payments due to Project Company by GPA. Payment of such difference by the owing Party shall be made not later than thirty (30) Days after the owing Party receives Notice of the amount due, unless GPA elects payment via an offset.

ARTICLE 13
BILLING AND PAYMENT

13.1 Invoices

(a) Invoices shall be prepared monthly by Project Company in accordance with this Article 13 for payment by GPA in Dollars, as specified in this Article 13.

(b) GPA and Project Company shall read directly by their representatives or via billing centers the metering devices on the first Day of each Month at 00:00 or 10:00 a.m., commencing with the first Month of the Period of Testing.

(c) Project Company shall render an itemized invoice to GPA by the tenth (10th) Day of each Month of the Term, commencing in respect of amounts due by GPA for deliveries of Net Energy Output (including BESS energy output), Reserve Energy Output and/or Dependable Capacity hereunder, with the first Month immediately following the Month in which the Commercial Operation Date occurs.[16]

(d) Each itemized invoice for amounts due by GPA to Project Company under Article 13.1(c) for deliveries of Net Energy Output (including BESS energy output), Reserve Energy Output and/or Dependable Capacity hereunder in respect of any month from and after the Commercial Operation Date shall show, calculated, where applicable, in accordance with Schedule 4:

(i) Net Energy Output and Reserve Energy Output delivered to GPA during each half hour of the previous Month and the total Net Energy Output and Reserve Energy Output for such Month;

(ii) the Energy Charge for such Net Energy Output, Reserve Energy Output and the Capacity Charge for the previous Month;

(iii) Supplemental Charges, if any;

(iv) any adjustments or offsets pursuant to Articles 8.6, 12 or 17.2;

(v) any adjustments pursuant to Article 13.3;

(vi) any adjustments pursuant to Article 6.3(c);

(vii) any adjustment pursuant to Articles 3.3.2 or 3.5; and

(viii) the total amount in Dollars that is due from GPA to Project Company with respect to such deliveries of Net Energy Output, Reserve Energy Output and Dependable Capacity during the preceding Month, including, for the avoidance of doubt, the full Capacity Charge for the Dependable Capacity in the event that the Dependable Capacity is

[16] Note to parties: To be aligned with Schedule 4 and added if necessary to Schedule 4. If GPA requests dispatch in excess of Declared Capacity, Energy Payments shall be based on the Heat Rate at Declared Capacity.

unavailable, in whole or in part, due to a request by GPA in accordance with this Agreement, due to (v) a Scheduled Outage, (w) a Maintenance Outage, (x) a Forced Outage, (y) a condition caused by GPA or by the Grid System, or (z) the unavailability of Fuel during any period during which the Facility is deemed to provide the Dependable Capacity in Article 7 or Article 16.4.

13.2 Payment

Each invoice shall be paid within thirty (30) Days of receipt thereof, with those portions of the Price to be adjusted and calculated in accordance with Schedule 4.

13.3 Estimates

In order that invoices may be rendered promptly after the end of each Month, it may be necessary, from time to time, to estimate certain factors involved in calculating the monthly billing. Adjustments for errors in such estimates shall be included in the invoice for the first Month following the time when the information necessary to make such corrections or adjustments becomes available.

13.4 Late Payment

If an invoice is not paid within thirty (30) Days of receipt thereof (the "**Invoice Due Date**"), interest on unpaid amounts shall accrue daily from the Invoice Due Date until the date upon which payment is made at the Bank Rate plus two percent (2%) per annum.

13.5 Disputed Amounts

In the event of any Dispute as to the Capacity Charge, Energy Charge, or the Supplemental Charges, GPA shall notify Project Company of the amount in dispute. In such event, the amounts not disputed shall be paid as described in this Article 13 and GPA shall either deposit in escrow with a commercial bank selected by GPA and reasonably acceptable to Project Company an amount equal to the disputed amounts on the date such amounts, if undisputed, would otherwise be due, or furnish to Project Company an irrevocable and unconditional letter of credit issued by a commercial bank selected by GPA and reasonably acceptable to the Project Company in an amount equal to the disputed amounts. This letter of credit shall be in a form and substance reasonably satisfactory to Project Company. The Dispute will be settled in accordance with the Dispute resolution procedures set forth in Article 18. The resolution of the disputed amount shall include interest at the rate specified for late payment in Article 13.4. Upon resolution, the funds in the escrow account shall be disbursed in accordance with the resolution of the matter under Article 18.

13.6 Billing Errors

Any claim regarding an error in invoices previously paid shall be made (in accordance with Articles 13.5 or 13.7) within fifteen (15) Business Days from the date of discovery of such error, but in any event no later than the date six (6) Months after the date of issuance of such invoice. If such claim is not made within the six (6) month period referred to in the previous sentence, the original invoice and the calculations therein shall be binding upon the Parties.

13.7 Inaccurate Meters

In the event adjustments to an invoice are required as a result of corrected measurements made with respect to inaccurate meters as described in Article 12.2, the Parties shall use the method of correcting measurements described in Article 12.2

to recompute the amounts due from or to GPA for the Net Energy Output and Reserve Energy Output, and, in the event of corrected measurements made in respect of any Dependable Capacity Test, the Dependable Capacity sold under this Agreement during the period of inaccuracy. If the total amount, as recomputed, due from a Party for the period of one inaccuracy varies from the total amount due as previously computed, and payment of the previously computed amount has been made, then, following agreement by the Parties on the amount due as a result of the recomputation, Project Company shall promptly issue an adjusted billing statement. The owing Party shall pay any amount owed as shown on such billing statement within thirty (30) Days of the issuance of the adjusted billing statement.

13.8 GPA Lump Sum Payment

(a) On the Commercial Operation Date and the turnover of the Electrical Interconnection Facilities or the ULSD Supply Infrastructure, GPA shall pay to the Project Company the amount of forty million Dollars ($40,000,000) (the "**Lump Sum Payment**"). Such payment shall be by wire transfer of immediately available funds to a bank account designated by the Project Company not later than five (5) Days prior to the due date for payment. Upon the Project Company's receipt of the Lump Sum Payment, the Project Company shall deliver to GPA a written receipt confirming the payment by GPA of the Lump Sum Amount.

(b) From the date falling ten (10) Business Days after the date of this Agreement until GPA makes the Lump Sum Payment, GPA shall retain an amount equal to the Lump Sum Payment in a trustee account that is for the purpose of making the Lump Sum Payment under this Agreement. GPA undertakes not to use the funds standing to the credit of such account for any other purpose. Prior to making the Lump Sum Payment, GPA shall provide to the Project Company such evidence that the Project Company may reasonably request to confirm that GPA is in compliance with the provisions of this Article 13.8(b).[17]

ARTICLE 14
INSURANCE REQUIREMENTS

14.1 Terms and Conditions

(a) All insurance policies are subject to the jurisdiction and Laws of the United States and Guam.

(b) All insurance policies should be effected through insurers registered in the United States or Guam to the extent required by the Laws of Guam.

(c) Re-insurance of all policies should be in accordance with the effective instructions issued by the insurance commission or any substitute authority and accordingly, insurers should prove that they have implemented the aforesaid instructions.

(d) Insurance will be subject to an insurance and reinsurance assignment agreement and insured shall have the right to claim from either insurers or reinsurers or both of them.

[17] Note to GPA: Subject to Lender review. Lenders may require (a) a security interest in the trustee account, and (b) that an account control agreement be put in place over the trustee account. Commercially agreed that this will be covered, if necessary, in the Direct Agreement.

(e) Project Company shall not be obliged to obtain any insurance policies covering sabotage or war risk.

14.2 Maintenance of Insurance Policies

(a) Project Company shall obtain and maintain in force from and after Financial Close and throughout the Term the policies of insurance and the minimum coverage in the amounts set forth in this Article 14.2 (or if not set forth, on terms and conditions, including sub-limits, deductibles and exclusions that are obtained by independent power generators of comparable size, technology and location) and during the periods, provided, however, that such minimum amounts may be changed from time to time with the written consent of GPA, which consent may not be unreasonably withheld or delayed. In addition to the foregoing, the Project Company may obtain any additional coverage required by the Lenders or the Laws of Guam, or deemed necessary by Project Company. Project Company shall not be in breach of its obligations hereunder if and to the extent that any particular insurance policy, or amount of coverage or any particular term of policy is not or ceases to be available on commercially reasonable terms for reasons other than any negligence or default by, or the deterioration of the financial condition of Project Company from the date of execution of this Agreement.

(b) In the event that any particular insurance policy or amount of coverage required to be maintained hereunder ceases to be available on commercially reasonable terms for reasons other than any negligence or default by, or the deterioration of the financial condition of Project Company from the date of execution of this Agreement, Project Company shall notify GPA of such occurrence promptly upon becoming aware of it and GPA shall have the option to procure such particular policy or amount of coverage and to require Project Company to reimburse it for the cost thereof up to an amount not exceeding the premium to be paid by Project Company immediately prior to such insurance becoming unavailable on commercially reasonable terms (provided that the terms of such policy and the insurers and reinsurers providing it are otherwise substantially the same as those of the policy that it replaces).

(c) All policies shall be primary and non-contributory, and shall remain in force for the Term.

(d) GPA shall be named as an additional insured.

(e) For all policies, waiver of subrogation shall be endorsed in favor of GPA.

(f) All minimum coverage described herein or the acceptance of GPA of any certificates or binders of insurance, does not waive, limit, or relieve the Project Company of its duties and responsibilities to comply with the contract insurance requirements or to place in force prudent coverage in adequate amounts to reasonably insure the Project Facilities.

14.3 Insurance Requirements for the Construction Period

(a) Cargo transportation insurance (imports and re-exported items):

This insurance shall cover all materials, equipment, machineries, spares and other items for incorporation into the Project Facilities against all risks of physical loss or damage while in transit by sea and/or air and/or by land conveyance and/or sending by post from the country of origin anywhere in the world to the site, or vice versa, from the time the insured items leave the warehouse or the

factory and/or place of storage for shipment to the Site (final destination named in the policy), plus war, strikes, riot and civil commotions in accordance with the provisions of institute cargo clause "A", war, strikes, and civil commotions or land transit "All Risks clause".

Coverage shall be in an amount equal to the cost, freight and all other expenses and fees.

In the alternative, Project Company may satisfy its obligations hereunder by requiring the vendor of such items to insure them in the manner specified herein, provided the vendor names Project Company and the other parties and first provides Project Company with evidence of such insurance, a copy of which shall be provided to GPA upon request.

Name of insureds include Project Company, GPA and all other concerned parties.

(b) Delay in start-up following cargo transport insurance:

This insurance shall cover debt service and fixed costs incurred following delays in reaching the Required Commercial Operation Date as a direct result of physical loss or damage to the materials, equipment, machineries and other items in transit by sea and/or air and/or by motor truck to the Site to the extent covered under the cargo transport insurance.

This insurance shall indicate indemnity period not less than one calendar year as from the date of the occurrence of the risk covered under the transport policy.

14.4 Insurances Required During Construction Period Plus Erection, Trial Testing and Commissioning Period Plus Debt Service and Fixed Operation and Maintenance Costs Loss Due to Delay

(a) Contractors all risks policy (C.A.R. Policy):

This insurance shall cover all permanent and temporary works at the Site during the Construction Period, including machinery and equipment for incorporation in the Project Facilities, against all risks of physical loss or damage (other than nuclear risk, penalties, consequential losses, cash, vehicles, vessels and aircraft) and shall include cover for loss or damage caused by faulty design, defective workmanship and defective material. Coverage shall be not less than the probable maximum loss value of the items covered.

Coverage shall also include equipment and machinery used by the concerned parties (excluding construction plant and equipment to be separately insured by the Construction Contractor) plus removal of debris, and third party liability plus cross liability during the Construction Period plus one (1) calendar year maintenance period.

(b) Delay in start-up following C.A.R. incidents:

This insurance shall cover debt service and fixed operation and maintenance costs incurred following delays in reaching the Required Commercial Operation Date as a direct result of physical loss or damage to the works to the extent that such loss or damage is covered under the C.A.R. policy.

(c) Professional indemnity policy:

This policy, which the Project Company shall have the option to obtain and maintain (or require the Construction Contractor to obtain and maintain, if Project Company considers it necessary, taking into account the financial standing of the Construction Contractor), covers any loss or damage due to negligence, errors, mistakes, faults and/or defaults or any other risks cover under P.I. policy which occurred during the Construction Period or erection.

This policy shall include a sum insured equal to the said losses and/or damage.

14.5 Insurances Requirements after Construction Stage

(a) Properties insurance:

Subject to all risks policy to cover buildings, structures, fittings, equipment, machineries, appliances, and/or other items. This insurance shall cover the said properties against:

(i) fire and other allied perils plus debt service and fixed operation and maintenance costs due to fire and/or other allied perils;

(ii) physical loss or damage due to sudden and unforeseen causes; and

(iii) machinery breakdown perils subject to Munich-Re specimen or similar policy wording and also to cover debt service and fixed operation and maintenance costs due to machinery breakdown.

Coverage shall be not less than the probable maximum loss value of the items covered. Indemnity period for debt service and fixed operation and maintenance costs due to fire or due to machinery breakdown is not less than one (1) calendar year as from the date of occurrence of the original risk.

The proceeds of claims against such insurance (except third party liability and workmen's compensation insurance) shall be used by Project Company to reinstate the Project Facility subject to the terms of any loan agreements provided in connection with the Project.

(b) Workmen's compensation policy for all workers and employees in accordance with the provisions of Guam labor law, and Employer's liability coverage for all temporary workers and other employees.

(c) Motor insurance policy (comprehensive cover) to include third party liability plus the cars and all vehicles and spares and appliances.

(d) Public liability insurance policy to cover any legal liability (bodily injuries and damages to property). Such policy should be sufficient to cover, at a minimum, [ten million Dollars (US$10,000,000)] for any one (1) occurrence.

(e) All policies of insurance (except Workmen's Compensation Insurance) required to be obtained by the Project Company shall include GPA and its employees as additional insured as their interests may appear.

(f) Each of GPA and Project Company shall cause its insurers to waive all rights of subrogation against the other party and the other party's employees (and the O&M Contractor and their subcontractors working directly in connection with the Project) in respect of a claim arising under its insurance policies, unless such claim arises from the wilful misconduct or gross negligence of the other party or the other party's employees or contractors.

(g) Certificates of insurance, binders (if applicable), or a letter from a licensed broker or independent insurance consultant certifying compliance or documenting the status of attempts to comply with the requirements shall be submitted prior to COD and any policy termination or expiration dates which arise during the Term and any extensions. Completed copies of policies, including all declarations, terms, conditions, endorsements and exclusions, shall be made available for inspection by GPA and remain available for inspection by GPA or its insurance consultant as certification of coverage no less than ninety (90) days after the Completion Date and any policy expiration dates which arise during the Term and any extensions.

ARTICLE 15
LIABILITY AND INDEMNIFICATION

15.1 Limitation of Liability

Except as expressly provided in this Article 15, without prejudice to any rights to damages that either Party may have as expressly provided for in Articles 4, 8 and 16, neither Party shall be liable to the other Party in contract, tort, warranty, strict liability or any other legal theory for any indirect, consequential, incidental, punitive or exemplary damages or for loss of revenue or loss of profits. In respect of a breach of the provisions of this Agreement, neither Party shall have any liability to the other Party save as expressly stated in this Agreement; provided, however, that this provision is not intended to constitute a waiver of any rights of one Party against the other with regard to matters unrelated to this Agreement or to any activity not contemplated by this Agreement.

15.2 Indemnification

(a) GPA

Subject to Article 15.5, GPA shall indemnify Project Company and Project Company's officers, directors, shareholders and employees against, and hold Project Company and Project Company's officers, directors, shareholders and employees harmless from, at all times after the date hereof, any and all Losses, and any and all actions, claims and demands in respect of such Losses, incurred, suffered, sustained, or required to be paid, directly or indirectly, by, or sought to be imposed upon, Project Company or Project Company's officers, directors, shareholders or employees for personal injury or death to persons or damage to property arising out of the negligent or intentional acts or omissions of GPA in connection with this Agreement.

(b) The Project Company

Subject to Article 15.5, Project Company shall indemnify GPA and GPA's officers, directors, shareholders and employees against, and hold GPA and GPA's officers, directors, shareholders and employees harmless from, at all times after the date hereof, any and all Losses, and any and all actions, claims and demands in respect of such Losses, incurred, suffered, sustained, or required to be paid, directly or indirectly, by, or sought to be imposed upon, GPA or GPA's officers, directors, shareholders or employees for personal injury or death to persons or damage to property arising out of the negligent or wilful default of Project Company in connection with this Agreement.

(c) Joint Negligence

Subject to Article 15.5, in the event that any Loss results from the joint or concurrent negligent or intentional acts or omissions of the Parties, each Party shall be liable under this indemnification in proportion to its relative degree of fault.

15.3 Indemnification for Fines and Penalties

Any fines or other penalties incurred by Project Company for non-compliance with the applicable Laws of Guam or the Government Authorizations shall not be reimbursed by GPA but shall be the sole responsibility of Project Company, except to the extent that such non-compliance is caused by the negligence or intentional acts or omissions of GPA.

15.4 Notice of Proceedings

Each Party shall promptly notify the other Party of any Loss, claim, action, demand or proceeding in respect of which it is or may be entitled to indemnification under Article 15.2. Such Notice shall be given as soon as reasonably practicable after the relevant Party becomes aware of the Loss, claim, action, demand or proceeding. Failure to give such Notice in a timely fashion shall not affect the indemnified Party's rights to indemnification except to the extent that the indemnifying Party is materially prejudiced thereby.

15.5 Limitation on Indemnification

(a) Each Party shall be solely liable, and shall not be entitled to assert any claim for indemnification under this Agreement for any Loss that would otherwise be the subject of indemnification under this Agreement until all Losses of such Party arising during the current Contract Year exceed the equivalent of two hundred thousand Dollars (US$200,000) in the aggregate in which case only the amount of Loss greater than two hundred thousand Dollars (US$200,000) shall be subject to indemnification. For purposes of this Article 15.5, a Loss (or claim for indemnification) shall be deemed to arise in the Contract Year during which the event giving rise to the Loss (or claim for indemnification) occurred or, in the case where the event is continuing in more than one Contract Year, in the Contract Year during which the event ends, provided that a Party shall not be obliged to refrain from making a claim under this Article 15.5 (where it is otherwise entitled to do so) at the end of a given year ("**Year End**") by reason of the fact that the event in question ("**Relevant Event**") is still continuing, and provided further that in the event that such Party does make such a claim at the Year End it shall continue to be able to claim in relation to all remaining Losses arising from the Relevant Event regardless of when they occur.

(b) Neither Party shall be entitled to the indemnity under Article 15.2 if and to the extent that a Party has received payment in respect of a Loss or proceeding under the indemnities contained in the Land Lease Agreement or any other document comprising the Security Package in respect of the relevant act or omission.

15.6 Defence of Claims

(a) The indemnifying Party shall be entitled, at its option, to assume and control the defence of such claim, action, suit or proceeding at its expense with counsel of its selection and the indemnified Party shall provide it with a power of attorney if required for this purpose, provided it gives prompt Notice of its intention to do so to the indemnified Party and reimburses the indemnified Party

for the reasonable costs and expenses incurred by the indemnified Party prior to the assumption by the indemnifying Party of such defence.

(b) Unless and until the indemnifying Party acknowledges in writing its obligation to indemnify the indemnified Party and assumes control of the defence of a claim, suit, action or proceeding in accordance with Article 15.6(a), the indemnified Party shall have the right, but not the obligation, to contest, defend and litigate, with counsel of its own selection, any claim, action, suit or proceeding by any third party alleged or asserted against the indemnified Party in respect of, resulting from, related to or arising out of any matter for which it is entitled to be indemnified hereunder, and the reasonable costs thereof shall be subject to the indemnification obligations of the indemnifying Party hereunder.

(c) Upon assumption by the indemnifying Party of the control of the defence of a claim, suit, action or proceeding, the indemnifying Party shall reimburse the indemnified Party for the reasonable costs and expenses of the indemnified Party in the defence of the claim, suit, action or proceeding prior to the indemnifying Party's acknowledgement of the indemnification and assumption of the defence.

(d) Following the acknowledgement of the indemnification and the assumption of the defence by the indemnifying Party, the indemnified party shall have the right to employ its own counsel and such counsel may participate in such claim, suit, action or proceeding, but the fees and expenses of such counsel shall be at the expense of such indemnified Party, when and as incurred, unless (i) the employment of counsel by such indemnified Party has been authorized in writing by the indemnifying Party, (ii) the indemnified Party shall have reasonably concluded that there may be a conflict of interest between the indemnifying Party and the indemnified Party in the conduct of the defence of such action, (iii) the indemnifying Party shall not in fact have employed independent counsel reasonably satisfactory to the indemnified party to assume the defence of such action and shall have been so notified by the indemnified Party, or (iv) the indemnified Party shall have reasonably concluded and specifically notified the indemnifying Party either that there may be specific defences available to it that are different from or additional to those available to the indemnifying Party or that such claim, action, suit or proceeding involves or could have a material adverse effect upon it beyond the scope of this Agreement. If clauses (ii), (iii) or (iv) of the preceding sentence shall be applicable, then counsel for the indemnified Party shall have the right to direct the defence of such claim, action, suit or proceeding on behalf of the indemnified Party and the reasonable fees and disbursements of such counsel shall constitute legal or other expenses hereunder, subject to the indemnification obligations of the indemnifying Party hereunder.

ARTICLE 16
FORCE MAJEURE

16.1 Definition

For the purposes of this Agreement, a "**Force Majeure**" means a cause or event (i) that is beyond the reasonable control of the affected Party and was not due to the fault or negligence of the affected Party and that prevents such Party's performance of its obligations under or pursuant to this Agreement, and (ii) which the affected Party is unable to prevent, overcome or remedy by the exercise of diligence and reasonable care, or avoid by the exercise of reasonable foresight and mitigation, it being understood and agreed that reasonable care includes the expenditure of reasonable sums of money ("**Mitigating Costs**") to protect the Project Facilities from a casualty

event, which sums are reasonable in light of the magnitude of the sum, the likelihood of such event, the probable effect of such event if it should occur, and the likely efficacy of the protective measures.

"**Force Majeure**" shall include the following events and circumstances, but only to the extent that each satisfies the above requirements:

(a) floods, hurricanes, tornadoes, typhoons, cyclones, earthquakes, volcanic eruptions and other natural calamities;

(b) fires or explosions that could not have been prevented by acting in accordance with industry standards or Prudent Utility Practices, as applicable;

(c) war (declared or undeclared), riots, insurrection, rebellion, civil disturbance, acts of the public enemy, acts of terrorism and sabotage, blockades, embargoes or sanctions;

(d) strikes which are widespread within the Territory of Guam, regional and industry-wide labor disputes unless affecting only or caused by Project Company or its Contractors (or their subcontractors of any tier) or their employees;

(e) any Change in Law;

(f) discovery of land mine(s);

(g) military ordnances and archaeological discoveries;

(h) the unavailability of Fuel supply or Fuel delivery/transportation;

(i) the unavailability of Water supply to the Project Facilities from GWA; and

(j) any Pre-Existing Condition that adversely affects the Project.

16.2 Exclusions

Force Majeure shall expressly not include the following conditions, except and to the extent that the conditions listed in subsections (b) through (l) (inclusive) result from a Force Majeure:

(a) the absence of sufficient financial means to perform obligations or the failure to make payments in accordance with this Agreement;

(b) weather conditions that could reasonably be expected to occur by an experienced contractor or electric generator in Guam other than extreme or unusually severe weather conditions that constitute a Force Majeure event in accordance with the clause above;

(c) shortages, unavailability, late delivery, or changes with respect to materials, spare parts, supplies, consumables or components of equipment for the Project;

(d) price fluctuations with respect to materials, spare parts, supplies, consumables or components of equipment for the Project;

(e) late delivery of materials, supplies or components of equipment;

(f) economic hardship;

(g) shortages of manpower;

(h) the delay, default or failure to perform by a contractor or subcontractor;

(i) machinery or equipment breakdown;

(j) customs procedures;

(k) flaws in the final technical specifications prepared by Contractor which require Contractor to re-design or re-engineer any portion of the Project or otherwise change or modify the work; and

(l) normal wear and tear or random flaws in materials and equipment or breakdowns in equipment.

16.3 Payment Obligations

No event, whether or not it constitutes "Force Majeure" will excuse GPA from the obligation to make any payment when due and payable under this Agreement, provided that if the occurrence or effects of a Force Majeure affects the operation of all or a portion of the Project Facilities, GPA shall continue, during the continuance of such Force Majeure or its effects, to pay the Capacity Charge for each MW of Dependable Capacity, after deducting from the Capacity Charge an amount determined by multiplying the Capacity Charge by a fraction, the numerator of which is the capacity that is unavailable due to the Force Majeure, and the denominator of which is the Dependable Capacity. This Article 16.3 is without prejudice to the provisions of Article 16.4.

16.4 Deemed Capacity

In the event that the Project Facilities and associated energy are unavailable, in whole or in part, due to:

(a) (i) GPA failing to deliver Fuel that meets the Fuel Specifications at the times and in the quantities required to satisfy the Fuel Supply Requirement (after the Project Company has utilized available Fuel in the ULSD Storage Facilities), (ii) the delivery of Non-Conforming Fuel, (iii) subsequent to the transfer of the Electrical Interconnection Facilities to GPA, the unavailability of the Electrical Interconnection Facilities or electric transmission or distribution service sufficient to export the entire output of the Project Facilities, or (iv) the unavailability of Water supply to the Project Facilities from GWA sufficient to effectively operate the Project Facilities;

(b) a condition caused by GPA or the Grid System; or

(c) a Change in Law,

then the Project Facilities, to the extent the Project Facilities are unavailable due to the foregoing reasons, shall be deemed available and providing the Dependable Capacity for the purposes of calculating liquidated damages under Article 8 and for the purposes of payments of Capacity Charges to be made by GPA to Project Company under Article 13 whether such foregoing reasons are due to the effects of Force Majeure or not.

16.5 Notification Obligations

(a) The Party affected by a Force Majeure shall give Notice to the other Party of any event constituting a Force Majeure as soon as reasonably practicable. Any Notice shall include full particulars of the event constituting a Force Majeure, of its effects on the Party claiming relief and the remedial measures proposed, including estimated cost and time to restore the Project, if appropriate. The Party affected by a Force Majeure shall coordinate with the other Party and give the other Party regular reports on the progress of those remedial measures and such other information as the other Party may reasonably request.

(b) The Party affected by a Force Majeure shall give Notice to the other Party of (i) the cessation of the relevant event constituting a Force Majeure, and (ii) the cessation of the effects of such event constituting a Force Majeure on the enjoyment by such Party of its rights or the performance by it of its obligations under this Agreement, as soon as reasonably practicable after becoming aware of each of (i) and (ii) above.

16.6 Duty to Mitigate

The affected Party shall be responsible to use all reasonable efforts to mitigate the effects of a Force Majeure.

16.7 Term Extension

Except for the periods in which (i) the Project Company receives deemed capacity payments under Article 16.4 or (ii) the Facility is deemed Commissioned under Article 7.5, if, during any other period, the Dependable Capacity is not available due to the occurrence or effects of a Force Majeure and this Agreement is not terminated earlier than the original Term, the Term of this Agreement and the Land Lease Agreement shall be extended by a number of Days calculated as follows:

$$Ex = Y \times (2 - N/25)$$

Where:

Ex is the number of Days by which the Term shall be extended;

Y is the number of Days during which the Dependable Capacity is not available due to the occurrence or effects of a Force Majeure; and

N is the Contract Year during which the relevant Force Majeure occurs.

During the period by which the Term shall be so extended, GPA shall, in addition to the Energy Charge and Supplemental Charge, pay the Capacity Charge at the rate prevailing in the relevant Contract Year(s) in which the Force Majeure giving rise to such Term extension occurred.

16.8 Delay Caused by Force Majeure, Excusable Events and GPA Delay Event

Except as otherwise set forth below, neither Party shall be responsible or liable for or deemed in breach hereof because of any failure or delay in complying with its obligations (other than an obligation to make a payment) under or pursuant to this Agreement due to one or more events of Force Majeure or (in the case of the Project Company) one or more Excusable Events or GPA Delay Events, or their effects or by any combination thereof, and the periods allowed or dates required (including the Required Commercial Operation Dates) for the performance by Parties of such obligation(s) shall be extended on a day-for-day basis to account for such event(s), effects or combination thereof; provided that no relief shall be granted to the Party

claiming Force Majeure, Excusable Event or GPA Delay Event pursuant to this Article 16 to the extent that such failure or delay would have nevertheless been experienced by that Party had such Force Majeure, Excusable Event or GPA Delay Event not occurred. This Article 16.8 is without prejudice to the provisions of Article 16.4.

16.9 Adjustments for Change in Law

(a) In the event of a Change in Law which is of the type described in the Change in Law definition and has an impact on the Project that is equal or greater than five hundred thousand Dollars ($500,000) for a Contract Year, GPA shall pay to Project Company (without double recovery) a Supplemental Charge under this Agreement in such amount as is necessary to compensate Project Company for, and make Project Company whole with respect to any such additional costs and/or adverse effect on the expected financial benefit suffered as a result of such Change in Law.

(b) In the event of a Change in Law that has a positive impact on the Project Company that is equal to or greater than five hundred thousand Dollars ($500,000) for a Contract Year, Project Company shall adjust the Capacity Charge under this Agreement in such amount as is necessary to return the benefit of such increase to GPA.

ARTICLE 17
TRANSFER OF OWNERSHIP

17.1 Project Facilities Transfer

(a) On the Transfer Date, Project Company shall transfer to GPA, free from any lien or encumbrance and without the payment of compensation, all right, title and interest in and to the Facility including all fixtures, fittings, plant and equipment (including all test equipment, special tools, as-built drawings, software, documents, reports, analyses, all relevant files, plant procedures and forms as reasonably required and necessary for GPA to effectively operate the Project Facilities after the transfer) and all improvements comprising the Project Facilities (the "**Project Facilities Transfer**"), provided that there is no default in payment obligations by GPA that has not been cured.

(b) Six (6) months prior to the Transfer Date, GPA and Project Company shall meet and agree on the inventories involved and the mechanics of the Project Facilities Transfer but Project Company shall not be liable for any discrepancies between such inventories and the actual fixtures, fittings, plant and equipment transferred, provided that following agreement on inventories Project Company shall exercise the same care regarding the fixtures, fittings, plant and equipment and all improvements therein as it did prior to agreeing to the same and provided further that GPA shall be entitled to provide a security unit within the Site.

(c) GPA shall be responsible for all costs and expenses (including legal fees and taxes or duties) incurred in connection with the Project Facilities Transfer and shall at its own cost obtain or effect all Government Authorizations and other approvals, licenses, registrations and filings and take such other action as may be necessary for the Project Facilities Transfer as contemplated in this Article 17, and reimburse Project Company on demand for all such costs and expenses incurred by Project Company in respect thereof.

17.2 Testing Prior to End of Term and Project Facilities Transfer

(a) Unless this ECA is terminated early, during the last year of the Term, the Project Company shall perform the tests described in Schedule 3[18] ("**End of Term Tests**") and the final pre-Project Facilities Transfer overhaul described in Schedule 2 (the "**Final Major Overhaul**"). In the event that the End of Term Test results demonstrate that the Project Facilities requires repair and/or replacement of equipment or parts, the Project Company shall carry out such corrective action as is required by Schedule 2.

(b) If the Project Facilities do not satisfy the requirements of Schedule 1, including the performance requirements set forth in Schedule 1, the Project Company shall immediately take such actions as will cause the Project Facilities to comply with the requirements of Schedule 1. If the Project Company fails to cause the Project Facilities to comply with the requirements of Schedule 1 within ninety (90) Days prior to the expiration of the Term, GPA (or its nominee) may take such measures as may be required for the Project Facilities to comply with the requirements of Schedule 1 at the sole expense of the Project Company. In the event that Project Company does not make timely payments for such expenses, GPA shall have the right to draw such amounts from the Transfer Security and/or set off such amounts under Article 13.1(d)(iv).

17.3 Transfer Overhaul

Three (3) years prior to the expiration of the Term, the Project Company shall deliver to GPA a plan that is consistent with Prudent Utility Practices and reasonably acceptable to GPA setting out the anticipated costs and activities associated with the Final Major Overhaul and the Project Facilities Transfer. The Final Major Overhaul shall occur no earlier than eighteen (18) months and no later than six (6) months from the expiration of the Term. In the event that GPA, acting reasonably, does not agree with the costs and activities anticipated by the Project Company in such transfer plan and the Parties cannot agree on the costs and activities, the Dispute shall be resolved in accordance with Article 18, provided, however, that the Project Company's obligations under the transfer plan shall always be limited to the scope set out in Schedule 1. The plan shall also describe the reserves to be maintained by the Project Company to cover these anticipated costs and activities. The Project Company shall maintain adequate reserves to complete the Project Facilities Transfer obligations required by Schedule 1.

17.4 Transfer Security

On or prior to the date that is four (4) years prior to the scheduled expiry date of the Term, the Project Company shall deliver to GPA a security deposit in the amount of fifteen million Dollars (US$15,000,000) (the "**Transfer Security**"). The security deposit shall be issued in one of the forms set out in Schedule 9 as security for performance of the Project Company's obligations under this Article 17. The deposit shall remain valid for one (1) year subsequent to the date of Project Facilities Transfer. In the event that Project Company has not delivered the security deposit in favor of GPA by the end of the twenty-first (21st) Contract Year, GPA shall have the right to withhold payments to Project Company (including payment amounts owed pursuant to Article 13) up to the Transfer Security amount.

[18] Note to parties: Need to insert in Schedule 3.

ARTICLE 18
CHOICE OF LAW AND RESOLUTION OF DISPUTES

18.1 Governing Law

This Agreement and the rights and obligations hereunder shall be interpreted, construed and governed by the laws of Guam and all applicable laws of the United States of America.

18.2 Initiation of Dispute Resolution

(a) In the event that a Dispute arises, the Parties shall attempt in good faith to settle such Dispute by mutual discussions within thirty (30) Days after the date that the disputing Party gives Notice of the Dispute to the other Party which may include referring the Dispute to the Joint Coordinating Committee for a specified time period, subject to mutual agreement of the Parties in writing.

(b) In the event that the Dispute is not resolved in accordance with Article 18.2(a), either Party may refer the Dispute to the chief executive officer or chief operating officer of Project Company and GPA for further consideration.

(c) In the event that the Parties do not reach agreement on the Dispute within forty five (45) Days after the date that either Party gives notice of the Dispute pursuant to Article 18.2(a), or such longer period as they may agree in writing, then either Party may commence resolution of the Dispute in accordance with 18.4 or, subject to mutual agreement of the Parties in writing, submit the Dispute to mediation pursuant to Article 18.3.

18.3 Mediation

(a) In the event that the Parties mutually agree pursuant to Article 18.2(c) to submit a Dispute to mediation, then such dispute shall be submitted to mediation in accordance with the rules of the American Arbitration Association, subject to the conditions and limitations of this paragraph. This agreement to mediate is authorized under 5 GCA §5427 (b) and 2 GAR §9103 (a)(1). The Parties shall each pay one-half of the mediation expenses.

(b) In the event the Dispute is not resolved through mediation within ninety (90) days of the date on which either Party gave Notice of the Dispute pursuant to Article 18.2(a), either Party may commence resolution of the Dispute in accordance with 18.4.

(c) Any mediation shall be conducted in English.

(d) The place of mediation shall be Guam.

18.4 Arbitration

(a) Any Dispute arising out of or in connection with this Agreement and not resolved following the procedures described in Article 18.2 or Article 18.3 shall be finally settled by arbitration under the Rules of Arbitration of the American Arbitration Association ("**AAA Rules**").

(b) Any arbitration shall be conducted in English, and unless otherwise agreed by the Parties, the number of arbitrators shall be three (3). The arbitrators shall be appointed in accordance with the AAA Rules.

(c) The place of arbitration shall be Los Angeles, CA, USA.

(d) The arbitration tribunal may consolidate an arbitration arising out of or relating to this Agreement with any arbitration arising out of or relating to the Land Lease Agreement if the subject matter of the Disputes arises out of or relates to essentially the same facts or transactions. Such consolidated arbitration shall be determined by the arbitration tribunal appointed for the arbitration proceeding that was commenced first in time.

18.5 Performance of Obligations

Unless otherwise provided in this Agreement, during the conduct of Dispute resolution the Parties shall continue to perform their respective obligations under this Agreement.

18.6 Consent to Jurisdiction

Each Party hereby consents to the jurisdiction of the District Court of Guam for any action filed by the other Party to enforce a judgment entered for the purpose of recognizing any award or decision of any arbitrator(s) who were duly appointed pursuant to this Agreement to resolve any Dispute between the Parties.

18.7 Waiver of Jury Trial

Each Party waives any right to trial by jury of any claim or action under or in connection with this Agreement, regardless of the legal theory. This waiver of right to trial by jury is given knowingly and voluntarily by each Party hereto.

ARTICLE 19
NO LIABILITY FOR REVIEW

No review, non-objection or approval by GPA of any agreement, document, instrument, drawing, specifications or design proposed by Project Company shall relieve Project Company from any liability that it would otherwise have had for its negligence or wilful misconduct (i) in the preparation of such agreement, document, instrument, drawing, specification or design or (ii) the failure to comply with the applicable Laws of Guam with respect thereto.

ARTICLE 20
SHARE TRANSFER AND DISPOSAL OF ASSETS

20.1 Shares Certificate Legend Requirement

With respect to the transfer of the registered ownership of any Shares, Project Company (i) shall include appropriate legends on all share certificates evidencing Shares of Project Company to put prospective purchasers of such Shares on notice of the restrictions in the following provisions and, (ii) to the extent permitted by the Laws, shall not register or give effect to any purported transfer of Shares that is not in compliance with such restrictions or do not bear such legend.

20.2 Transfer Restriction

Prior to the second anniversary of the Commercial Operation Date, none of the Initial Shareholders shall (i) transfer any Shares owned by them or (ii) merge into or consolidate with any other individual, corporation, company, voluntary association, partnership, joint venture, trust, or (iii) dispose of assets of Project Company at any time, except for:

(a) a transfer required by any Laws or by the operation of the Laws or by order of a court, tribunal, or Governmental Authority with appropriate jurisdiction;

(b) a transfer resulting from the enforcement of a pledge or security interest in or over any Shares in accordance with the Security Package;

(c) a transfer of Shares in accordance with the Lenders' Direct Agreement; or

(d) a transfer to which GPA has given its prior written approval.

ARTICLE 21
NOTICES

Except as otherwise expressly provided in this Agreement, all notices, communications, or other documents (together "**Notices**") to be given or made by one Party to the other Party pursuant to this Agreement shall be in English and in writing, shall be addressed for the attention of the person indicated below, and shall be delivered by hand or sent by reputable international express courier by facsimile, or registered mail. Any Notice given by facsimile shall be confirmed by sending a copy of the same by personal delivery or by registered mail, but the failure to so confirm shall not void or invalidate the original Notice if it is in fact received by the Party to which it is addressed. The addresses for service of the Parties and their respective facsimile numbers are:

Guam Power Authority

Address: [Gloria B. Nelson Public Service Building 688 Route 15 Fadian, Mangilao, Guam]

Facsimile: [•]

Attention: [•]

[Project Company]

Address: [•]

Facsimile: [•]

Attention: [•]

or such other addresses and facsimile numbers as either Party may have notified to the other Party in accordance with this Article 21.

All Notices shall be deemed delivered (a) when presented personally, (b) when transmitted by facsimile to the receiving Party's facsimile number specified above, (c) one (1) Day after being delivered to a courier for express delivery, addressed to the receiving Party, at the address indicated above (or such other address as such Party may have specified by written Notice), or (d) five (5) Days after being sent by registered mail addressed to the receiving Party, at the address indicated above (or such other address as the receiving Party may have specified by written Notice). Any Notice given by facsimile shall be confirmed in writing delivered personally or sent by registered mail, but the failure to so confirm shall not void or invalidate the original Notice if it is in fact received by the Party to which it is addressed.

ARTICLE 22
MISCELLANEOUS PROVISIONS

22.1 Amendment

This Agreement cannot be amended except by prior written agreement between the Parties.

22.2 Headings

The headings contained in this Agreement are used solely for convenience and do not constitute a part of this Agreement nor shall such headings be used in any manner to aid in the construction of this Agreement.

22.3 Third Parties

This Agreement is intended solely for the benefit of the Parties hereto. Nothing in this Agreement shall be construed to create any duty or any liability to or any right of suit or action whatsoever, to any person not a Party to this Agreement.

22.4 No Implied Waiver

The failure or delay of either Party to enforce at any time any of the provisions of this Agreement, or to require at any time performance by the other Party of any provision hereof, shall neither be construed to be a waiver of such provisions nor affect the validity of this Agreement or any part hereof or the right of such Party thereafter to enforce each and every such provision.

22.5 Relationship of the Parties

This Agreement shall not be interpreted or construed to create an association, joint venture, partnership or agency between the Parties or to impose any partnership obligation or liability upon either Party. Neither Party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other Party. Nothing in this Agreement shall be construed as creating any relationship between the Parties other than that of independent sale and purchase of capacity and electricity generated at the Project Facilities. Except as otherwise set forth herein, the Parties do not intend to create any rights, or grant any remedies to, any third party beneficiary of this Agreement. Therefore, Project Company shall be solely responsible for the payment of salaries, wages and mandatory and fringe benefits of its employees, which will not have any labor relationship with GPA.

22.6 Rights of Inspection

Project Company shall promptly furnish to GPA such information as GPA may from time to time reasonably request. Subject to Article 6.5, Project Company shall permit representatives of GPA on reasonable notice and during reasonable hours to visit the Project Facilities, such visit to be at the cost of GPA.

22.7 Periodic Reports

(a) Each Party shall, as soon as available but in any event within one hundred and twenty (120) Days after the end of each fiscal year, furnish to the other Party: (a) two (2) copies of its complete financial statements for such fiscal year (which are in agreement with its books of accounts and are prepared in accordance with accounting principles which are generally accepted in

Guam and consistently applied), together with an audited report thereon; (b) a copy of any management letter or other communication sent by the auditors to the Party or to its management in relation to the Party's financial, accounting and other systems, management and accounts; and (c) a report by the auditors certifying that, based on its financial statements, the Party was in compliance with its financial obligations as of the end of the relevant fiscal year or, as the case may be, detailing any non-compliance. In addition, each Party shall authorize its auditors (whose fees and expenses shall be for the account of the Party) to communicate directly with the other Party at any time regarding the Party's accounts and operations and shall furnish to the other Party a copy of such Authorization.

(b) Each Party shall, as soon as available but in any event within sixty (60) Days after the end of each six (6) Month period of each fiscal year, furnish to the other Party: (i) two (2) copies of balance sheets of such Party, as of the close of that period, and statements of sources and uses of income and retained earnings and changes in the Party's capital accounts and financial position, for the period and for the portion of the fiscal year ending with that period, in each case setting forth in comparative form the figures for the corresponding period for the preceding fiscal year, all in reasonable detail and in accordance with the generally accepted accounting principles in Guam consistently applied and certified as complete and correct, subject to changes resulting from year-end adjustments, by the chief accounting officer of the Party; and (ii) a report on any factors materially and adversely affecting or that might materially and adversely affect the Project or the Party's business and operations or its financial condition.

22.8 Survival

Articles 1, 2, 5.3, 5.4, 15, 18 and 22 shall survive the cancellation, expiration or termination of this Agreement.

22.9 Language

The language of this Agreement shall be English. All documents, Notices, waivers and all other communication written or otherwise between the Parties in connection with this Agreement shall be in English.

22.10 Entirety

This Agreement and Schedules attached hereto and the LLA and any schedules or annexes thereto, taken together, are intended by the Parties as the final expression of their agreement and are intended also as a complete and exclusive statement of the terms of their agreement with respect to the subject matter of this Agreement and the LLA. All prior written or oral understandings, offers or other communications of every kind pertaining to the sale or purchase of capacity and energy hereunder to GPA by Project Company or to Project Company by GPA or pertaining to the connection of the Project Facilities to the Grid System are hereby abrogated and withdrawn.

22.11 Assignment

This Agreement may not be assigned by either Party other than by mutual agreement between the Parties in writing. Notwithstanding the foregoing, for the purpose of financing or refinancing the Project Facilities, GPA agrees that Project Company may assign to the Lenders its rights and interest or create security over its rights and interest under or pursuant to (i) this Agreement, (ii) the Project Facilities, (iii) the movable property and intellectual property of Project Company and (iv) the revenues or any of

the rights or assets of Project Company. The Parties acknowledge and agree that provisions, which shall be agreed with the Lenders, will be included in the Lenders' Direct Agreement which will provide, inter alia, for the Lenders' security interest and cure and step-in rights in and under this Agreement.

22.12 Successors and Assigns

This Agreement shall be binding upon, and inure to the benefit of, the Parties hereto and their respective legal successors and assigns permitted in accordance with Article 22.11.

22.13 Confidentiality

Each of the Parties shall hold in confidence the agreements relating to the Project and all documents and other information, whether technical or commercial, which is of a confidential nature supplied to it by or on behalf of the other Party relating to the design, construction, insurance, operation, maintenance, management and financing of the Project and shall not publish, disclose or use the same for its own purposes other than as may be required to perform its obligations under this Agreement or as may be required by law.

22.14 Counterparts

This Agreement may be executed in more than one counterpart, each of which shall be deemed to be an original and all of which when taken together shall be deemed to constitute one and the same instrument.

22.15 Severability

If one or more provisions contained in this Agreement are held or found to be invalid, illegal, or unenforceable in any respect, the provision(s) shall be given effect to the extent permitted by law and the invalidity, illegality, or unenforceability of any provisions shall not affect the validity of the remaining provisions of this Agreement.

IN WITNESS WHEREOF, each of the Parties has caused this Agreement to be executed as of the day and year first above written.

[Guam Power Authority]

By: _____

Name: _____

Title: _____

[Project Company]

By: _____

Name: _____

Title: _____

Schedule 1: Functional Technical Specifications

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PREAMBLE

Project Company shall perform or cause to be performed all work and services and provide all materials, equipment, machinery, tools, labor, utilities, chemicals, transportation, administration and incidentals (the "Work") as may be necessary or appropriate to carry out the functions and purposes indicated in this Agreement including the development, financing, construction, and operation of the Facility designed to meet the performance criteria and all other conditions set forth in this Agreement, whether or not such Work is specifically mentioned or indicated in the Functional Specifications or elsewhere in the Agreement.

The Functional Specifications set forth the minimum criteria for efficiency, reliability, operability, maintainability, quality of equipment, materials, and systems. Where the Functional Specifications are different from the applicable industry codes and standards or applicable standards and Laws in effect, as of September 14, 2018, the more stringent shall apply. Where the Functional Specifications describe portions of the Work in general terms, but not in complete detail, it is understood that, subject to Project Company meeting the requirements of the Agreement and the Functional Specifications; (i) Prudent Utility Practices are to prevail, (ii) only new materials and workmanship of the first quality are to be used, and (iii) such Work shall be fit for the intended purpose.

1 DESCRIPTION OF PROJECT

1.1 Project Description

Guam Power Authority (GPA) is seeking an Independent Power Producer (IPP), hereafter referred to as the Project Company, to develop a green-field power generating plant on the island of Guam. The Project Company will operate under an Energy Conversion Agreement (ECA) with GPA for a 25-year period, with an optional five (5) year extension. The plant site will be located near the existing Harmon Substation. The Project shall provide 180 MW (net at the Point of Interconnection) of base loaded generation to meet GPA electrical demand. Because of the variability of technologies allowed and unit sizes, GPA will consider evaluating proposals that are within 10 % over or under the preferred range. The size of the Facility's individual units shall be such that a trip of a single Unit will not result in a loss of 45MW. The use of Battery Energy Storage System is allowed to offset the loss for at least 15 minutes.

The project includes a 115 kV substation and transmission lines to the GPA system. The plant is intended to be utilized in various operating conditions that include, but are not limited to: 1) higher output levels serving evening peak load, and 2) lower output levels (down to 20 MW) during periods of lower load and higher variable renewable generation where the plant still needs to be able to supply adequate system support and short circuit MVA levels. Synchronous condenser capability is required to provide adequate inertia to maintain short circuit MVA levels during lower real power output operating conditions and to provide reactive power to the system as required. The facility shall be capable of providing the full Dependable Capacity at any given time regardless of the weather conditions. The facility shall be capable of withstanding and to continue operating during all naturally occurring events. The Project will be required to be dual fuel capable,

utilizing Ultra Low Sulfur Diesel (ULSD) and natural gas. The natural gas will be delivered to Guam as Liquefied Natural Gas (LNG), and will be regasified prior to pipeline delivery to the facility. The Project Company shall be fully responsible for the financing of the Project, and the design, supply, delivery, erection, commissioning, operation, and maintenance of the complete Facility for the agreed Term. Particulars of the plant performance requirements are given elsewhere in this specification. The Project Company shall coordinate plans and activities with GPA during the design, construction, commissioning, and operation of the Project. GPA is interested in bringing additional power generating capacity on line as early as possible. Where practical this includes partial commissioning of the new generating units. Project Company shall provide their plans for partial commissioning.

See Appendix J KEPCO Proposal Technical Details

1.2 Scope of Supply

The Project Company shall provide a complete Facility of 180 net MW Contracted Facility Capacity, GPA will consider evaluating proposals that are within plus/minus10 % of the preferred capacity) with all support facilities required for commercial operation. The scope of the Project shall include, but not be limited to the following:

1.2.1 Engineering

The Project Company shall be responsible for the complete engineering and design services for the procurement, construction, and commissioning of the new generation Facility. The Project Company shall provide survey, geotechnical investigation, engineering, design, drawings, specifications and datasheets, databases, construction specifications, commissioning, testing, and operation and maintenance (O&M) procedures, and equipment information that describes all components of the new generation facility and related infrastructure.

1.2.2 Procurement

The Project Company shall be responsible for all aspects of the procurement of equipment, materials, labor, and services for the new fuel supply and plant. Procurement service will include, but not be limited to, purchasing, subcontracting, expediting, inspections, shipping and field services. The Project Company shall comply with Guam Procurement Law to ensure that the Project reflects positively on GPA, the Project Company, contractors and suppliers.

1.2.3 Construction

The Project Company shall be responsible for complete construction of the Facility, including substation, transmission line and interconnections to the Grid System, fuel supply infrastructure if proposing fuel fired plant and water supply infrastructure. The Project Company shall develop a construction plan detailing construction procedure, site safety, site security, subcontractor administration, and start-up and commissioning procedures. The construction plan shall address any interfaces required as defined in this IFB document, including water, sewage, site access, site runoff, and emergency response. The Project Company shall submit the Construction Plan for review and comment no later than three (3) months prior to commencement of construction. The Project Company may use part of the property outside the plant footprint (estimated at 25 acres) during construction if the existing vegetation barrier around plant is not damaged.

1.2.4 Operation and Maintenance

The Project Company shall be responsible for operation and maintenance of the Facility during the Term of the Project.

1.2.5 Detailed Project Scope

A. Scope of Services

The Project Company Services for the project will comprise, but not necessarily be limited to the following:

- Design and procurement
- Construction testing and pre-commissioning
- Commissioning and functional testing
- Performance Tests and Reliability Tests
- Operation and maintenance of the Facility during the Term of the Project
- Other services as specified or necessary to complete the Project
- Temporary construction works and facilities
- Provision of documentation
- Operators' living quarters and facilities, if required

B. Scope of Supply

Facility Fossil fuel fired components will comprise but not necessarily be limited to the following:

- Multiple Combustion Turbine Generators which will be designed, supplied, constructed, and operated in such a manner that the maximum net power output of the Facility lost during an outage of a single Unit is less than 45 MW and would not cause system frequency upsets outside the acceptable range defined in GPA Grid and Reliability standards, and which will be capable of operating on ULSD and Natural Gas
- Heat Recovery Steam Generators
- Steam turbine generator
- Reserve capacity of 64.5 MW of high-speed diesel engines and additional gas turbine output to compensate the largest unit loss. These will be fully dispatchable as additional capacity for compensation of the largest single unit loss
- Battery Energy Storage System of 25 MW up to 15 MW for at least 30 minutes. The BESS shall provide backup power for losses in excess of 45 MW. The system will be initiated and fully online within 500ms. The BESS shall be available continuously and ready to be utilized at any time
- Capability to operate generators in Synchronous Condenser mode must be provided to facilitate Short Circuit MVA requirements and provide system reactive power.

- Raw water system
- Service water system
- Water and waste water treatment plants
- Closed loop water cooling system, as required
- ULSD Fuel on-site system including storage and conditioning plant, if required
- Fuel transfer facility at the plant site for loading trucks to transport fuel oil to other GPA plants.
- ULSD supply system including modifications to the GPA bulk storage facilities and constructing of ULSD underground pipeline to the Site
- On-site Natural Gas system including LNG metering and natural gas supply line to the Site's regulation and metering
- Auxiliary steam boiler with all auxiliary equipment, if required
- Generator step-up, station, and auxiliary power transformers; and associated protection and control equipment as required
- Generator circuit breakers and/or MV metalclad switchgear as required
- Station electrical distribution system
- DC equipment, batteries, and UPS systems
- Power, control and instrument cabling
- Earthing (grounding) and lightning protection
- Emergency generator plant (for auxiliaries, etc.), if required
- Black start diesel-generator
- Emergency lighting system
- Cathodic protection, as required
- Lighting and small power services
- Compressed air system
- Cranes and lifting gear
- Maintenance tools and equipment for workshops, stores, and laboratories
- Fire detection and protection system
- Firefighting systems
- Chemical storage tanks
- Chemical feed systems, if needed
- Treated water storage tanks firefighting water integrated, as required. There shall be 7 days of water storage for cooling tower makeup if cooling tower is required.
- Main metering systems for fuel, electrical energy export, and electrical energy import

- Backup metering systems for fuel, electrical energy export, and electrical energy import
- Control system for combustion turbine and steam turbine generator units
- Local control equipment for auxiliary plants
- Plant control system
- Security provisions compliant with NERC CIPS and US Navy
- Telecommunication systems within Facility, connection to public network, and connection to GPA private telecommunication networks
- Load dispatch control interface facilities
- Foundations for all plant and buildings
- Civil and structural and building works associated with the plant buildings including, but not limited to:
    - Main structures to house Combustion Turbine Generators, Steam Turbine Generators, Heat Recovery Steam Generators as required
    - Control room, electrical room, administration building
    - Fire protection pump house
    - Maintenance workshop and stores
    - Gatehouse
    - Potable water system and other building services
    - Other structures as required for proper operation of the Facility
- HVAC facilities
- Site lighting
- Construct a new road from the access road initiating from Route 1 through the front of the property to Route 3
- Provisions for optional Natural Gas pressure reduction, metering and treatment station, as required
- All necessary external works including roads, fencing, gates, sewers and drainage within the power plant
- Spare parts required for commissioning, operation, and maintenance
- Special tools and maintenance equipment
- Remote terminal unit (RTU), Substation Control System (SCS) connections, communication protocols, marshalling kiosks, automatic generation control (AGC), etc.
- Switchyard
- Electrical Interconnection Facilities between the Facility and the GPA Harmon substation

- Expansion/modification to the GPA Harmon substation
- Consumables throughout the specified operating period; excluding ULSD and natural gas.

The Project Company shall be deemed to have included in his Proposal any additional plant and equipment necessary to meet the Facility design, performance, operation, and environmental criteria, but which are not specifically identified above, and to form a complete power plant which is fit in all respects for its intended purpose and use.

1.2.6 Rights-of-Way

Obtainment of rights-of-way for the ULSD pipeline and the 115 KV transmission interconnection from the GPA procured property identified in Section 5.0 Site Data to the Harmon substation for the Project will be the provided by GPA. Project Company will provide other rights of way. Project Company will be responsible for rights of way from any locations other than the GPA property identified in Section 5.0 Site Data to the Harmon substation.

1.2.7 ULSD Supply Infrastructure

The design, construction, and commissioning of the ULSD supply infrastructure, including, bulk storage at the plant, fuel truck loading and unloading facilities, new fuel oil and natural gas pipeline to the plant and modifications to existing pumps at the GPA Bulk Fuel Storage Facility Pump Station is the responsibility of the Bidder and will be included in the scope for any Facility which has a fossil fuel fired component. Ownership of the bulk storage, the plant site fuel truck loading facilities and the pipeline will be transferred to GPA after Commercial Operation Date.

The truck unloading / loading station shall be designed with an loading/unloading capacity of 8500 US gallons/1hr for one (1) truck.

There is an existing Bulk Fuel Storage Facility (GPA Bulk Fuel Storage Facility Facility) near the Piti and Cabras plants and an existing 8-inch RFO pipeline from the GPA Bulk Fuel Storage Facility Pump Station to the Tanguisson plant site. Any new equipment required, including storage tanks, pumps, and booster pumps shall be the responsibility of the Project Company. The new pipeline will utilize the existing fuel oil pipeline right of way to the greatest extent possible.

Power Source for outside of Power Plant will be provided by GPA in the nearest existing MCC, UPS.

1.2.8 Natural Gas Supply Infrastructure

The fuel systems provided, the design, construction, and commissioning of the natural gas supply piping infrastructure beginning at an outlet flange after regasification at GPA Bulk Fuel Storage Facility, new natural gas pipeline to the plant will be included in the scope of this Project, and is the responsibility of the Project Company. Construction and ownership of the LNG receipt and storage at GPA Bulk Fuel Storage Facility is by Others.

The new pipeline will utilize the existing fuel oil pipeline right of way to the greatest extent possible.

1.2.9 Environmental Permitting

The Project Company shall be responsible for all environmental permitting required for the construction, ownership and operation of the Facility with associated infrastructure and terminal facilities, including the Air Permit. The Project shall meet all applicable local, state, territory and federal environmental regulations and permit conditions. The permits that will be required include the following:

A. Clean Water Act Sections 401, 402 and 404

B. Section 7 of the Endangered Species Act and Marine Mammal Protection Act (MMPA)

C. Section 106 of the National Historic Preservation Act

D. Federal Coastal Zone Management Act (CZMA)

E. Seashore Clearance Permit

F. GLUC Wetlands Permit, if applicable

G. GEPA Environmental Land Use

H. Air Pollution Source Construction Permit and Major Air Pollution Source Operating Permit

The project may be permitted as a minor source project ONLY if the SOx emissions are less than 100 tpy (for all types of units), and emissions are either:

(1) less than 100 tpy of each NOx, CO, particulates and lead if the source consists of a "fossil fuel-fired steam electric plants" or "fossil fuel boilers" of more than 250 MMBTU/hr heat input (i.e. a combined cycle gas turbine, boiler or other co-generation plant), or

(2) less than 250 tpy of each NOx, CO, particulates and lead for other types of combustion equipment (i.e., IC engine, simple cycle turbine).

If the potential emissions from the proposed project will exceed any of these major source thresholds, then a permit must be obtained from EPA for the major source pollutant and any pollutants with a significant emission increase (as defined in 40 CFR 52.21(b)(23)). The Project Company must provide the necessary emission control system that will meet the requirements for the Minor Source Permit.

I. For ULSD or natural gas, a FERC certificate would not be required.

1.2.10 Grid Study and Analysis

GPA will complete a grid study that will evaluate the impact of the new generating plant on the existing Grid System. The Project Company will reimburse GPA for the cost of the study. Information on the existing island Grid System necessary for completing this study will be supplied by GPA to the successful Project Company.

The Bidder shall provide full steady state and dynamics modeling information of the plant to be used in the grid study. The modeling information shall include all components up to the Point of Interconnection with the GPA system. This shall include, but not necessarily limited to, modeling of

generator(s), excitation system(s), governor(s), generation step-up transformer(s) (GSU), and any transmission lines. The tap settings on the GSUs shall reflect the expected settings. Any other components deemed relevant for any analysis that could be performed by GE's PSLF tool, should also be provided. Differences in characteristics of the plant based on the different fuel sources it can operate on shall be provided.

The size of the Facility's individual units shall be such that a trip of a single Unit will not result in a loss of 45 MW.

1.3 Terminal Points

1.3.1 Fuel

A. ULSD

If ULSD is selected by Project Company as a fuel source, the Project Company is responsible for the design and construction of ULSD supply infrastructure including any modifications at the GPA Bulk Fuel Storage Facility Bulk Fuel Storage Facility and the new pipeline that will be built to transport ULSD from the GPA Bulk Fuel Storage Facility to the plant site. [The interface point for design and construction will be at the outlet flange of the isolation valve installed in the existing ULSD pipeline supplying ULSD from the port to the bulk storage facilities at the plant site.] The Project Company shall provide fuel storage at the power generating plant site for a minimum of 30 days of plant operation at full load for the Dependable Capacity and at Site Reference Conditions. The Project Company will provide fuel transfer facility at the plant site for loading trucks to transport fuel oil to other GPA plants.

B. Natural Gas

The Project Company shall design the plant for future natural gas operation. If natural gas is selected by Project Company as a fuel source, the Project Company is responsible for the design and construction of natural gas supply infrastructure beginning at an outlet flange after regasification at GPA Bulk Fuel Storage Facility, and the new pipeline that will be built to transport natural gas from the GPA Bulk Fuel Storage Facility location to the plant site. The interface point for design and construction will be an outlet flange after regasification at the GPA Bulk Fuel Storage Facility location. The Project Company shall provide natural gas throughput and pressure suitable to support the peak Facility demands noted herein.

1.3.2 Substation / Interconnection

The Project Company is responsible for the design and construction of the Electrical Interconnection Facilities. See Sections 3.6 and 3.7 for more detailed information on the requirements of the interconnection. The terminal point for design and construction included in Project Company's scope will be at the interface between the existing GPA Harmon substation and Electrical Interconnection Facilities also known as the Point of Interconnection (POI). The Electrical Interconnection Facilities will be transferred to GPA after Commercial Operation Date.

1.3.3 Water Supply

Water supply to the Facility will be the responsibility of the Project Company. It is preferred that the raw water (Treated effluent from NDWWTP) for cycle makeup and potable water will be supplied from Guam Water Authority.

Guam Water Authority (GWA) will supply grey water to the plant from the nearby Northern District Wastewater Treatment Plant (NDWWTP) to be used for cycle cooling water system if required. Available quantity and analysis of the grey water is included in Appendix A. The Project Company shall be responsible for determining the water treatment requirements for the water sources. The grey water supply interface point will be at NDWWTP. The precise location of the terminal point will be determined by the Selected Project Company at the detailed design stage.

There will be no sea water makeup utilized.

1.3.4 Wastewater Discharge

Wastewater discharge will be the responsibility of the Project Company. The Project Company will need to determine wastewater pretreatment quality to meet the requirements of GWA. Sanitary sewer may potentially be discharged to the GWA treatment facility. The Project Company shall be responsible for the wastewater discharge permitting, and any contractual agreements with GWA.

2 DESIGN PHILOSOPHY AND PRINCIPLES

2.1 Design Requirements

2.1.1 Engineering

A. General

1. The plant design life shall be thirty (30) years with normal required maintenance. The plant shall be designed for construction and operational safety, as well as ease of maintenance and accessibility. Reliability, availability, and maintainability are prime objectives of this facility.

2. The equipment shall be designed for base load operation with potential frequent and rapid load changes. The Facility will be a primary power source for Guam; therefore, there shall be no single contingency (single mode failure) that could cause a sustained outage or partial outage for the Grid System.

3. Design for the Project shall contain Prudent Utility Practice margins with new components and systems such that the ability of the units to operate continuously shall not be compromised due to normal wear and deterioration of equipment.

4. All construction documents must be stamped by a licensed Professional Engineer registered by the Territory of Guam, in the appropriate discipline, in accordance with Territory of Guam Rules and Regulations.

5. The Facility shall be designed and constructed in accordance with all applicable Federal, Territory of Guam, and local codes and standards including the most

applicable sections of the codes, standards and regulations of the following organizations or their acceptable equivalent European, Japanese and South Korean standards. If European, Japanese, or South Korean standards are proposed the Project Company must demonstrate equivalency. This list of organizations is not complete, and does not relieve the Project Company from complying with any other requirements and regulations applicable to this Project. The effective dates of the Codes and Standards of these organizations shall be the most recent edition plus any revisions and supplements prior to September 14, 2018, unless otherwise specified.

In the event conflicts arise between the codes and standards of practice described herein and codes, laws, rules, decrees, regulations, standards, etc., of the locality where the equipment is to be installed, the codes and standards of practice described herein shall govern.

Further clarification shall apply:

- different individual standards can be used for a set of equipment. e.g. for a water pump, its material is according to ASTM while its general design is according to ANSI/HI.
- Asian or international standards shall not be intermingled with US standards unless the Subcontractor design applies multiple standards.
- The gas turbines, steam turbine, generators, HRSGs, cooling tower and relevant auxiliaries are designed, manufactured and tested in accordance with international and proven OEM standards.
-

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
AFBMA	Anti-Friction Bearing Manufacturers Association
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Movement and Control Association
ANSI	American National Standards Institute
API	American Petroleum Institute
ARI	Air-Conditioning and Refrigeration Institute
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers

ASME	American Society of Mechanical Engineers
ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
CFR	Code of Federal Regulations
CMAA	Crane Manufacturers Association of America
CRSI	Concrete Reinforcing Steel Institute
EIA	Electronic Industry Association
EJMA	Expansion Joint Manufacturing Association
EPA	Environmental Protection Agency
HEI	Heat Exchange Institute
ICC	International Code Council
IEEE	Institute of Electrical and Electronics Engineers
ISA	International Society for Automation
MBMA	Metal Building Manufacturers Association
MSS	Manufacturers Standardization Society of Valves and Fittings Industry
NAAMM	National Association of Architectural Metals Manufacturers
NACE	National Association of Corrosion Engineers
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
PCI	Pre-stressed Concrete Institute
PFI	Pipe Fabrication Institute
SAMA	Scientific Apparatus Makers Association
SFC	State Fire Code
SMACNA	Sheet Metal and Air Conditioning Contractor's National Association
SSPC	Steel Structures Painting Council
TEMA	Tubular Exchanger Manufacturer Association
UL	Underwriters Laboratory
HIS	Hydraulic Institute Standards

ISO	International Organization for Standardization
JIS	Japanese Industrial Standards
UBC	Uniform Building Codes
IEC	International Electrotechnical Commission
BS	British Standards
EN	European Standards
DIN	Deutsches Institut für Normung e. V.
VDI	German 'Verein Deutscher Ingenieure'
VDE	German 'Verband der Elektrotechnik Elektronik Informationstechnik'
KS	Korean Industrial Standards

B. Drawings and Design Model

1. A complete set of Issue for Construction (IFC) design and vendor shop drawings shall be submitted to GPA at the Commercial Operation Date, in CAD and PDF format. All drawings shall be in English language and Metric units. 3D modeling of power block is carry out by PDS or PDMS and model file submit shall be in nwd or dgn format. LSD and Natural gas supply lines will be excluded form 3D Modeling. Issue for Construction drawings (IFC) shall not be provided in AutoCAD format if the supplier has not provided these drawings to the Project Company due to confidentiality / intellectual property. In that case the drawings will be provided in PDF format.

C. Documentation and Manuals

1. Operations and maintenance manuals, presented in clear and thorough manner, complete with respect to dimensions, design criteria, materials of construction, and like information, shall be submitted for all equipment. Details shall be identified by reference to sheet and detail shown on Drawings. Manuals shall be written in English. All manuals shall clearly delineate the make, model and options of each piece of equipment or material included in the project.

2. Operations and maintenance manuals shall be submitted to GPA in PDF format at the Commercial Operation date. Operation and maintenance manuals for new equipment purchased after the Commercial Operation date shall also be provided to GPA at the time of purchase.

3. The Project Company shall arrange for all plant Operating and Maintenance Instructions to be kept fully maintained and updated throughout the Term of the Project and be transferred to GPA at the end of the Term of the Project.

D. Specifications

1. The Project Company shall be responsible for development of all procurement, construction, installation, start-up, and commissioning specifications required for construction of the plant. Project Company shall be responsible for developing a QA/QC and testing/commissioning plan approved by GPA. At a minimum the plan must conform to applicable NETA requirements for new facilities and comply with

GPAMOD 0025, 0026, 0027. The Project Company shall provide a PDF copy of all the conformed specifications to GPA at the Commercial Operation Date.

E. Tagging System

1. The plant shall utilize a tagging system to be determined by the Project Company. The tagging system shall include all equipment, enclosures, cables, pipes, instruments, control devices, valves, and other equipment. All equipment in the plant shall be identified with a stainless-steel tag permanently affixed to the equipment and in a location that is easily accessible to plant personnel.

F. As-Built Drawings

1. Record As-Built Drawings, in PDF format, shall be provided to GPA at Commercial Operation Date. Throughout the life of the plant, the Project Company shall update the As-Built drawings in electronic format, to reflect any plant modifications. These updated drawings will be transferred to GPA as the modifications are made, and at the end of the Term of the Project.

2.2 Performance Requirements for Fossil Fired Plants

2.2.1 Capacity

A. The plant net capacity is the net electric output. measured at the Delivery Point / Point of Interconnection. The Contracted Facility Capacity shall be within the range of 180 (net) MW, at Site Reference Conditions specified in Section 5.5 of this Specification. Because of the variability of technologies allowed and unit sizes, GPA will consider evaluating proposals that are within plus/minus10 % of the preferred capacity. The size of the Facility's individual units shall be such that a trip of a single Unit will not result in a loss of 45 MW.

B. The Project Company shall also provide the expected generation net output for all combinations of units online, while in compliance with permitted emissions guarantees.

C. The plant shall be capable of providing a minimum level of 700 MVA of Short Circuit energy at the 115 kV POI when operating at 20 MW or higher real power output. This may require some of the generating units not producing real power in such a scenario to be able to operate as synchronous condensers. The 700 MVA requirement must be met during the loss of the largest unit.

D. The plant is expected to provide inertia for the GPA system primarily through the inertia of the plant generators.

2.2.2 Start Up Duration

A. The start-up duration is defined as the time for each unit to reach its full net capacity from initiation of start-up sequence. The Project Company shall provide a startup duration, including from hot and cold conditions. Project Company's offering combined cycle plants shall provide startup times for the simple cycle unit as well as for individual steam generators associated with each combustion Turbine Generators.

2.2.3 Transient Response

A. The governor transient response shall be fast enough such that following a frequency disturbance a change of at least 5% of a single unit's capability shall be achievable within 1 second, and at least 10% of single unit's capability shall be achievable within 2 seconds following the disturbance. This applies to gas turbines; the steam turbine in combined cycle is not expected to meet it. The overall response of operating units shall meet the requirement.

2.2.4 Regulation Performance

A. The plant shall be capable of performing regulation required for renewable projects on the GPA system. The plant shall be capable of providing regulation of at least 25 MW/minute, up- and down-ramp, with equivalent of 66% of the plant real power capacity online.

2.2.5 Availability and Reliability

The Facility shall be designed to achieve the levels of availability and reliability normally expected for similar modern plants of the technology considered.

It is expected that the Facility will operate based on economic dispatch, with an average annual Equivalent Availability Factor during the plant lifetime of no less than 90%.

The Equivalent Availability Factor Formula is defined in accordance with ANSI/IEEE Standard 762-1987, Appendix C, Equation C-7 as follows:

EAF + POF + UOF + UDF + SDF = 100

where

EAF = equivalent availability factor
POF = planned outage factor
UOF = unplanned outage factor
UDF = unit derating factor
SDF = seasonal derating factor

Equation C-2

The equation shows that there are recognized sources of energy loss due to planned outages (full), unplanned outages (full), Unit deratings, and seasonal deratings. Each energy loss is represented by a separate index, POF, UOF, UDF, and SDF respectively. These indices are defined in such a way as to be additive. Therefore, the total per Unit

energy loss is the sum of the four indices, and the remaining per Unit energy not lost is called equivalent availability factor (EAF).

See also ECA Article 8.3, for the approach to liquidated damages to be charged because of "excessive outages" (those beyond the allowable number of outage hours per year for forced, maintenance, and scheduled outages).

2.2.6 Emissions

A. The Project Company is responsible for meeting the environmental permitting requirements.

2.2.7 Noise

A. Noise level at the site boundary shall meet the World Bank Group International Finance Corporation EHS Guidelines – 1.7 Noise. See Appendix I. Project Company must apply appropriate noise control methods to assure compliance. As per international practice, the IFC Noise guidelines shall be interpreted as follows:

- If the average background noise is lower than the applicable limits, the applicable limits set in Table 1.7.1 in the IFC guideline are considered at the site boundary.

- If the average background noise level exceeds the applicable limit, the plant noise level shall not exceed a maximum increase above the background levels of 3 dB at the site boundary.

- The noise level design is based on the existing conditions. Potential new developments near the plot are not foreseen and are therefore out of the Project Companies control.

- Noise Design is based on background noise analysis provided by GPA during bidding period.

B. Noise level of operating equipment inside the plant boundary shall not exceed 85 dB(A) when measured 3 ft (1 meter) in the horizontal plane and at an elevation of 5 ft (1.5 meters) from grade, in accordance with ISO3746 - 'Acoustics -for determination of sound power levels and sound energy levels of noise sources using sound pressure' for the noise measurement.

C. Noise level of any equipment shall not exceed 115 dB(A) measured from a distance of 3 ft (1 meter). Equipment with noise level greater than 85 dB(A) shall have a separate noise enclosure, or meet OSHA hearing protection requirements.

2.3 General Requirements

2.3.1 Procurement Requirements

A. Approved Suppliers

1. Provided equipment and technology must be of proven design which mean that the power generation equipment and technologies specified must have engaged in reliable commercial operation for at least three (3) continuous years at three different sites. (Except for BESS which shall have at least 1 year operation experience)

2. Equipment and materials shall be new and conform to a recognized standard such as ASTM. Reference Section 3.0, Particular Technical Requirements, for more detail pertaining to specific equipment, materials, and applicable codes.

2.3.2 Construction Requirements

A. General

1. The Project Company shall be responsible for all construction work on the Project. The construction, erection, and commissioning services shall include all material, labor, supervision, technical advisory services required to make the plant ready for commercial operation. The Project Company shall provide, install, and maintain temporary site facilities for use during construction, including temporary construction offices, trailers, utilities, and power during construction.

B. Safety

1. The Project Company shall establish safety regulations in conformance with OSHA, and adhere to those safety regulations at all times.

A key objective for the Project is to construct safely, with a goal of zero OSHA recordable events throughout construction and start-up activities.

3 PARTICULAR TECHNICAL REQUIREMENTS

3.1 Mechanical Plant and Systems Requirements

3.1.1 Applicable Codes and Standards

A. The design and specification of all mechanical work related to the Project shall be in accordance with all applicable laws and regulations of the federal and state governments and with the applicable local codes and ordinances.

B. The codes and industry standards used for design, fabrication, and construction will be the codes and industry standards, including all addenda, in effect as of September 14, 2018.

C. All mechanical design shall be performed by or done under the supervision of a Professional Engineer registered in Guam.

D. The following are a list of relevant mechanical codes and standards that shall be followed in the design of the plant. Project Company may design to acceptable equivalent European, Japanese and Korean standards. The Project Company must demonstrate equivalency.

ASME	American Society of Mechanical Engineers (ASME)
ASME	Section I Rules for Construction of Power Boilers
ASME	Section V Nondestructive Examination of the ASME Boiler and Pressure Vessel Code
ASME	Section VIII Division 1 Pressure Vessels of the ASME Boiler and Pressure Vessel Code
ASME	Section IX Welding and Brazing Qualifications of the ASME Boiler and Pressure Vessel Code
ASME	B16.1 Cast Iron Pipe Flanges and Flanged Fittings
ASME	B16.3 Malleable Iron Treaded Fittings
ASME	B16.5 Pipe Flanges and Flanged Fittings
ASME	B16.9 Factory Made Wrought Steel Butt Welding Fittings
ASME	B16.11 Forged Fittings, Socket Welding and Threaded
ASME	B16.15 Cast Bronze Threaded Fittings Classes 125 and 250
ASME	B16.20 Metallic Gaskets for Pipe Flanges
ASME	B16.21 Non-Metallic Flat Gasket for Pipe Flanges
ASME	B16.22 Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
ASME	B16.24 Cast Copper Alloy Pipe Flanges and Flanged Fittings
ASME	B16.28 Wrought Steel Butt Welding Short Radius Elbows and Returns
ASME	B16.34 Steel Butt Welding End Valves
ASME	B16.36 Orifice Flanges
ASME	B18.2.2 Square and Hex Nuts Inch Series
ASME	B31.1 Power Piping
AMCA	Air Movement and Control Association
AGMA	American Gear Manufacturers Association
ANSI	American National Standards Institute
ANSI	Z9.2 Fundamentals Governing the Design and Operation of Local Exhaust Systems
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
ASHRAE	62 Ventilation for Acceptable Air Quality
ASHRAE	Handbook HVAC Applications
ASHRAE	Handbook HVAC Fundamentals
ASHRAE	Handbook HVAC Systems and Equipment
ASHRAE	15 - 2004 Safety Standard for Refrigeration Systems
ASHRAE	52.1 – 1992 Gravimetric and Dust Spot Procedure for Testing Air Cleaning Devices used in General Ventilation for Removing Particulate Matter

ASHRAE 52.2 - 1999 Method of Testing General Ventilation Air Cleaning Devices for Removal Efficiency in Particle Size
ASHRAE 70 – 1991 Method of Testing for Rating the Performance of Air Outlets and Inlets
ASHRAE 90.1 Energy Standard for Buildup except Low-Rise Residential Building
ASTM American Society for Testing and Materials
ASTM A53 Specification for Pipe, Steel, Black and Hot-Dipped, Zinc- Coated, Welded and Seamless
ASTM A105 Specification for Carbon Steel Forgings for Piping Applications
ASTM A106 Specification for Seamless Carbon Steel Pipe for High-Temperature Service
ASTM A182 Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service
ASTM A312 Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
ASTM A234 Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service
ASTM A403 Specification for Wrought Austenitic Stainless Steel Piping Fittings
ASTM B88 Specification for Seamless Copper Water Tube
ASTM D2657 Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings
ASTM D3035 Specification for Polyethylene (PE) Plastic Pipe Based on Controlled Outside Diameter
ASTM D3261 Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing
ASTM D3350 Specification for Polyethylene Plastics Pipe and Fittings Materials
ASTM F714 Specification for Polyethylene (PE) Plastic Pipe Based on Outside Diameter
AWS American Welding Society
AWS D1.1 Structural Welding Code Steel
AWS QC1 Standard for AWS Welding Inspectors
AWWA American Waste Water Association
AWWA C301 Pre-stressed Concrete Pressure Pipe, Steel-Cylinder Type
AWWA C304 Design of Pre-stressed Concrete Cylinder Pipe
AWWA Manual M9 Concrete Pressure Pipe
AWWA C200 Steel Water Pipe 6 in. (150mm) and Larger
AWWA C207 Steel Pipe Flanges for Waterworks Service. Sizes 4 in. Through 144 in. (100 mm through 3,600 mm)
AWWA C208 Dimensions for Fabricated Steel Water Pipe Fittings

AWWA C504 Rubber-Seated Butterfly Valves
CFR Code of Federal Regulations
CFR 29CFR1910 Occupational Safety and Health Standards
CFR 29CFR1926 Safety and Health Regulations for Construction
CFR Volume 40 Part 60 Standard of Performance for New Stationary Sources
CTI Cooling Technology Institute Standards
HEI Heat Exchange Institute Standards
HI Hydraulic Institute Standards
ACGIH American Council of Government Industrial Hygienists
Industrial Ventilation: A Manual of Recommended Practice
MSS SP-61 Pressure Testing of Steel Valves
MSS SP-84 Steel Valves, Socket Welding and Threaded Ends
MSS SP-58 Pipe Hangers and Supports – Materials, Design, Manufacture, Selection, Application, and Installation
MSS SP-97 Integrally Reinforced Forged Branch Outlet Fittings –Socket Welding, Threaded and Butt Welding Ends
MSS SP-127 Bracing for Piping Systems: Seismic – Wind – Dynamic Design, Selection, and Application
NFPA National Fire Protection Association
NFPA 11 Low Medium and High Expansion Foam
NFPA 12 Standard on Carbon Dioxide Extinguishing Systems
NFPA 13 Standard for the Installation of Sprinkler Systems
NFPA 14 Standard for the Installation of Standpipe, Private Hydrant and Hose Systems
NFPA 15 Standard for Water Spray Fixed Systems for Fire Protection
NFPA 16 Standard for the Installation of Foam-Water Sprinkler and Foam- Water Spray Systems
NFPA 20 Standard for the Installation of Stationary Pumps
NFPA 24 Standard for the Installation of Private Fire Service Mains and Their Appurtenances
NFPA 30 Flammable and Combustible Liquids Code
NFPA 68 Guide for Venting of Deflagrations
NFPA 70 National Electrical Code
NFPA 72 National Fire Alarm Code
NFPA 85 Boiler and Combustion System Hazards Codes

NFPA 90A Standard for Installation of Air Conditioning and Ventilating Systems
NFPA 90B Standard for the Installation of Warm Air Heating and Air Conditioning Systems
NFPA 850 Recommended Practices for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations
NFPA 2001 Clean Agent Fire Extinguishing Systems
SMACNA Sheet Metal and Air Conditioning Contractors National Association
SMACNA Rectangular Industrial Duct Construction
SMACNA Round Industrial Duct Construction
SSPC Society of Protective Coatings
SSPC-PA1 Shop Field and Maintenance Painting of Steel
SSPC-SP3 Power Tool Cleaning
SSPC-SP5/NAC-1 White Metal Blast Cleaning
SSPC-SP6/NACE-3 Commercial Blast Cleaning
UL Underwriters Labs
API American Petroleum Institute
ISO International Organization for Standardization
JIS Japanese Industrial Standards
TEMA Tubular Exchanger Manufacturer's Association
BS British Standards
EN European Standards
DIN Deutsches Institut für Normung e. V.
VDI German 'Verein Deutscher Ingenieure'
VDE German 'Verband der Elektrotechnik Elektronik Informationstechnik'
KS Korean Industrial Standards
CMAA Crane Manufacturers Association of America

3.1.2 Plant Piping Systems

A. See Appendix B for piping systems and pipeline for ULSD supply or Natural Gas supply.

B. General Design and Selection Criteria Except as noted in Appendix B: Piping shall be designed in accordance with the requirements of the Code for Pressure Piping, or ASME B31.1 - Power Piping, as applicable.

C. Piping materials shall be in accordance with applicable ASTM and ANSI standards, or equivalent DIN standards. Materials to be incorporated in permanent systems shall

be new, unused, and undamaged. Piping materials will generally be in accordance with the following criteria:

D. Material selection shall generally be based on the design temperature and service conditions in accordance with the following:

1. Carbon steel piping materials shall be used for design temperatures less than or equal to 371 °C (700 °F).
2. 1-¼ percent or 2-¼ percent chromium alloy steel piping materials shall be used for design temperatures greater than 371 °C (700 °F). At the client's request field welding of 9 percent chrome shall be avoided where possible.
3. 1-¼ percent or 2-¼ percent chromium alloy steel piping materials shall be used where flashing may occur, including heater drains service. Field welding of 9 percent chrome shall be avoided where possible.
4. Stainless steel piping shall be utilized for high resistance to corrosion, and for piping applications requiring a high degree of cleanliness.
5. Fiberglass reinforced plastic piping materials shall be used only in applications requiring corrosion-resistant materials.
6. Underground circulating water piping shall be fiberglass reinforced plastic pipe, that piping at locations under buildings shall be pre-stressed concrete embedded cylinder pipe with concrete encased welded steel pipe. Above ground circulating water piping shall be welded steel.
7. Plastic piping having a high coefficient of thermal expansion shall be used only after a thorough analysis of the piping system thermal expansion parameters.
8. High density polyethylene (HDPE) piping shall be used for underground air service and water service other than circulating water.

3.1.3 Mechanical Installation Requirements

A. Insulation

1. All piping, equipment, or surfaces operating above 140°F near walkways, access points, maintenance areas, or operation areas shall be sufficiently insulated to reduce the surface temperature to 140°F for personnel protection. All piping, equipment, or surfaces where operating temperatures exceed 140°F or where heat conservation is necessary shall be sufficiently insulated to reduce the surface temperature to 140°F. Material containing cold fluids shall receive insulation as required to prevent condensation from forming.

3.1.4 Products

A. Valves

1. Valves shall be provided to control and isolate different systems within the plant. Where possible equipment shall be provided with isolation and bypass valves to allow for equipment maintenance without a plant outage. Valve operators shall include levers, wheels, chain pulley and pneumatic operators as required by the location and service conditions of the valve. Valves shall be arranged for

operation from floor level where possible and if required, will have extension spindles, chain operators, or gearing. The location of valves shall be accessible without the use of portable ladders or a man-lift. Hand-actuated valves shall be operable by one person. Valve materials shall be consistent with pipe specifications.

2. The design, fabrication, construction and testing of valves shall conform to the applicable codes and standards in Section 3.2.1.

B. Pumps

1. Pumps shall be designed for ease of maintenance with a removal area for the pump and motor. General service pumps shall be in accordance with the recommendations of the Hydraulic Institute Standards, and shall be suitable for the service and environment for which they are installed.

C. Heat Exchangers

1. Miscellaneous heat exchangers shall be furnished in accordance with:

ASME	Boiler and Pressure Vessel Code, Section VIII
HEI	Heat Exchanger Institute – Standards for Power Plant Heat Exchangers
TEMA	Tubular Exchanger Manufacturers Association
API 661	Air Cooled Heat Exchangers

D. Shop Fabricated Tanks

1. Shop fabricated tanks shall be designed and fabricated in accordance with:

ASME	Boiler and Pressure Vessel Code, Section VIII
AWWA	American Water Works Association

3.1.5 Execution

A. The Project Company shall develop construction specifications for erection, installation, and assembly of mechanical equipment to ensure a high-quality product in accordance with the applicable codes and standards in this Specification. The specifications shall detail equipment assembly, alignment, anchoring, welding procedures, cleaning, erection of piping and equipment, piping system cleaning, piping inspection and testing and acceptable materials.

3.2 Electrical Plant and Systems Requirements

1. Each unit in the Facility shall remain connected to the Grid System from frequency ranges of 57.0 – 63.0 Hz in accordance with GPAPRC-006

2. Voltage range to be withstood by the Facility without disconnecting should be as follows (based on NERC PRC-024-2):

High Voltage Ride-Through Duration		Low Voltage Ride-Through Duration	
Voltage (pu)	**Time (sec)**	**Voltage (pu)**	**Time (sec)**
>1.20	Instantaneous	<0.45	0.15
≥1.175	0.20	<0.65	0.30
≥1.15	0.50	<0.75	2.00
≥1.10	1.00	<0.90	3.00
Ref. additional detail as stated in PRC-0024-2 for voltage ride-through.			

3. Communication (SCADA) requirements shall be specified including the communication protocol, type of the carrier, and a list of signals (information, alarms, etc..) to be communicated to the GPA dispatch center.
4. Automatic Generation Control Facility should not include any AGC system other than unit governors. AGC will be performed by GPA AGC system. Plant control system should not change or modify governor set-point or plant output other than through long-term control. If plant control system has control capability of individual units' real power output, it must include a droop component in the control.
5. Controller ability to mitigate sub-synchronous resonance.
6. Power revenue metering requirements (accuracy class, number of tariffs that can be programmed in the metering system, data logging and storage requirements, software for remote billing requirements, etc.).
7. Information and requirements for the Electrical Interconnection Facilities (voltage level and location of the GPA substation to be used to for power evacuation, one-line diagram and layout of the substation, specifying whether it is single or double circuit).
8. Governor requirements. Unit governors should be droop based governors with a dead band not exceeding 0.025 Hz. Each unit should be controlled by its own governor. Governor set-point should not be altered or changed automatically by plant DCS. Automatic set-point changes should only be made by the GPA SCADA system.

3.2.1 Applicable Codes and Standards

A. Unless noted otherwise, all electrical components, design and construction shall conform to applicable governmental codes, and latest editions of recommended practices and standards of the following organizations: (Project Company may offer acceptable equivalent European, Japanese and Korean standards. The Project

Company must demonstrate equivalency.) Only one set of standards shall be applied throughout the Facility.

NFPA 70	National Electrical Code
NFPA 70E	National Electrical Safety Code
NFPA 780	Standard for the Installation of Lightning Protection Systems
IEC	International Electrotechnical Commission
IEEE 100	Authoritative Dictionary of Standard Terms
IEEE C37.1	IEEE Standard for SCADA and Automation Systems
IEEE C37.2	Electrical Power System Device Function Numbers, Acronyms, and Contact Designations
IEEE C37.04	IEEE Standard Rating Structure for AC High-Voltage Circuit Breakers
IEEE C37.06	IEEE Standard for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis Preferred Ratings and Related Required Capabilities
IEEE C37.09	IEEE Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis
IEEE C37.12	IEEE Guide for Specifications of High-Voltage Circuit Breakers (over 1000 Volts)
IEEE C37.17	IEEE Standard for Trip Systems for Low Voltage (1000V and Below) AC and General Purpose (1500V and Below) DC Power Circuit Breakers
IEEE C37.20.1	IEEE Standard for Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear
IEEE C37.20.2	IEEE Standard for Metal-Clad Switchgear
IEEE C37.20.3	IEEE Standard for Metal-Enclosed Interrupter Switchgear
IEEE C37.20.7	IEEE Guide for Testing Metal-Enclosed Switchgear Rated Up to 38kV for Internal Arcing Faults
IEEE C37.23	IEEE Standard for Metal-Enclosed Bus
IEEE C37.90	IEEE Standard for Relays and Relay Systems Associated with Electric Power Apparatus

IEEE C37.90.1	IEEE Standard for Surge Withstand Capability (SWC) Tests for Relays and Relay Systems Associated with Electric Power Apparatus
IEEE C37.91	IEEE Guide for Protecting Power Transformers
IEEE C37.102	IEEE Guide for AC Generator Protection
IEEE C37.110	IEEE Guide for the Application of Current Transformers Used for Protective Relaying Purposes
IEEE C50.12	IEEE Standard for Salient-Pole 50 Hz and 60 Hz Synchronous Generators and Generator/Motors for Hydraulic Turbine Applications Rated 5 MVA and Above
IEEE C50.13	IEEE Standard for Cylindrical-Rotor 50 Hz and 60 Hz Synchronous Generators Rated 10 MVA and Above
IEEE C57.12	IEEE Standard for General Requirements for Liquid-Immersed Distribution, Power and Regulating Transformers
IEEE C57.12.01	IEEE Standard General Requirements for Dry-Type distribution and Power Transformers Including Those with Solid-Cast and/or resin-encapsulated Windings
IEEE C57.12.10	IEEE Standard Requirements for Liquid-Immersed Power Transformers
IEEE C57.12.70	IEEE Standard for Standard Terminal Markings and Connections for Distribution and Power Transformers
IEEE C57.13	IEEE Standard Requirements for Instrument Transformers
IEEE C57.13.3	IEEE Guide for Grounding of Instrument Transformer Secondary circuits and Cases
IEEE C62.11	IEEE Standard for Metal-Oxide Surge Arrestors for AC Power Circuits (>1 kV)
IEEE C62.22	IEEE Guide for the Application of Metal-Oxide Surge Arrestors for Alternating-Current Systems
IEEE C62.23	IEEE Application Guide for Surge Protection of Electric Generating Plants
IEEE 112	IEEE Standard Test Procedures for Polyphase Induction Motors and Generators

IEEE 141	IEEE Recommended Practice for Electric Power Distribution for Industrial Plants
IEEE 142	IEEE Recommended Practice for Grounding of Industrial and Commercial Power Systems
IEEE 242	IEEE Recommended Practice for Protection and Coordination of Industrial and commercial Power Systems
IEEE 386	Standard for Separable Insulated Connector Systems for Power Distribution Systems Rated 2.5 kV through 35 kV
IEEE 399	IEEE Recommended Practice for Industrial and Commercial Power Systems Analysis
IEEE 493	IEEE Recommended Practice for the Design of Reliable Industrial and Commercial Power Systems
IEEE 551	IEEE Recommended Practice for calculating Short-circuit Currents in Industrial and Commercial Power Systems.
IEEE 519	IEEE Recommended Practice and Requirements for Harmonic Control in Electric Power Systems
IEEE 664	IEEE Guide for Generating Station Grounding
IEEE 1547	Standard for Interconnecting Distributed Resources with Electric Power Systems
NEMA MG-1	Motors and Generators
NEMA VE-1	Metal Cable Tray Systems
NEMA VE-2	Cable Tray Installation Standards
NEMA ICS 1	Industrial Control and Systems General Requirements
NEMA ICS 3	Medium Voltage Controllers Rated 2001 to 7200 Volts AC
NEMA WC 74	5-46 kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy
UL 44	Thermoset-Insulated Wires and Cables
UL 96	Standard for Lightning Protection Components
UL 96A	Standard for Installation Requirements for Lightning Protection Systems

UL 347	Medium Voltage AC Contactors, Controllers and Control Centers
UL 508	Industrial Control Equipment
UL 508A	Standard for Industrial Control Panels
UL 845	Motor Control Centers
UL 1072	Standard for Medium-Voltage Power Cables
UL 1558	Standard for Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear

3.2.2 General Design Requirements

A. Power plant shall have an auxiliary electrical system. The auxiliary electrical system shall be supplied from one or more of the following sources:

1. Generator(s) power bussing
2. Generator(s) breaker switchgear
3. GPA 115 kV transmission grid

B. Power plant auxiliary voltages are as follows:

1. Medium Voltage: 5kV to 15kV (or 22kV), 3 phase
2. Low Voltage: 480V, 3 phase
3. House and convenience power 208/120V, 3 phase

C. Medium voltage system

1. Generator(s)
2. Generator power bussing
3. Step up transformer

D. Generator(s) shall be the source of electric power.

1. Mechanical, rotating generator(s) shall be synchronous type of either cylindrical rotor or salient pole type. Generators shall have the following ratings:
    a. To provide increased inertia and short circuit current, generators should be oversized to compensate for lack of inertia for aero-derivative or reciprocal generation. The unit is expected to provide inertia for the GPA system primarily through the inertia of the plant generators. As such, the generators are expected to be oversized relative to the capacity of the units to provide increased inertia. The generators MVA rating must be sized a minimum of 130% of the real power capacity of the prime mover
    b. Number of phases: 3
    c. Output frequency: 60 Hz

d. Minimum power factor: 0.80 lagging. The generators full dynamic range should be available at the Point of Interconnection (allowing for offset to reactive losses from generator terminals to the Point of Interconnection), including at full load. Under no circumstances should the dynamic power factor range at the POI be less than +/- 0.85.

e. Winding pitch: 5/6

2. Non-mechanical generator shall interface with the 115 kV grid through a step up transformer and shall have the following requirements:

a. Generate a 3-phase voltage and current from DC or other AC single and poly phase sources as part of the power generation process.

b. Be able to operate through the four power quadrants.

c. Shall have an efficiency of greater than 95%.

d. Shall comply with IEEE 1547.

4. Equipment furnished shall be capable of serving maximum rated output of prime movers at rated power factors, under all ambient and cooling conditions, with minimum additional 5% capability.

5. Design generator to withstand bolted 3-phase fault at generator terminals without damage per IEEE C50.12 and C50.13 while operating within rated operating frequency range with an excitation value equivalent to maximum rated terminal voltage at rated lagging power factor.

6. Mechanical generator shall be capable of withstanding overspeed following unit trip under full load or in accordance with GPAPRC-006 without mechanical degradation.

7. Power generation and power handling conductors as part of the generator to be of copper construction.

8. Provide partial discharge monitor and control system complete with corporate license software.

9. Provide surge capacitor and surge arresters.

10. Provide neutral grounding equipment in accordance with neutral grounding method specified.

11. Provide generator excitation system complete with equipment, materials, and accessories.

12. Provide voltage regulator that shall be capable of automatic and manual voltage regulation.

E. DC Power System

1. As part of a proposed generating system, DC power system shall have the following requirements

2. No more than 1500 volts DC nominal.

3. System shall be ungrounded and shall have ground detection capability.

4. System shall have overcurrent and over/undervoltage protection per the standards.

F. Battery Energy Storage

1. Any proposed battery energy storage system shall have an integral Battery Management System (BMS).
2. Submit a battery cell maintenance and disposal plan with bid.

H. Medium Voltage Switchgear

1. Switchgear shall handle the distribution and protection of medium voltage power (5 – 15 kV or 22kV) for the plant.
2. Switchgear shall be a complete, coordinated factory assembly ready for installation, connection, and designed for operation at site ambient temperatures and elevations.
3. If arc-resistant gear is specified, manufacturer shall provide complete and coordinated arc chute plenum design including supports and vents. This shall include routing of arc chute to vent location as coordinated with Engineer. If arc-resistant gear is not provided, manufacturer shall include arc-flash mitigation such as differential relays in all zones of protection, arc-detection relays in switchgear where hazard rating exceeds Category 2 without such protection.
4. Switchgear assembly shall consist of individual free-standing vertical sections to form a rigid, metal-clad switchgear assembly.
5. Switchgear main bus shall be copper bar, designed to continuously carry specified load current without exceeding temperature rise requirements.
6. Provide uninsulated copper ground bus with momentary rating at least equal to momentary rating of Switchgear.

I. Medium Voltage Motor Control Centers

1. Motor control centers shall control medium voltage motors or similar single loads by across the line starting methods.
2. Medium-voltage motor control center assembly(ies) complete with accessories including, but not limited to:
    a. Control center structure.
    b. Incoming line enclosure.
    c. Main horizontal and insulated vertical bus.
    d. Fused vacuum contactors.
    e. Main breaker or fused switch.
    f. Isolation and load break switches.
    g. Isolated low-voltage compartments.
    h. Protective relays and metering devices.

i. Communications.

j. Portable racking and lifting devices capable of transporting contactor outside of compartment.

3. MCC structures shall welded steel frame, formed steel doors and side sheets, flat steel top and rear covers forming metal enclosed, dead front freestanding assembly.

4. Each starter shall include, but not be limited to, isolating switch, medium-voltage fuses, contactor, control power transformer, and low-voltage section.

5. Vertical and horizontal buses are to be of copper construction.

J. Step-up and Auxiliary Transformers

1. Transformers shall be provided to provide appropriate voltages for in plant electrical systems and tying to GPA's electrical distribution system.

2. Transformer shall be capable of withstanding without injury mechanical and thermal stresses resulting from short circuit currents.

3. Transformer core and coils shall have circular cross sections.

4. Transformer coils shall be of copper construction.

5. Provide transformer with manufacturer's standard oil conservation system.

6. Provide bushing type CTs with fully distributed windings for relaying or metering service in quantities, ratios, and ratings as required.

7. Provide metal-oxide station class arresters with voltage ratings as required.

8. Provide tap voltages of +/- 2.5% and +/- 5% on the primary winding. Each tap position shall be fully rated and shall not limit kVA rating of transformer. No-load tap change shall be provided.

9. For ventilated, dry type transformers, silicon-resin, vacuum encapsulation or vacuum pressure impregnated (VPI) process shall apply 4-dip protective shield of silicon resin to coils.

K. Isolated Phase Bus

1. Isolated phase bus can be used to transmit electric power at high ampacities (>= 5000 amps).

2. Isolated phase bus duct system includes, but is not limited to:

a. Bus and enclosure.

b. Hardware and components for connections to equipment.

c. Flexible links for all connections.

d. Expansion joints.

e. Vapor barriers and wall penetrations.

f. All necessary bus support structures

i. Isolated phase bus shall be of aluminum construction for both the conductors and the outer duct enclosure.

ii. Design bus duct systems for nominal voltages, BIL, number of poles and rated maximum voltages.

L. Nonsegregated Phase Bus Duct

1. Nonsegregated phase bus can be used to transmit electric power within the plant.

2. Nonsegregated phase bus duct system includes, but is not limited to:

a. Bus and enclosure.

b. Hardware and components for connections to equipment.

c. Flexible links for all connections.

d. Expansion joints.

e. T-tap connections.

f. Vapor barriers and wall penetrations.

g. All necessary bus support structures.

3. Nonsegregated phase bus bar conductors from high-grade, 98% pure copper bus bars. Connection areas shall be tinned or silver-plated.

4. Design bus duct systems for nominal voltages, BIL, number of poles and rated maximum voltages.

M. Low Voltage System

1. Low Voltage Switchgear

2. Switchgear shall handle the distribution and protection of low voltage power (600V or less) for the plant.

3. Factory wired switchgear assembly consisting of, but not limited to:

a. Dead-front metal-enclosed compartments containing power buses, neutral bus, ground bus.

b. Power circuit breakers.

c. Safety interlocks and auxiliary control devices.

d. Instrument transformers.

e. Protective relays.

f. Metering.

g. Switches.

4. Switchgear shall be a complete, coordinated factory assembly ready for installation, connection, and designed for operation at site ambient temperatures and elevations.

5. If arc-resistant gear is specified, manufacturer shall provide complete and coordinated arc chute plenum design including supports and vents. This shall include routing of arc chute to vent location as coordinated with Engineer. If arc-resistant gear is not provided, manufacturer shall include arc-flash mitigation such as differential relays in all zones of protection, arc-detection relays in switchgear where hazard rating exceeds Category 2 without such protection.
6. Entire assembly shall be suitable for 600 volts maximum ac service regardless of operating voltage.
7. Bus system shall have minimum ANSI 4-cycle short-circuit withstand rating.
8. Switchgear main bus and ground bus shall be copper bar, designed to continuously carry specified load current without exceeding temperature rise requirements.

N. Motor Control Centers

1. Motor control centers shall control low voltage motors by across the line starting methods and to distribute low voltage power to other electrical power distribution equipment (switchboards, panelboards, etc.) as well as single loads.
2. Motor control center shall be continuous, coordinated, factory assembly ready for installation, connection, and immediate service designed for operation at site ambient temperatures and elevations.
3. Motor control center may include, but is not limited to:
   a. Horizontal power bus.
   b. Dead-front metal enclosed compartments containing power buses.
   c. Ground bus.
   d. Feeder circuit breakers and combination motor controllers.
   e. Auxiliary and transition compartments.
   f. Auxiliary control devices.
   g. Instrument transformers.
   h. Relays.
   i. Meters.
   j. Control switches.
4. Motor control centers shall be suitable for operation on 3-phase electrical system.
5. Main horizontal bus and vertical bus shall be either tin-plated for corrosive environments or silver-plated at bolted connections. Fabricate from copper. Minimum ampacities shall be as designed at 50°C temperature rise over 40°C ambient in compliance with UL standards.

O. Variable Frequency Drives

1. Variable frequency drives shall be used when the driven load must be controlled over a continuous range of speeds.
2. VFD shall convert incoming fixed frequency 3-phase ac power into variable frequency and voltage for controlling speed of 3-phase ac motor.
3. Motor voltage shall be varied with frequency to maintain desired motor magnetization current suitable for eliminating need for motor derating.
4. VFD shall be sinusoidal PWM type drive with sensor-less torque vector control capability. Control techniques other than PWM, not acceptable.
5. Components:
    a. Full-wave diode rectifier to convert supply ac to fixed dc voltage.
    b. DC link capacitors.
    c. Insulated Gate Bipolar Transistor (IGBT) power section, dual rated for either variable or constant torque applications.
    d. VFD shall be microprocessor-based with LED and LCD display to monitor operating conditions.
    e. Separate control and power terminal boards.
6. VFD installations must meet the requirements of IEEE 519 at the point of common coupling (PCC). The PCC shall be defined as the first motor control center or switchgear bus upstream from the VFD.

P. General Plant Requirements

1. Medium Voltage Power Cable
    a. Cables and accessories shall be in accordance with applicable standards
    b. Medium Voltage power cables shall have copper conductors.
    c. Single and multi-conductor cables shall have shielded conductors.
    d. PVC jacketing not allowed.
2. Low voltage power and control cables
    a. Power and control cables specified are for voltages 600 volts and below.
    b. Instrumentation and thermocouple extension cables specified for voltages of 300 volts or below.
    c. Power, control and instrumentation cables shall have copper conductors.
    d. Power and control cable insulation shall comply with NEC type XHHW-2. On the Steam Turbine Generator (Packaged Unit cables and accordingly certified) UL with XLPE insulation will be used according to OEM standard.
    e. Minimum wire size is:
        i. #14 AWG for control circuits
        ii. #16 AWG for instrumentation circuits

iii. #12 AWG for power circuits

3. Motors
   a. Electric motors ½ hp and larger shall be 3 phase, squirrel cage induction motors.
   b. Motors shall be in accordance with applicable requirements.
   c. Motor windings shall be copper.
   d. Motors driven by VFDs shall be VFD compliant.
4. Grounding
   a. Ground and bond all plant electrical, mechanical and structural components to the plant grounding system.
   b. Provide a ground grid as the main plant grounding system.
   c. Grounding and bonding conductors shall be tinned copper.
5. Lightning Protection
   a. Provide a Franklin style lightning protection system.
   b. Lightning protection conductors and air terminals shall be of aluminum construction.
6. Cathodic Corrosion Protection
   a. Provide cathodic protection for the following:
      i. Underground steel, stainless steel, copper, or brass piping using galvanic anodes
      ii. Bottoms of pad mounted steel water storage tanks using galvanic anodes
      iii. The fuel and natural gas pipelines from GPA Bulk Fuel Storage Facility tank farm to the plant site if fossil fuel is offered.

Q. Plant Control System
   1. Provide a control system including process controllers, redundant power supplies, chassis, Input/Output (I/O) modules, communications interface modules, and associated hardware. The control system shall meet all NERC CIPS security requirements.
   2. Provide a complete and coordinated control system equipment and software package that safely controls all aspects of power plant operations. The control system shall not automatically control the output of individual units or adjust the

unit output of any individual unit under AGC and governor control. DCS shall not provide an interface between the GPA AGC system and the unit governor.

3. Control system shall have both discrete and analog input and output signals management capability as well as interpreting HART (Highway Addressable Remote Transducer) signal protocol.
4. Control system software programming shall have a prioritized alarms management system.
5. Control system shall have human-machine interfaces (HMIs) with dual monitors displaying information in a diagrammatic fashion. One-Line Diagrams and Process and Instrumentation Diagrams (P&IDs) shall be used as a basis for graphical screen layouts.
6. Control system shall be capable of the following communications protocols:
    a. Modbus
    b. Modbus TCP
    c. DNP3
    d. Profibus
    e. Devicenet

R. Dynamic Fault recorder

1. The plant shall include a Tesla 4000 Power System Monitoring Recorder. The recorder shall monitor the voltage and current of each unit, the plant as a whole and each 115 kV transmission line interconnecting to the GPA system. The recorder shall also monitor the breaker status of each unit breaker and each line breaker and fault detection on the 115 kV and generation relays. The generator units shall also monitor the governor set point and any changes made to the governor set-point. All digital or analog inputs shall be accurately reported to the recorder within 8 ms of the actual change.

S. Protective Relaying

1. Plant electrical protective relaying system shall be provided to protect plant personnel and equipment from inadvertent electrical energization.
2. Protective relays shall specifically protect the following equipment:
    a. Generator(s)
    b. Medium voltage switchgear
    c. Low voltage switchgear
    d. Unit auxiliary and step-up transformers
3. Protective relay system shall be designed and set in accordance with the latest Standards. GPA has standardized on utilizing Schweitzer Engineering Laboratories, Inc. protective relays.

4. For electrical equipment not protected by protective relays or trip units, provide thermal-magnetic breakers for overcurrent protection (50/51).
5. All switchgear not designed as arc-resistant gear shall include arc-detection relays and protection.
6. All 115 kV relays shall be SEL type relays.

T. Unit Response Requirements

The unit(s) must meet the GPA Grid and Reliability Standards in Appendix G.

3.2.3 Electrical Installation Requirements

A. Electrical installation shall conform to NFPA 70 and NFPA 70E.

3.2.4 Execution

A. The Project Company shall develop construction specifications for erection, installation, and assembly of electrical equipment to ensure a high-quality product in accordance with the applicable codes and standards in this Specification. The specifications shall detail equipment assembly, alignment, anchoring, welding procedures, erection of equipment, testing and acceptable materials.

3.3 Civil Requirements

3.3.1 Applicable Codes and Standards

A. Unless noted otherwise, all design and construction shall conform to applicable governmental codes, and latest editions of recommended practices and standards of the following organizations:

American Association of State Highway and Transportation(AASHTO)

American Concrete Institute(ACI)

American Concrete Pavement Association(ACPA)

American with Disabilities Act(ADA)

Asphalt Institute AI)

American Institute of Steel Construction(AISC)

American Iron and Steel Institute(AISI)

American National Standards Institute(ANSI)

American Public Works Association(APWA)

American Road and Transportation Builders Association(ARTBA)

American Society for Testing and Materials(ASTM)

American Society of Landscape Architects(ASLA)

American Traffic Safety Services Association(ATSSA)

American Welding Society(AWS)

American Society of Civil Engineers(ASCE)

American Water Works Association(AWWA)

Concrete Reinforcing Steel Institute(CRSI)

Federal Acquisition Regulations (48 CFR Chapter 1)(FAR)

Federal Highway Administration(FHWA)

Federal Land Highways(FHA)

Federal Specifications and Standards(FSS)

Federal Test Method Standard(FTMS)

Institute of Electrical and Electronic Engineers(IEEE)

Institute of Transportation Engineers(ITE)

National Electrical Manufacturer's Association(NEMA)

Portland Cement Association(PCA)

Prestressed Concrete Institute(PCI)

Post Tensioning Institute(PTI)

Occupational Safety and Health Administration(OSHA)

Guam Department of Public Works Standard Plans

Guidebook to Development Requirements on Guam

Environmental Procedures Guide for Transportation Projects on Guam

3.3.2 General Design Requirements

Project Company shall perform site studies it deems necessary for their design. Studies may include but are not necessarily limited to the following:

- Property maps and boundary surveys
- Topographic surveys
- Hydrological data
- Subsurface utility investigation
- GWA water system model
- Cultural resources surveys
- Natural resources surveys
- Geotechnical Investigation

A. Water supply: The plant potable water supply will originate from the GWA public water supply. Cooling water will be drawn from the effluent of the GWA Northern District Wastewater Treatment Plant. Project Company shall treat the water as necessary for service water, fire water, and boiler makeup.

B. Facility shall be designed for an expected service life of 30 years or greater.

C. The UXO/MEC requirements are not applicable to the GPA's 59-acre parcel. In addition, an investigation for explosive and national historic and cultural properties prior to construction work (Plant area & Fuel Pipe Line) will be executed by GPA.

3.3.3 Products

A. Construction Documents including but not limited to Drawings and Specifications.

3.3.4 Execution

A. Project Company to prepare construction documents for all civil improvements.

3.4 Structural Requirements

3.4.1 Applicable Codes and Standards

A. Unless noted otherwise, all design and construction shall conform to applicable governmental codes of the Territory of Guam, and latest editions of recommended practices and standards of the following organizations or their European, South Korean, or Japanese equivalent: Only one set of standards shall be applied throughout the Facility.

Aluminum Association(AA)

American Architectural Manufacturers Association(AAMA)

American Concrete Institute(ACI)

American Institute of Steel Construction(AISC)

American Iron and Steel Institute(AISI)

American National Standards Institute(ANSI)

American Society for Testing and Materials(ASTM)

American Welding Society(AWS)

American Society of Civil Engineers(ASCE)

APA – Engineered Wood Association

American Society of Safety Engineers(ASSE)

American Wood Council(AWC)

American Wood Protection Association(AWPA)

Concrete Reinforcing Steel Institute(CRSI)

International Code Council(ICC)

Society for Protective Coatings(SSPC)

National Concrete Masonry Association(NCMA)

National Association for Corrosion Engineers(NACE)

National Assoc. of Arch. Metals Manufacturers(NAAMM)

Occupational Safety and Health Administration(OSHA)

Pre-stressed Concrete Institute(PCI)

Post Tensioning Institute(PTI)

Steel Deck Institute(SDI)

The Masonry Society(TMS)

Wire Reinforcement Institute(WRI)

3.4.2 General Design Requirements

A. The construction documents shall contain all information required by the applicable codes and standards.

B. All structures, equipment, tanks, piping and pipe supports, cable tray, conduit, and supports shall be designed to resist the dead, live, test, operating, rain, wind and seismic loads applicable to the plant site.

3.4.3 Design shall be to approved applicable codes and standards and result in producing safe facilities.

3.4.4 Materials

Materials of construction shall be suitable for their intended purpose and longevity. Materials to be used shall be selected from the following standards or their European, South Korean, or Japanese equivalents. Only one set of standards shall be applied throughout the Facility.

A. Steel:

1. Wide Flange and WT Shapes: ASTM A992
2. Channel, Angle, M, MT, S and ST Shapes: ASTM A36, ASTM A992
3. HP Shapes: ASTM A572, Grade 50
4. Rectangular HSS Shapes: ASTM A1085, Fy=50 ksi min., ASTM A500, Grade B, Fy=46ksi min.
5. Round HSS Shapes: ASTM A1085, Fy=50 ksi min.,ASTM A500, Grade B, Fy=42ksi min.
6. Pipe: ASTM A53, Grade B, Fy=35 ksi min.
7. Threaded Rod: ASTM A36
8. Fasteners: High Strength Bolts: ASTM F3125, Grade A325, A490, Heavy Hex, Type 1; ASTM Grade F1852, F2280, Twist-Off, Type 1.
9. Common Bolts: ASTM A307, Grade A
10. Nuts: ASTM A563, Grade C, DH

11. Washers: ASTM A436, or ASTM A959 for direct tension indicators
12. Welded Headed Studs: ASTM A108
13. Anchor Rods: ASTM F1554, Grade 55 or 105
14. Stainless Steel: ASTM A276, Grade 304, 304L, 316, 316L
15. Raised pattern floor plate: ASTM A786
16. Plates and bars: ASTM A36, A572

B. Concrete:

Compressive strength as required for design and exposure per ACI 318.

Reinforcing Steel: ASTM A615, Grade 60, ASTM A706, Grade 60 (Welded reinforcing steel); ASTM A775 (Epoxy coated); ASTM A934 (Epoxy coated prefabricated bars); ASTM A955 (Stainless steel bars); ASTM A1055 (Zinc and Epoxy Dual Coated bars); ASTM A767 (Galvanized bars).

Welded Wire Fabric: ASTM A1064 (carbon steel, plain and deformed); ASTM A1022 (stainless steel plain and deformed); ASTM A884 (epoxy coated); ASTM A1060 (galvanized, plain and deformed).

Prestressing Steels: ASTM A416 (strand), A421 (strand), A722 (bars)

Aggregates: ASTM C33

Portland Cement: ASTM C150

Blended Hydraulic Cements: ASTM C595

Mixing water: ASTM C1602

Admixtures: ASTM C494

C. Masonry:

Hollow Load Bearing Concrete Masonry Units: ASTM C90

Mortar: ASTM C270

Grout: Portland Cement ASTM C150

Hydrated Lime: ASTM C207

Aggregate for Grout: ASTM C404

Joint Reinforcement: ASTM A951

3.4.5 Structural Loads

A. General:

Design loads for all enclosures, structures, structural components and equipment will be determined according to the criteria described below, except where the applicable code requires more severe loading conditions.

Loads shall be determined per the ICC International Building Code (IBC) (2009) and supplemented with ASCE 7 "Minimum Design Loads for Buildings and Other Structures" (2005).

Loads shall include all dead, live, soil, hydrostatic, flood, wind, rain, earthquake, and any special loads.

Where structural design must proceed without certified load data for vendor supplied equipment, estimated load data may be used and loads shall be increased to compensate for the lack of final certified design data. Catalog data or similar previous data for minor equipment may be used, but loads shall be increased by a minimum of 20% to cover anticipated variations and contingencies.

B. Design Loads:

1. Dead Loads - D

In lieu of actual available data, the following dead loads shall be used as minimum loads:

Roof with Metal Deck		
Metal Deck	5 psf	
Insulation	1 psf	
Light Fixtures and Sprinklers	3 psf	
Steel Framing (light)	10 psf	
Steel Bar Grating		
1 ¼" x 3/16"	12 psf	
All other types refer to catalog data		
Cast in place Concrete		
Formed	150 pcf	
On metal deck (inches above deck)		12.5 lb/in of thickness
Steel Floor Framing		
Light framing	10 psf	
Medium framing	18 psf	
Heavy framing	25 psf	
Partition Walls with normal weight concrete masonry units, ungrouted (psf of wall area)		
6"	37 psf	
8"	42 psf	
10"	47 psf	
12"	62 psf	
Siding and Girts	10 psf	

2. Live Loads - L

In design of floors and floor support structure, the following specified uniform floor design live loads are minimums. Where equipment is located on a floor, the structure shall be designed for the larger of the equipment weight (equipment fixed in place shall be considered as dead load and moveable equipment shall be considered as live load) or the displaced specified floor live load.

a. Ground floor

Heavy Traffic Aisles	400 psf
Light Traffic Zones	250 psf
Storage Areas	150 psf

As required for special construction and maintenance

b. Office floors 50 psf

c. Partitions 20 psf

d. Superstructure floors

Main platforms and floors	100 psf
Auxiliary platforms	70 psf
Concrete floors	100 psf
Steam Turbine floors	450 psf

2000 lb concentrated point load placed on an area 2.5' square, anywhere on a floor

e. Electrical Rooms 200 psf

f. Walkways 60 psf

g. Stairs, corridors and intermediate landings 100 psf

3. Roof Live Load – Lr 20 psf

4. Roof Rain Load – R Per IBC

Rainfall Intensity: Per United States Department of Agriculture, Natural Resources Conservation Services, Engineering Technical Note No.3, "Rainfall - Frequency and Design Rainfall Distribution for Selected Pacific Islands", Table 2-1D, 100 year, 1 hour rainfall: 4.7 inches.

5. Wind Loads - W

Per IBC 2009 Section 1609

Occupancy Category: IV

Basic wind speed: 175 mph (3 second gust, Exposure Category C)

Importance factor, I: 1.15

6. Earthquake Loads - E

   Per IBC 2009 Section 1613 and PPRBC Section RBC302.4.35

   Occupancy Category: IV

   Importance factor, I: 1.5

   Short Period Spectral Response Parameter Ss = 1.50

   1 Second Spectral Response Parameter S1 = 0.60

   Site Class shall be determined by geotechnical investigation

   Seismic Design Category shall be assigned and other parameters calculated upon determination of Site Class

7. Equipment Loads:

   1. Dead Load - D

      b. Refer to vendor equipment drawings

   2. Live Load - L

      c. Refer to vendor equipment drawings

   3. Abnormal Operating Load - L

      a. This condition occurs when equipment, hoppers, vessels, conveyors, etc., are filled to capacity or choked at outlets under abnormal operations.

      b. Consider vibration, impact, and temperature loads as required under abnormal operating conditions.

   4. Impact Loads - I

      d. Per IBC Chapter 16.

   5. Rotating and Reciprocating Equipment Loads - L

      a. 50% of the equipment weight

   6. Piping and Electrical Loads – D,L, W, E

      a. Hanger, guide and anchor loads for piping shall include dead, live, test, wind, and earthquake.

      b. Electrical cable trays, bus ducts, and conduit loads shall include dead, live, wind, seismic.

   7. Hydrostatic Test Loads - F

a. Hydrostatic test loads shall be considered for piping and equipment.

8. Vehicular Loads – D,L
   a. Dead Load: Per specific vehicle type.
   b. Live Load: Per specific vehicle type
   c. Fork lift, 6000lb capacity: Use 85% load distribution on front axle, unless noted otherwise.
   d. Truck Live Load: AASHTO HS20 44 load distribution.
   e.

9. Vibration Loads - L
   a. The frequencies of rotating machinery shall be defined by the vendor.
   b. Adequate stiffening, bracing shall be used to produce a satisfactory design for vibration using acceptable design analysis.
   c. Resonant vibration of the foundation shall be avoided. Foundation frequency shall differ from the machine, equipment operating frequency by a minimum of ± 20 percent.

10. Contingency Loads – D
    a. Non-accumulating point loads shall be used on steel beams to account for concentration of hanging loads to individual beams that exceed the area hanging load allowance. (2000 pounds minimum)

3.4.6 Steel Design

A. Codes

1. American Institute of Steel Construction:
   a. "Steel Construction Manual" (Thirteenth Edition).
   b. "Specification for Structural Steel Buildings, including Supplement No. 1, dated 2005" (AISC 360-05).
   c. "Seismic Provisions for Structural Steel Buildings" (AISC 341-05).
   d. "Specification for Structural Joints Using ASTM A325 or A490 Bolts", June 30, 2004.
   e. "Code of Standard Practice for Steel Buildings and Bridges" March 18, 2005 (AISC 303-05).
   f. "Detailing for Steel Construction", Third Edition (AISC 326-09).
2. Steel Deck Institute:

a. "Design Manual for Composite Decks, Form Decks and Roof Decks-No. 31".

B. Design Guidelines

a. The following guidelines will apply in general and will be superseded only by engineering and design considerations:

b. Elevated concrete floor slabs can be considered as providing horizontal stability by diaphragm action after setup and curing.

c. Grating floors shall not be considered as providing horizontal rigidity.

d. For deflection limits of structural members, see 2009 IBC Section 1604.3 and Table 1604.3.

e. Minimum Sizes:

f. Bracing size minimum - L 3 x 3 x 1/4

g. Wide Flange and Tee shapes and Angles: In areas of high corrosion the web and flange min thickness = 1/4"

3.4.7 Foundation Design

A. Codes and Standards

1. American Concrete Institute:

a. "Building Code Requirements for Structural Concrete" (ACI 318 08).

b. "Foundations for Dynamic Equipment" (ACI 351.3-R04)

c. "Details and Detailing of Concrete Reinforcement" (ACI 315).

d. "Manual of Engineering and Placing Drawings for Reinforced Concrete Structures" (ACI 315R 04).

e. "ACI Detailing Manual–2004, Publication SP-66

2. American Welding Society:

a. "Structural Welding Code-Reinforcing Steel" (AWS D1.4)

B. Design Guidelines

1. All foundation design shall be in accordance with the Project geotechnical report and ACI design codes. Deviations from the recommendations will be resolved with the geotechnical consultants. Analysis of foundations shall follow generally accepted practice. Vibration requirements shall be considered in the design of foundations for equipment where manufacture or working environment requires consideration of operation or human access.

C. Stability - Minimum factor of safety:

1. Overturning: 1.5

2. Stability against sliding: 1.5

3. Uplift 1.0

   (100 percent of the dead load shall be used for checking resistance to uplift. Reduced dead load is accounted for in the applicable load combinations in Chapter 16 of IBC 2009.)

4. Lateral forces shall be resisted in accordance with the geotechnical report.

D. Housekeeping Pads

1. Housekeeping pads shall be supplied under all equipment unless noted otherwise. Pads will be nominally 6" thick consisting of 4 ½" thick reinforced concrete and 1½" grout or as shown on drawings.

2. Electrical equipment pads will generally consist of 4½" thick reinforced concrete with leveling channels or as otherwise indicated on the drawings.

3.4.8 Structural Welding

A. Codes:

1. American Welding Society:

   a. "Structural Welding Code Steel" (AWS D1.1)

   b. "Structural Welding Code – Aluminum" (AWS D1.2)

   c. "Structural Welding Code Sheet Steel" (AWS D1.3)

   d. "Structural Welding Code Reinforcing Steel" (AWS D1.4)

   e. "Structural Welding Code Stainless Steel" (AWS D1.6)

   f. "Structural Welding Code – Seismic Supplement" (AWS D1.8)

3.4.9 Surface Preparation and Protective Coatings

A. Surface preparation:

1. Structural steel shapes: "Commercial Blast Cleaning" in accordance with SSPC-SP6.

2. Guardrail, ladders and grating: "Power Tool Cleaning" in accordance with SSPC-SP3 or "Commercial Blast Cleaning" in accordance with SSPC-SP6.

B. Painting:

1. All steel shall be shop primed. Finish color will be selected by Project Company and approved by GPA.

2. Guardrails, ladders and stairs shall be shop finish painted using "Safety Yellow" color for guardrails, handrails, self-closing gates and ladders.

3.5 Substation Requirements

3.5.1 General

A. Materials and equipment shall be furnished in a fully engineered and coordinated design package.

B. The substation shall be designed based on the most recent revision of the following codes and standards as of the date of approval of the design criteria unless otherwise noted:

NFPA 70 National Electrical Code

NFPA 70E National Electrical Safety Code

NFPA 780 Standard for the Installation of Lightning Protection Systems

NEMA C29.7 Wet Process Porcelain Insulators - High Voltage Line Post Type

ANSI C29.9 Wet Process Porcelain Insulators – Apparatus, Post Type

IEEE C37.010 IEEE Application Guide for AC High Voltage Circuit Breakers Rated on a Symmetrical Current Basis

IEEE C37.04 IEEE Standard Rating Structure for AC High-Voltage Circuit Breakers

IEEE C37.06 IEEE Standard for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis Preferred Ratings and Related Required Capabilities

IEEE C37.09 IEEE Standard Test Procedure for AC High-Voltage Circuit Breakers Rated on a Symmetrical Current Basis

IEEE C37.1 IEEE Standard for SCADA and Automation Systems

IEEE C37.11 IEEE Standard Requirements for Electrical Control for AC High Voltage Circuit Breakers Rated on a Symmetrical Current Basis

IEEE C37.12 IEEE Guide for Specifications of High-Voltage Circuit Breakers (over 1000 Volts)

ANSI C37.32 High Voltage Switches, Bus Supports and Accessories Schedule of Preferred Ratings, Construction Guidelines and Specifications

IEEE C37.90 IEEE Standard for Relays and Relay Systems Associated with Electric Power Apparatus

IEEE C37.90.1 IEEE Standard for Surge Withstand Capability (SWC) Tests for Relays and Relay Systems Associated with Electric Power Apparatus

IEEE C37.110 IEEE Guide for the Application of Current Transformers Used for Protective Relaying Purposes

IEEE C57.13 IEEE Standard Requirements for Instrument Transformers

IEEE C57.19.01 IEEE Standard Performance Characteristics and Dimensions for Outdoor Apparatus Bushings

IEEE C62.11 IEEE Standard for Metal-Oxide Surge Arrestors for AC Power Circuits (>1 kV)

IEEE C62.22 IEEE Guide for the Application of Metal-Oxide Surge Arrestors for Alternating-Current Systems

IEEE 605 IEEE Guide for Bus Design In Air Insulated Substations

IEEE 80 IEEE Guide for Safety in AC Substation Grounding

IEEE 81 IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System

NEMA SG4 Alternating Current High Voltage Circuit Breakers

NETA ATS Standard for Acceptance Testing Specifications for Electrical Power Equipment and Systems

Guam Power Authority Standard Specifications as applicable.

Project Company may design to equivalent approved European, Japanese or Korean standards. Project Company must demonstrate equivalency. Only one set of standards shall be applied thoughout the Facility.

3.5.2 Steel Structures

A. Dimensions:

1. As required to provide structural strength, maintain electrical clearances, and to suit equipment specified and provided.
2. Required clearances and spacings:
    a. Bus and line clearances: NEMA SG6, NESC.
    b. Phase spacing, outdoor switches, and fuses: NEMA SG6.
3. Shielding mast
    a. Type: Self-supporting, continuously tapered tubular; galvanized steel; with welded baseplate; anchor bolts; hand-hole at base; internal damping cable, or equivalent means.
4. Grounding: Provide 2 ground lugs on opposite sides of structures or equipment.

B. Grounding (above-grade):

1. Provide grounding for equipment mounted on structures.
2. Structure ground attachment locations:
3. Provide NEMA 2-hole attachment 12" (300 mm) above each baseplate.
4. Provide single-hole attachment every 4' (100 mm) (maximum) on vertical and horizontal members to structure mounted equipment.
    a. Ground conductor shall be stranded soft-drawn copper.

C. Ground clamps:

1. Provide bolted, NEMA 2-hole, bronze or copper clamp on each structure leg or column 12" (300 mm) above baseplate.
2. Provide bolted, bronze or copper clamp for support of ground cable on vertical and horizontal members.
3. Grounding operator's platforms: 4'-0" x 5'-0" galvanized steel grating. Furnish for each group-operated switch and circuit switcher.

3.5.3 Buses and Conductors

A. Rigid buses: Aluminum tubular bus conductor AA Schedule 40 pipe (standard pipe size), ASTM B429, 6063-T6 alloy.

B. Cable for jumper buses shall be in ASCR accordance with:

1. ASTM B232.

C. Core wire shall be galvanized steel wire, ASTM B245. 1350-H19 (EC) grade aluminum: ASTM B230.

D. Provide damping conductor for horizontal and vertical bus runs of aluminum bus sized appropriately according to the current revision of IEEE 605.

E. Bus design shall be in accordance with the current revision of IEEE 605. Standard tubular aluminum bus pipe sizes shall be used. Each tubing section of shall be provided with midspan drain holes and end caps. All construction of bus systems shall be welded.

F. Bus design shall take expansion into consideration as detailed in IEEE 605 due to ambient temperatures and energized heating. Expansion shall be accounted for, where required, by fixed and slide fit bus clamps or expansion fittings. Expansion fittings shall be used for connections at major equipment.

G. Project Company shall weld all aluminum bus connections.

H. Damping conductor shall be ACSR.

I. Identification tags:

1. Furnish porcelain enamel phase identification tags with black letters on white background mounted to structures at ends and midway of each bus, at each incoming/outgoing line position, over each PCB position, and at each VT or CCVT.
2. Furnish one tag for each switch and PCB with designations provided later by Owner.
3. Switch identification tags shall be located on steel next to switch operator.

3.5.4 Grounding

A. All structures shall have two connections to ground except single phase devices and bus supports shall have one connection.

B. Ground pads shall be provided for two 2-hole NEMA type compression connectors with 1 3/4" bolt centers.

C. Below grade ground grid including the copper rods and copper cables and short leads to the above ground equipment shall be provided by the Project Company. Project Company shall provide above grade cables, cable supports and NEMA two hole full compression (indent) type connectors for all structures and equipment located within the substation including, but not limited to bus duct(s), instrument transformers, breakers, switches, lightning arresters and grounding mats. Project Company shall furnish all above-grade ground connectors for all galvanized steel fencing, including but not limited to gates and barbed wire. Grounding connectors and supports shall be tin-plated.

D. The switchyard ground grid system shall be designed in accordance with current revisions of IEEE Standards 665, 80 and 81. An approved program such as CDEGS shall be used for the ground grid design and analysis. Measured step and touch potential shall be identified as well allowable step and touch potentials as specified by IEEE 80. Ground grid model and analysis shall be submitted to GPA and must include all pipes, conductors, water lines etc within the substation and power plant area.

E. The substation fence shall be grounded in accordance with IEEE Standards 665 and 80.

F. All above and below grade grounding conductors shall be annealed, bare, stranded copper wire conforming to ASTM Specification B8. Conductor size shall not be less than the minimum requirements of NFPA 70.

G. Ground lugs and connectors shall be of bronze or copper, and all hardware such as bolts, washers, and nuts shall be of Durium, Everdur, or silicon bronze. Ground lugs shall be Burndy or Owner approved equal.

H. Grounding system shall provide for permanent grounding of all frames, housings, and support steel of all electrical equipment, panels, lighting protective apparatus, cabinets, wiring devices, electrical metallic raceways, lighting fixtures and boxes.

I. All conduit runs shall be grounded at enclosures of electrical distribution or control equipment at which they originate, and shall provide a conductive path, in compliance with the NEC for grounding of enclosures of all locally mounted electrical equipment.

3.5.5 Surge Arrestors

A. Type: Metal-oxide station class.

B. Standard: ANSI C62.11.

3.5.6 Insulators

A. Conform to NEMA SG6, NEMA C29.7.

B. Color: ANS No.70.

C. Insulators shall be porcelain type. Insulator strength to be determined during detailed design, rated for the required impulse withstand voltage, voltage level, physical dimensions and strength class (compression, cantilever, torsion and tension). All insulators shall have galvanized malleable iron or galvanized forged steel hardware.

3.5.7 Disconnect Switches

A. The disconnect switches shall be three-pole, single-throw, gang-operated, air break, manually operated, rated for outdoor service on a 60 Hz, 3-phase, system. The operating mechanism shall be provided as a factor complete assembly including all necessary shafts, interconnecting rods, linkages, supports and accessories.

B. High pressure type contacts with silver to silver contact surfaces to be used. The contacts to have a wiping and cleaning motion when opened and closed. Switch design to all for the accurate positioning of switch blade tips in the jaw contacts.

C. Disconnect switch operating mechanisms shall be furnished with noncorrosive, greaseless, roller or ball type main bearings. A flexible braided grounding apparatus shall be provided on the operating rod, above the operating crank. The grounding device shall be rated to carry the same short time and momentary currents as the disconnecting switch. Operating mechanisms and linkages to be designed so all blades of the switch will be in the fully opened or completely closed positions when the operating crank is in the fully rotated position. Operating mechanisms shall be provided complete with all fittings required for total switch operation.

D. Threaded clevis type fittings to be provided on all interphase type control pipes and connecting links between gang-operated switch and switch crank arm.

E. Operating mechanisms shall be designed to allow padlocking in either the fully open or fully closed position with one inch shackle clearance.

F. All manual operating type mechanisms shall be marked to indicate the open and closed switch directions.

G. Two separate normally open "a" and two normally closed "b" auxiliary contacts shall be provided for each disconnect switch for remote indication of the open and closed position of the switches.

H. Insulators shall conform to ANSI C29.9, high-voltage post-type apparatus insulators made of wet-process porcelain and used in the transmission and distribution of electrical energy.

I. Operating mechanism:

1. Heavy-duty, gear-operated complete with accessories.
2. Size to eliminate twisting or sag.
3. Switch poles shall be fully coordinated and field adjustable per pole and for alignment and 3-phase timing coordination.
4. Switch contacts to be self-wiping, field-adjustable and have field-adjustable contact pressure.
5. Standards: NEMA SG6 and ANSI C37.32.
6. Longitudinal switches (parallel to switch blades) shall be capable of resisting, without injury or failure, force listed in ANSI C37.32, Table 2.

3.5.8 Coupling Capacitor Voltage Transformers

A. Type: Base-mounted, high-capacitance, coupling capacitor voltage transformer with dual main windings

B. Terminals: Polarity and terminals: ANSI C57.13. Clearly indicate by permanent markings not easily obliterated.

C. Short circuit capability: Capable of withstanding for 1 second mechanical and thermal stresses resulting from short-circuit on secondary terminals with full voltage maintained in primary terminals in accordance with ANSI C57.13 and C93.2.

D. Other ratings and features: NEMA SG 2.

E. Accessories when required:

1. Ferroresonance-suppressing filter. Device shall pass ANSI C93 Ferroresonance test.

2. Potential grounding switch and terminal box for secondary voltage connections with conduit entrance plugs.

3. Provide corona suppression rings if required.

4. Provide lifting hooks or eyes for lifting filled unit by overhead crane.

5. Potential device: Factory calibrated.

F. Transformer oil:

1. Oil furnished with transformer shall be Type 1 mineral insulating oil in accordance with current ASTM standards.

G. Certify that oil being supplied is classified as noncontaminated by PCBs. Standard: ANSI C93.1.

3.5.9 Circuit Breakers Connections

A. Project Company shall provide the necessary bus connection adapters to bolt to the terminal connectors provided in the circuit breaker.

B. Project Company shall assemble all component parts that were initially disassembled for shipment in accordance with the manufacturer's instructions.

3.5.10 Quality Assurance

A. Regulatory requirements: Design, fabricate, and test equipment in accordance with applicable standards of ANSI, NEMA, NFPA 70, IEEE, and shall be in accordance with applicable requirements of OSHA.

3.5.11 Environmental Requirements

A. Design shall comply with any unusual service conditions as outlined in C37.010 and ASTM D1472.

3.5.12 System Description

A. Outdoor, 3-pole, single-throw, SF6 gas-filled, single-tank or 3-tank, frame-mounted on common base.

3.5.13 Control Wiring

A. Wiring:

1. Provide control wiring in accordance with ANSI C37.11 as a minimum.
2. Control voltage ranges for closing and tripping shall be in accordance with ANSI C37.06.

3.5.14 Functional Components

A. Operating mechanism: Pneumatic, hydraulic, or motor-charged spring with features and performance in accordance with NEMA SG4, Section 3.

B. Bushings:

1. Type: Porcelain, in accordance with IEEE C57.19.01.
2. Conform to general requirements of, and test in accordance with IEEE C57.19.00.
3. Use manufacturer's standard dimensions and characteristics. Electrical characteristics shall comply with IEEE C57.19.01.
4. Pressure components and systems:
5. Comply with NEMA SG4, Section 4.
6. Welds on breaker tank assembly shall meet AWS D1.1 Section 5.30.

3.5.15 Current Transformers

A. Accuracy classification, characteristics, and performance data in accordance with IEEE C57.13 and NEMA SG4. . At a minimum, multi-ratio Class 400 current transformers shall be specified.

3.5.16 Source Quality Control

A. Each circuit breaker furnished shall be completely assembled and tested at manufacturer's facility.

B. Perform production tests in accordance with NEMA SG4 and ANSI/IEEE C37.09.

C. Operating mechanisms shall be tested for proper operating speed in accordance with ANSI C37.09.

D. Components shall be given dielectric test if applicable, in accordance with ANSI/IEEE C37.09.

E. Furnish certification each type, style, and model bushing has passed test requirements of IEEE C57.19.01.

F. Furnish certification bushing-type current transformers have been tested and meet requirements of ANSI C57.13 for continuous thermal current, thermal short-time and mechanical short-time ratings, and applied potential.

3.5.17 Field Quality Control

A. Perform acceptance test as described in NETA Section 7.6.2 – Circuit Breakers.

3.5.18 Lighting

A. The lighting system shall consist of light emitting diode (LED) type fixtures. A two (2) foot candles of illumination level shall be provided in substation yard area for up lighting of the structures and ground level light. All exterior lights shall be photocell controlled and provided with control switches for manual or automatic operation.

B. All fixtures shall be completely wired in accordance with the latest requirements of the National Electrical Code. All fixtures shall bear the Underwriters' label of approval.

C. Project Company shall furnish and install all associated cables and raceways for the substation lighting.

3.5.19 Lightning Protection

A. Project Company shall provide lightning protection system for the substation against direct lightning strokes. The lightning protection system shall consist of suitable lightning masts installed on concrete footings or on substation dead-end structures to provide zones of protection in accordance with NFPA 780.

3.5.20 Relaying Protection and Control Systems

A. Substation protective relaying design to interface with existing Guam Power Authority substation, generation and transmission line protection and control relaying systems.

B. Substation relaying schemes to include but not limited to line current differential, bus differential, breaker failure, reclosing, synchronizing, distance, overcurrent and instantaneous overcurrent protection types. Vendor shall be responsible for the design, supply and installation of compatible relaying at adjacent interconnected stations on the GPA system. Step-distance relaying without communications assistance is not acceptable. Fault clearing of transmission lines must be accomplished within 5 cycles, inclusive of far end faults. Primary and backup relays shall be provided.

C. Guam Power Authority has standardized on utilizing Schweitzer Engineering Laboratories, Inc. (SEL) protective relays.

3.5.21 Communication Systems

A. Substation communications design to interface and be compatible with existing Guam Power Authority communications and SCADA systems. Communications systems shall meet all NERC CIPS security requirements.

B. Open/closed contacts to be designed to provide status to SCADA system for the following equipment:

C. Circuit breakers

D. Disconnect switches

E. The minimum data required to measure is the following: watts/vars, voltage, kilowatt-hours, power factor, harmonic distortion and historical data logging with minimum and maximum measured levels.

F. Communications mediums to include but not limited to fiber optics and microwave types.

3.5.22 Metering

Add metering requirements including identifying delivery point, the place where meters will be installed, whether the main and backup meters are required, how the data will be transferred to GPA, etc.

3.6 Transmission Requirements

3.6.1 General

A. This section covers the requirements for the transmission interconnection line between Facility's switchyard and the GPA transmission system interconnection at the 115 kV Harmon Substation. Three 115 kV transmission lines are required to connect the new Power Plant to Harmon Substation. Two of the transmission lines will connect to the Harmon 115 kV Substation [H501 (existing) and H503 (new breaker and bus extension), while the third transmission line will intercept the existing Harmon-Tamuning 115 kV transmission line and utilize the existing H501 breaker to connect to the Harmon 115 kV Substation.

B. The transmission interconnection line shall be designed based on the most recent revision of the following codes and standards as of the Bid Date unless otherwise noted:

1. National Electrical Safety Code (NESC-C2)
2. Rural Utilities Service Design Manual (RUS Bulletin 1724E-200)
3. American National Institute (ANSI)
4. National Electrical Manufacturers Association (NEMA)
5. American Society for Testing and Material (ASTM)
6. American Institute of Steel Construction (AISC)
7. American Society of Civil Engineers (ASCE)
8. Structural Engineering Institute (SEI)
9. Institute of Electrical and Electronics Engineers (IEEE)
10. International Electrotechnical Commission (IEC)

11. American Concrete Institute (ACI)
12. Guam Power Authority (GPA)

3.6.2 Design Criteria

A. Project Company shall develop a detailed design criteria memorandum which shall provide the details and design guidance required to perform detailed transmission facility design. Design criteria memorandum shall comply with the latest version of IEEE 1724.

B. Design criteria shall be submitted by Project Company to GPA for review and approval.

C. Purpose of design criteria is as follows:

1. Description of design practices or procedures to be utilized.
2. Use of consistent and common material or types of material and material specifications.
3. Guidelines for consistent approach to design and engineering.
4. Transmission design criteria may be incorporated into larger design criteria documents but should exist as a stand-alone section.
5. Detailed design of transmission facilities shall not deviate from design criteria without prior approval of GPA.

3.6.3 Transmission Route

A. Transmission line route between the GPA procured property described in Section 5.0 Site Data and the Harmon substation shall be selected by Project Company and shall be reviewed and approved by GPA prior to any additional work being performed.

B. Route shall be selected based upon the following criteria:

1. Avoidance of sensitive habitats.
2. Avoidance of potential terrain hazards with the goal of increasing reliability and security.
3. Avoidance of environmentally sensitive areas.
4. Utilizing most direct route with goal of increasing reliability and security.

C. Detailed surveys shall be carried out on the transmission line route selected by Project Company and approved by GPA to support the design and identify the right-of-way (ROW). ROW shall be selected to accommodate insulator swing, structure deflection, standard electrical clearance and requirements for electrostatic and electromagnetic field strengths.

D. For Project Company offering a site other than the one described in Section 5.0 Site Data; the Project Company will be responsible for Right of Way from proposed alternate site to Harmon Substation.

3.6.4 Geotechnical Investigation

A. Project Company shall perform geotechnical investigation along the transmission line route. Geotechnical investigation shall include a detailed geotechnical report properly reviewed and affixed with a Guam registered professional engineer stamp.

B. Geotechnical investigation shall include sufficient soil borings and soils analysis to meet or exceed the following requirements:

C. Quantity of soil borings shall not be less than four (4) for line lengths of 1.5 miles or less, with at least two (2) soil borings for each additional mile of transmission centerline length.

D. All soil borings will also include soil resistivity measurements made in accordance with standard testing procedures and equipment.

E. Soil boring at each location shall be of appropriate depth required for thorough soil analysis and accurate design recommendations. Appropriate depth is assumed to be the greater of:

1. 1.2 times the anticipated depth of foundation.
2. The anticipated depth of foundation plus two times the anticipated foundation diameter.
3. 30 feet.

F. Soil boring shall be taken close to each deadend or large angle structure location (within 500 feet). These soil borings count towards the minimum requirement of soil boring quantities.

G. Soil borings shall be taken such that there is no transmission centerline length of greater than 2640 feet between adjacent soil borings.

3.6.5 Transmission Structures

A. Transmission pole structures (single or multi-pole tubular steel structures) shall be designed in accordance with the most current version of ASCE/SEI 48 – Design of Steel Transmission Pole Structures.

B. Transmission lattice structures shall be designed in accordance with the most current version of ASCE 10 - Design of Latticed Steel Transmission Structures.

C. Transmission structures shall be designed at a minimum to withstand the following weather conditions:

1. NESC 250B Warm Island District – Initial Wire Condition
2. NESC 250C Extreme Wind with a 3-sec gust wind speed of 200 mph at 33 ft above ground – Initial Wire Condition
3. Construction Load(s) – Initial Wire Condition
4. Uplift at 65°F – Initial Wire Condition

5. Camber at 80°F – Final Wire Condition
6. NESC Blowout at 6 psf wind and 80°F – Final Wire Condition
7. Stringing at 4 psf wind at 80°F – Initial Wire Condition
8. Maximum Operating Temperature at 194°F – Final Wire Condition

D. Deadend transmission structures shall be designed for a broken conductor condition. All phases and shield wire on the ahead span or back span, whichever results in the largest stresses in the structure. Initial wire condition shall be considered for this condition.

E. Transmission structure types, locations, and design shall be selected to minimize long term outage risk from natural hazards (wind, rain, storms, marine conditions, earthquakes, etc.)

F. Foundation design shall be appropriate for the geotechnical conditions and shall be based on recommendations of the geotechnical engineer. Foundation design loading cases shall be included as part of design criteria.

G. Transmission structure design will use a preferred single pole self-supporting structure type. Additional structure types may be considered and approved by GPA based on application, location, permitting and ROW issues.

H. Depths and diameters of all foundation types shall be calculated using industry standard methods. Calculations may be formulated utilizing industry standard software.

I. Foundation deflection and rotation limits shall be as follows for single pole structures:

1. 3-inch ground line deflection (1.5 inch non-recoverable)
2. 2° ground line rotation (1° non-recoverable).

3.6.6 Conductor and Overhead Ground Wires (OHGW)

A. Phase conductor shall be of type and size as is consistent with that used on existing GPA systems. Conductor selection shall be reviewed with GPA prior to procurement.

B. Current conductor types in use by GPA:

1. 336.4/Tulip AAC 19
2. 927.2 Greeley AAAC37

C. Maximum operating temperature of conductor will be limited to 194°F (90°C) in order to prolong the design life of conductor.

D. Overhead ground wire (OHGW) shall be utilized as transmission shielding wire, and shall be installed on full length of the line.

E. OHGW shall be sized to ensure adequate protection based on fault current.

F. Conductor and OHGW installation work shall be done in accordance with manufacturer's recommendations and IEEE 524 'Guide to the Installation of Overhead Transmission Line Conductors'.

G. Ground wire size will be determined through grounding study and fault analysis.

H. Transmission line shall be designed such that galloping ellipses do not overlap.

3.6.7 Electrical

A. Transmission facility shall be designed to accommodate maximum generation outlet loading levels.

B. Transmission facility voltage shall be 115kV.

C. Transmission facility structures shall be designed to meet a grounding resistance of 5 ohms or less.

D. All phase-to-phase and phase-to-ground clearance, including the mid-span ground clearance, shall be designed according to NESC-C2.

E. Mid-span ground clearance shall meet the standard requirements when the conductor is operating at maximum design temperature and maximum sag conditions.

F. All vertical clearances shall assume, as a minimum, that areas under the line are accessible to vehicles and equipment as specified in NESC-C2.

G. Project Company shall assume a tolerance of +5'/-0" shall be used for vertical clearances.

H. Vegetation clearing under the transmission line shall adhere to the following guidelines:

1. 'Phase Zone' is defined as the area between phase conductors on either side of structure plus five (5) feet on outside of either side.

2. Vegetation directly under 'phase zone' with potential to grow high enough to not meet NESC clearances shall be removed in a manner where re-growth is not practical.

3. Vegetation outside of 'phase zone' shall be removed if potential growth height exceeds a height level determined by contact at ground (0' above ground) at spot vertically down from outside edge of 'phase zone' and then extending outward at a 45° angle from outside edge of 'phase zone'.

I. Lightning performance shall have a target performance level of two (2) outages per year for the length of the entire new transmission line.

J. Insulation levels shall be sufficient for continuous operation at 1.1 per unit voltage.

3.7 Architectural Requirements

3.7.1 Building Codes

A. All buildings and structures shall be designed to meet all applicable building, accessibility, and life safety code requirements.

3.7.2 Building Requirements

A. General

1. All buildings designs are to be approved by GPA. In general, building materials and installation of architectural systems or components shall be as follows:

   a. All buildings shall be enclosed and sealed weathertight.

   b. All buildings shall be designed to accommodate the planned level of staffing required to operate the facility. Vehicle parking shall be adequate for the planned level of staffing.

   c. A guard house shall be provided at each entrance to the facility.

   d. Sound attenuation shall be provided for sound absorption as required on walls enclosing equipment.

   e. Interior partitions, including fire-rated partitions, shall be non-load bearing.

   f. Interior finishes shall be compatible with the intended operational use of each building area.

   g. In shop, warehouse and maintenance areas, electrical generating equipment areas, and out buildings, the flooring shall be sealed concrete.

   h. Suspended acoustical ceiling systems shall be used in offices and other finished spaces. Shops, warehouse and other unfinished spaces shall be exposed overhead construction which shall be painted. Moisture resistant materials shall be used in toilet rooms and shower rooms.

   i. Exterior personnel doors shall be heavy duty galvanized hollow metal doors with fully welded galvanized hollow metal door frames.

   j. Interior personnel doors shall be full flush painted hollow metal doors with painted hollow metal door frames.

   k. Overhead service doors shall be overhead coiling type of galvanized steel, factory assembled, with factory painted slats and motor operators with manual override operation feature with weather seals and wind locks.

   l. Fire exits shall be provided at outside walls as required by code. Exit signs shall be of opening and rating for door, frame, and hardware. Doors shall conform to hollow metal door requirements and have fillers adequate to meet fire rating.

   m. Commercial grade standard heavy-duty butts, locksets, latches, panic hardware, closers, thresholds and other miscellaneous hardware items shall be provided as appropriate to the function of the doors. Hinges with non-removable pins and weather seals shall be used for exterior doors. All locks shall have removable cores.

n. The Administration building shall have pass card entry hardware on exterior doors and interior security doors. The interior security doors shall control open public access to the building during meetings.

o. Buildings and building openings (windows, doors) shall be designed to resist airborne debris impact under high wind (typhoon) conditions.

p. Interior windows shall be fixed hollow metal frames with double pane glazing for sound deadening.

q. Signs and graphic designs for identification and directions shall be incorporated into the interior finishes of each area. All exit signs shall follow the applicable building code. All signage shall comply with ADA requirements.

r. Fire extinguishers shall be multi-purpose, surface mounted type. Fire extinguishers shall be provided at locations in accordance with the applicable building and fire codes.

s. Each office, conference room or work area shall be provided with wiring infrastructure including wall mounted jacks for both data and voice communications. Voice communications shall utilize Voice over Internet Protocol (VOIP) technology. The wiring infrastructure shall be extended back to the central communications switching room located in the Administration building. The Project Company shall be responsible for installation of network switching and computer equipment in this room and for data connections to the outside world.

The communications network shall include as a minimum the Administration Building, warehouse, shop, and maintenance areas or building(s), the power generation building, and the entrance guard house(s). Provisions shall be included for integration of the communications network with the plant paging system. Fiber optic cabling shall be utilized for network wiring between buildings.

B. Power Generation Building

1. The Project Company shall provide dedicated space required for operation of the plant including, but not limited to, an electrical generating equipment (prime mover) area, a control room, a control system equipment storage room, and a low voltage electrical room. The final size and design of the building shall be based on the Project Company's layout of all equipment and equipment foundations that are housed within the building. The layout shall account for adequate clearance requirements for the removal and/or normal maintenance of all equipment contained within the building.

2. The main plant control room, control system equipment room, and SCADA control room shall be located on a 12-inch raised floor.

C. Administration Building

1. The Project Company shall provide reasonable administrative office space for support of the plant.

2. The Administration Building shall be designed in accordance with Americans with Disabilities Act (ADA) regulations.
3. The Administration Building shall include as a minimum the following rooms:
    a. Project managers office
    b. Operations superintendent's office.
    c. Maintenance superintendent's office.
    d. Visitor/spare office.
    e. Entrance lobby/waiting area.
    f. Office supply/storage room.
    g. Conference room.
    h. Reference library/file storage room.
    i. Break room with kitchenette.
    j. Men's restroom.
    k. Women's restroom.
    l. Janitors closet.
    m. Mechanical equipment room.
    n. Electrical equipment room.
    o. Communications/telephone equipment closet.
    p. Printer/Plotter room.

D. Warehouse / Maintenance Building(s)

1. The Project Company shall provide dedicated space required for operations and maintenance of the plant including, but not limited to, a warehouse, mechanical maintenance area and office, electrical maintenance area and office, instrumentation and controls shop and office, welding shop, tool crib, Unisex toilet room, janitors closet, and warehouse supervisor/receiving office.

E. Building Aesthetics

1. All buildings shall utilize an architectural style, colors, and finishes that are compatible with Guam's island heritage. Exterior colors and finishes shall be selected to blend in with the surrounding countryside and approved by GPA.
2. All exterior and interior exposed surfaces, except factory finished items, shall be painted. Environmentally-friendly products shall be used.
3. Low rise construction shall be used for all buildings except where equipment or operational requirements require structures of greater height.

F. Visitors Learning Center

Project Company will negotiate in good faith to develop and build a Visitor/Learning Center just outside the secured access to the plant and

construct/install the required communications systems and infrastructure. The Visitor/Learning Center will provide virtual plant tours and general energy conversion information. GPA will take video/photos of the plant for use in the visitor center and on a website. GPA and Project Company will negotiate details of providing virtual access while still maintaining plant security. The intent is to show how a power plant works to students, customers and the public. IPP will coordinate with GPA on the design details, manufacturers, wired or wireless access, etc. to create programs, models or fact sheets on the power plant and the technology. GPA shall be responsible for the cost.

4 QUALITY ASSURANCE, INSPECTION, COMMISSIONING, AND TESTING

4.1 Quality Assurance

4.1.1 General Quality Requirements

A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of standard, except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current on date for receiving bids, except where a specific date is established by code.

C. When required by individual Specifications Section, obtain copy of standard. Maintain copy at job site during submittals, planning, and progress of specific work, until Completion.

D. Abbreviations used in Drawings and Specifications are as specified in ANSI Y1.1 and IEEE 260.

4.1.2 Industry Standards

A. Welding

1. Welding shall be performed by qualified welding operators using procedures which have been qualified in accordance with applicable codes and standards, including but not limited to:

   a. ASME B31 Code for Pressure Piping – Power Piping

   b. ASME Boiler and Pressure Vessel Code.

   c. AWS D1.1, AWS D1.2, AWS D1.3, AWS D1.4, AWS D1.6, AWS D1.8 Structural Welding Codes.

B. Welding Procedure Qualification

1. Seller, Subcontractor, or fabricator performing welding under jurisdiction of referenced codes shall be responsible for obtaining and qualifying welding procedures. Structural welding procedures conforming to AWS D1.1 are prequalified as defined in AWS D1.1, Clause 3. Project Company shall maintain records certifying successful completion of procedure qualification tests.

C. Performance Qualification

1. Seller, Subcontractor, or fabricator performing welding under jurisdiction of referenced codes shall be responsible for testing and qualifying its welding operators in accordance with applicable codes, using qualified procedures.

2. Welding operator's qualification as specified in code shall be considered as remaining in effect indefinitely unless welder has not engaged in given process of welding for which welding operator is qualified for period of 6 months.

D. Submittals

1. Except for procedures exempted by AWS D1.1, Clause 3, maintain copies of each welding procedure with certificate demonstrating successful qualification of welding procedures for each welding process performed at Sellers facilities: AWS D1.1 - Form N-1, or ASME QW-483.

2. Prior to execution of any manual shop welding, maintain copies of welder qualification form for each individual performing welding: AWS D1.1 Form N-4 or ASME QW-484.

4.2 Testing

4.2.1 General

A. Scope of Tests

1. This section includes quality assurance testing to be completed during construction, during manufacture of equipment, and plant performance tests on completion of construction.

2. After system or equipment necessary for operation is in operating condition, the Project Company shall supervise operation of the plant for a period sufficient to assure the proper functioning, and make necessary observations, investigations, and adjustment.

3. The Project Company is responsible for coordination of testing with local, state, and federal environmental authorities as required.

4. The tests mentioned in this section are not intended to form a complete list of the numerous tests which the Project Company would normally perform to ensure equipment quality and Facility reliability.

5. The Project Company shall be responsible for the submission of test certificates and reports to GPA for all the tests described here.

6. GPA or its representatives shall witness tests at the manufacturer's works as agreed with the Project Company. All testing on Site shall be witnessed by GPA or its representative.

7. The Project Company shall notify GPA in writing when tests are to be performed. Unless otherwise specified in the ECA, twenty one (21) days notice shall be given for tests in manufacturer's works, and ten (10) days notice shall be given for tests to be performed on Site.

4.2.2 Tests During Construction and Erection

Testing and inspections during construction shall comply with the requirements of the International Building Code. The Project Company shall satisfy GPA that the construction materials are of the specified quality and that the design figures are being followed. GPA must also be satisfied that electrical and mechanical equipment after erection are still up to the required standard and have not suffered because of storage, handling, construction, or erection.

4.2.3 During Manufacture

A. Equipment Factory Acceptance Tests

1. The Project Company shall be responsible for ensuring the quality of products to be installed in the plant. Reports of factory acceptance tests shall be provided to GPA within thirty (30) days of completion of the test.

4.2.4 Tests During Construction and Erection

A. Compaction

1. Conduct compaction testing in accordance with ASTM D1556 and D1557 for each type and source of material.

B. Welding

1. Welding materials and procedures for piping shall conform to ASME B31.1 and applicable state regulations.

2. Employ certified welders in accordance with Section IX ASME Boiler and Pressure Vessel Code and AWS D1.1.

3. Piping connected to pressure parts under jurisdiction of "Boiler and Pressure Vessel Code": ASME "Boiler and Pressure Vessel Codes."

4. Piping not covered by "Boiler and Pressure Vessel Code": ASME B31.1, "Code for Pressure Piping."

5. The Project Company shall maintain copies for each person, by name, assigned to do field welding of materials installed under this Agreement for review by GPA. Show on certificates that each person has passed tests specified by AWS.

C. Electrical

1. The following electrical systems and components shall be tested in accordance with the standards listed in section 3.2.1:
    1. Electrical ground grid
    2. Electric generator(s) and ancillaries (automatic voltage regulator, excitation system, generator governor, surge capacitors and MOV's, etc.)
    3. Electrical switchgear, motor control centers, switchboards and panel boards
    4. All medium voltage cable and buses
    5. All low voltage cable and buses
    6. Protective relay system shall be designed and set in accordance with the latest Standards. GPA has standardized on utilizing Schweitzer Engineering Laboratories, Inc. protective relays.
        a. Plant Control System
        b. All control system hardware
        c. All control system software

4.2.5 Tests on Completion

A. General

On completion of construction, the Project Company shall undertake a series of tests to demonstrate that the Facility operational capability, performance and reliability are within the limits agreed in the ECA. These tests shall be witnessed by GPA, and as a minimum requirement these tests shall include:

a. Functional Tests
b. Energy Conversion Agreement Tests
c. Performance and Facility Reliability Tests

B. Test Procedures

1. The Project Company shall develop specific test procedures for each test, and shall be provided to GPA for review at least one hundred twenty (120) days prior to the start of the tests.
2. The test procedures shall include, but not be limited to, the following information:
    a. Administrative Procedures
    b. Test Equipment
    c. Test Instrumentation to be installed
    d. Station Instrumentation to be used
    e. Test Methods
    f. Test Standards to be followed

g. Sample Data Sheets

h. Test Calculation Methods

i. Instrument Calibration Sheets

j. Pre-test Uncertainty Calculation

C. Test Results Calculations

1. The Project Company shall be responsible for providing the final test calculations. The test results calculations shall follow the methods as described in the test procedures.

D. Test Measurement Uncertainty

1. The Project Company shall be responsible for pre-test and post-test uncertainty analysis to verify the quality of the test performed. The uncertainty analysis is not to be applied as a commercial test tolerance, allowance, or margin to the test results. No tolerances in calculating Facility performance test results will be permitted for measurement uncertainty.

E. Test Reports

1. The Project Company shall submit to GPA a Preliminary Test Report after completion of each test. Within five (5) business days, GPA shall state whether it concurs, or disputes the results of the test. If GPA disputes the results, it shall provide in detail the reasons for dispute. The test reports shall include the test results, calculations, uncertainty analysis results, and shall also include as an appendices the raw test data, and test procedure that was followed.

2. Within fifteen (15) business days after receiving the fuel analysis data, the Project Company shall submit a Final Test Report, or a notification of a retest in the event of a dispute.

F. Functional Tests

1. The Project Company shall perform the following tests:

a. Test and start-up of auxiliaries

b. Control systems tests

c. Synchronizing checks

d. Electrical Protective devices tests

e. Mechanical protective device tests

f. Stability tests – AVR, Stable minimum load, minimum load while in compliance with emissions, full load rejection test and step load change rejection tests

g. Automatic startup and loading time tests for hot and cold starts

G. Environmental Compliance Tests

1. The environmental compliance test including the air emission, effluent water quality, noise level, and other applicable tests will be performed to demonstrate compliance with the requirements of environmental permits and shall be completed in accordance with the applicable EPA test procedures.
2. For the Fossil Fuel Fired Component, the Project Company shall test the plant for emissions on both ULSD and Natural Gas, when it becomes available, to ensure that it meets the air permit requirements.

H. Heat Rate

The Heat Rate and some other test requirements below are only applicable to the Facilities including Fossil Fuel Fired Component. The specification will be adjusted based on the Facility configuration and technology proposed by the Project Company. For the Facilities including Fossil Fuel Fired Component, the Heat Rate and Initial Dependable Capacity Tests shall be conducted on both ULSD and Natural Gas, when it becomes available.

1. A Heat Rate to establish benchmark for the end of term tests and Initial Dependable Capacity Test shall be completed prior to Commercial Operation.
2. The tests shall be done in accordance with the ASME PTC-46 Performance Test Code on Overall Plant Performance, as well as the applicable ASME Performance Test Code relevant to the generation technology.
3. The Project Company shall demonstrate the ability of the plant to achieve the Contracted Facility Capacity established in the ECA and provide to GPA information about the Facility Heat Rate. The performance test results shall be corrected to Site Reference Conditions using the correction curves included in the approved test procedure using the calculation methods provided in such test procedure. Tested Dependable Capacity and Heat Rate corrections shall be allowed for:

   a. Ambient dry bulb temperature

   b. Ambient relative humidity

   c. Barometric Pressure

   d. Generator Power Factor

   e. C/H ratio of the fuel

   f. Wet bulb temperature

   g. GPA shall have the right to request that the Facility's heat rate be tested concurrently with any Dependable Capacity Test and Project Company shall be obligated to comply with such request.

4. Plant capacity shall be tested at normal maximum capacity without exceeding any manufacturers limitations. The plant must comply with all local, state, and federal environmental permits throughout the duration of the tests. The uncorrected net power output of the plant, in kWh, will be measured at the Delivery Point.

5. The initial Dependable Capacity (DC) Test shall be undertaken during the Reliability Test, and shall form the basis of the declared Dependable Capacity as defined in the ECA.

6. The duration of the DC Test shall be no less than 6 hours, during which time the plant will operate at its normal Dependable Capacity while supplying the normal station auxiliary power demand. The Facility DC in MW will be determined by dividing the sent out power in MWh (as determined by the revenue meter readings at the start and end of the test and corrected to Site Reference Conditions) by the test duration period in hours.

7. All costs for performance tests will be borne by the Project Company.

8. The Project Company shall perform testing to ensure that the Facility meets functional requirements including Dependable Capacity for Natural Gas and benchmark heat rate test for end of term tests.

H. Startup Duration Test

1. The Project Company will determine the startup duration, from initiation to full Plant Net Capacity, both cold and warm starts.

I. Reliability Test

1. The Project Company shall conduct a Reliability Test for a continuous seven (7) day (168 hour) test period. During this time the Facility shall operate continuously at Dependable Capacity for at least 72 hours, and for the rest of the period at any other load as may be required by GPA.

2. The equipment is considered available when the generator breaker is closed and the generator is producing positive net power output. Should the equipment become unavailable due to fault of the Project Company, the 7-day time period will restart at GPA's convenience and the to-date demonstrated availability will be lost.

3. Should any failure occur in any portion of the Facility, due to or arising from faulty design, material, workmanship, or operation which requires or causes the Facility available capacity to be reduced, a new Reliability Test shall be undertaken after rectification has been completed.

4. The Facility capacity and reliability tests shall be carried out while the Facility is operating in compliance with the specified environmental requirements.

5. All costs associated with equipment repair or correction shall be borne by the Project Company.

J. Partial Commissioning

1. Project Company shall perform tests to demonstrate that generating units can be partially commissioned and operated without negatively impacting site safety and the ongoing construction efforts if required.

4.2.6 Tests Required Throughout the Life of the Plant

A. Annual Dependable Capacity Test

1. The Project Company shall perform an annual Dependable Capacity Test, to demonstrate the Facility Dependable Capacity. The performance shall be corrected to base conditions by the correction curves, as described in the calculation methods provided in the test procedure. Output and heat rate corrections shall be allowed for:

   a. Ambient dry bulb temperature

   b. Ambient relative humidity

   c. Barometric Pressure

   d. Generator Power Factor

   e. C/H ratio of the fuel

   f. Wet bulb temperature

   g. GPA shall have the right to request that the Facility's heat rate be tested concurrently with any Dependable Capacity Test and Project Company shall be obligated to comply with such request.

2. The Project Company shall submit a Test Report in accordance with Section 4.2.5. E. Test Reports

4.2.7 Tests and Inspections Prior to Facility Turnover to GPA in the End of the Term

1. Project Company shall perform tests one year prior to End of Contract Term to demonstrate the condition and performance of the plant. Tests shall include Dependable Capacity, heat rate, emissions and startup duration.

2. Project Company will allow GPA, or their designated agent, access to inspect and evaluate the plant, facilities and equipment.

3. Project Company shall correct, repair or replace deficiencies found during the turnover tests and inspections. Deficiencies shall be items only which reduce the functionality of the plant. Minor deficiencies due to plant aging no impacting the plant functionality or performance shall not be considered. Both Dependable Capacity and Reserve Capacity units shall be overhauled to correct deficiencies. The tests prior to Facility Transfer will have to meet minimum performance requirements in the ECA. The Dependable Capacity of the Facility to be demonstrated prior to Facility Transfer shall not be lower than 92.5% of the initial Dependable Capacity and the Heat Rate shall not be higher than 107.5% of the Heat Rate demonstrated during Facility Commissioning.

5 SITE DATA

5.1 Site Location

The land identified as Lot 5010-1NEW, Lot 5042-1 and Lot 5042-R1 in the Municipality of Dededo will be used for the new Guam Power Authority GPA power generation plant. The property was recently approved to be rezoned to M1 by the Guam Legislature. The property site is deemed appropriate for the proposed use barring unforeseen geotechnical issues or other site unknown issues identified in testing.

5.2 Description of the Plot

The property is unimproved with native vegetation existent throughout.

5.3 Site Size and Layout

Property consists of 60 plus acres near Harmon substation in Dededo. The estimated plant footprint is 25 acres. Project Company shall not build in the area outside the plant footprint other than for utility access. Project Company will locate the plant on the property to maintain a vegetation barrier while preserving as much of the remaining acres for future development.

5.4 Climate Data

1. See Appendix D for ASHRAE Guam Climate information
2. The climate of Guam is tropical, with warm weather and little seasonal temperature variation. Generally, low dry bulb temperatures are not below 70 °F. The potential for tropical storms and typhoons is common during the wet season.

5.5 Site Reference Conditions

1. The following are the site reference conditions, to be used for the basis of the plant guarantees:
   a. Ambient Dry Bulb Temperature (°F): 88.9
   b. Barometric Pressure (psia): 14.57
   c. Wet Bulb Temperature (°F): 78.1

5.6 Geotechnical Conditions

GPA will complete a preliminary geotechnical survey to be provided during this procurement period.

5.7 Raw Water Analysis

To be provided in Appendix E

5.8 ULSD Analysis

To be provided in Appendix F

6 PROJECT ADMINISTRATION

6.1 Design and Construction Progress

6.1.1 Monthly Reports

A. The Project Company shall submit to GPA a Monthly Project Report, commencing at the award of Contract, and concluding after the Commercial Operation Date. The Monthly Report shall include the following information:

1. Executive Summary of overall progress, significant issues, etc.
2. List of activities completed in prior month
3. Anticipated activities to be completed in month ahead
4. Updated Project schedule with critical path analysis
5. Engineering report detailing status of Project engineering
6. Construction report detailing status of construction, including generation plant, fuel pipeline, and switchyard.

6.1.2 Schedule Updates.

A. The Project Company shall submit an updated Project Schedule, to be included in the Monthly Project Report. The Project Schedule shall include all Project activities, including status of permits, engineering, procurement, equipment shipment and delivery, construction activities, and commissioning and start-up activities.

6.1.3 Meetings

A. The Project Company shall hold a progress meeting at least once per month with GPA. Until construction begins, the meetings can be held at the Project Company's office, GPA's office, or via teleconference. Once construction on site begins, the meeting to be held on site. The Progress Meeting shall include a review of safety information, schedule updates, review of potential problems and risks, and any coordination issues required with GPA.

B. The Project Company shall submit to GPA meeting minutes, within 5 business days of the meeting. The minutes shall include an action item list with expected date of closure, person requesting, responsible person, status, and actual closure date.

Appendix A: Grey Water Quantity and Analysis

Later

Appendix B: ULSD and/or Natural Gas Storage and Pipeline Structure

Appendix B ULSD and/or Natural Gas Storage and Pipeline Structure

DESCRIPTION OF THE WORK

1.1 Existing Systems

The Guam Power Authority (GPA) Bulk Fuel Storage Facility or GPA Bulk Fuel Storage Facility is located in the Municipality of Piti between the Atlantis Submarine and the former Navy power unit on the Piti Channel. See Appendix C. The bulk storage facility is owned by GPA but operated by another company on behalf of GPA.

There are four separate and distinct petroleum handling activities which are conducted at the GPA Bulk Fuel Storage Facility:

1. Storage of fuel oil in bulk storage tanks;
2. Pipeline transfer of fuel oil to and from tanks;
3. Pumping and valve transfer areas; and
4. Storage and processing of oil/water emulsions.

The bulk fuel storage tanks are steel above ground storage tanks with fixed dome roofs. The site contains two tanks with a design capacity of 268,000 barrels, each.

There are several product transfer pipes that connect to both tanks. Except where passing through earthen containment berms, all product transfer piping is located above ground on supports. Secondary containment systems for both tanks consist of an earthen bermed area.

There are two pump transfer areas located at the facility. The Diesel Pump Station controls fuel coming into the facility from the Shell/Navy tie-in. The GPA Fuel Transfer Station delivers fuel going out of the facility to three GPA power generation units: Cabras (to be retired), Piti-MEC and Tanguisson (retired).

Two pipelines connect the GPA Fuel Transfer Station to the power plants. A 6” pipeline connects to the Cabras and Piti-MEC plants and an 8” line connects to the Tanguisson power plant. Internal and external lines are either buried underground or supported aboveground on concrete supports with metal fasteners for thermal expansion.

The 8” fuel oil pipeline extends approximately 17.2 miles from the GPA Fuel Transfer Station to the Tanguisson power plant site. *See Exhibit X (insert overall pipeline routing plan).* The 8” RFO pipeline and the Tanguisson plant have both been de-activated.

1.2 ULSD Scope of Supply

The Project Company will design, permit and construct a pipeline to transport ultra-low sulphur diesel (ULSD) from the Guam Power Authority (GPA) Bulk Fuel Storage Facility located in Piti, Guam to the new power generation plant site identified in Section 5.0 Site Data.

The ULSD pipeline is to be constructed, as much as is reasonably possible, in the existing 8” RFO pipeline easement. The existing 8” pipeline is no longer active and the Project Company is to remove and replace with the new ULSD pipeline. Additional easement will need to be acquired to route the pipeline to the new power generation plant site. New pipeline routing shall follow existing pipeline corridors and access roads where possible. GPA will assist the Project Company with acquisition of all new easements for the pipeline.

The Fuel Transfer Station is located at the GPA Bulk Fuel Storage Facility Facility. The Fuel Transfer Station is comprised of eight (8) rotary screw pumps, three (3) of which are dedicated to the 8" RFO pipeline system. The Project Company shall review the pump equipment data and station design to validate that the existing pumps have the capability to meet the design conditions of the pipeline. If the existing pumps are not viable, then the Project Company shall be responsible for the design, permitting and construction of new transfer pumps, booster pumps and other associated equipment.

If natural gas is selected as a fuel source, the Project Company will design, permit and construct a pipeline to transport natural gas from the Guam Power Authority (GPA) Bulk Fuel Storage Facility located in Piti, Guam to the new power generation plant site.

The natural gas pipeline is to be constructed, as much as is reasonably possible, in the existing 8" RFO pipeline easement. As with the ULSD pipeline, the existing easement shall be utilized to the extent physically possible. Additional easement will need to be acquired to route the pipeline to the new power generation plant site. New pipeline routing shall follow existing pipeline corridors and access roads where possible. GPA will assist the Project Company with acquisition of all new easements for the pipeline. Project Company will have ultimate responsibility and assumes associated risks.

A new marine LNG receipt and storage facility will be constructed by Others at the GPA Bulk Fuel Storage Facility Facility. Project Company shall assume sufficient storage and supply will be available to support natural gas demand at the Facility. Project Company is responsible for natural gas system beginning at a flange after regasification.

1.2.1 Engineering

The Project Company will be responsible for the complete engineering and design services for the procurement, construction, and commissioning of the new fuel pipeline and any associated transfer equipment as required for ULSD throughput. The Project Company shall provide engineering, design, drawings, specifications, databases, construction specifications, and equipment information that describes all components of the new generation facility.

1.2.2 Procurement of Equipment

The Project Company will be responsible for all aspects of the procurement of material, equipment, labor, and services for the new pipeline and any new pump equipment. Procurement service will include, but not be limited to, purchasing, subcontracting, expediting, inspections and factory testing as applicable, shipping and field services. The Project Company shall maintain a high standard of ethics to ensure the Project reflects positively on GPA, the Project Company, contractors and suppliers.

1.2.3 Construction

The Project Company will be responsible for complete construction of the new ULSD pipeline, including any ULSD supply infrastructure needed to transport ULSD from the GPA Bulk Fuel Storage Facility to the green-field power generating plant. The Project Company shall develop a construction plan detailing construction procedures, site safety, site security, subcontractor administration, and start-up and commissioning procedures. The construction plan shall address any interfaces necessary at the GPA Bulk Fuel Storage Facility and new power plant site boundary. GPA shall have an opportunity to review and comment on the construction plan no later than six (6) months prior to commencement of construction.

1.2.4 Right-of-Ways

Obtainment of any additional right-of-ways necessary for the pipeline(s) will be the responsibility of the Project Company. However, GPA will assist the Project Company.

1.2.5 ULSD

GPA will procure and supply ULSD to the bulk storage tanks at the GPA Bulk Fuel Storage Facility. GPA will be responsible for the conversion of the two bulk storage tanks from RFO to ULSD.

ULSD shall be defined as meeting the specifications of ECA Schedule 6.

If Project Company determines that drag reducing, lubricity, or other additives are desirable for the operation of the pipeline and terminal, and do not present negative consequences in the operation of the plant, they shall provide at their own cost.

1.2.6 Natural Gas

If natural gas is selected as a fuel source, GPA will procure and supply LNG to the regasification station at the GPA Bulk Fuel Storage Facility.

Natural Gas shall be defined as meeting the specifications of ECA Schedule 7.

1.2.7 Environmental Permitting

The Project Company will be responsible for procurement of all environmental permits required for construction and operation of the new terminal facilities and pipeline systems, including the Air Permit RMP, Vapor Dispersion modelling, and Heat Flux for the facilities to be constructed by Project Company. The Project shall meet all applicable local, state, and federal environmental regulations and permit conditions.

2.0 DESIGN PHILOSOPHY AND PRINCIPLES

2.1 Design Requirements, Pipeline

2.1.1 Engineering

A. General

The design life shall be thirty years with normal required inspection and maintenance. The systems shall be designed for construction and operational safety, as well as ease of maintenance and accessibility.

All design documents must be stamped by a licensed Professional Engineer registered in the Territory of Guam, in the appropriate discipline, in accordance with the Territory of Guam Rules and Regulations.

B. Applicable Codes and Standards

The pipeline shall be designed and constructed in accordance with all Federal, State, and local codes and standards including the most applicable sections of the codes, standards and regulations of the following organizations. This list of organizations is not complete, and does not relieve the Project Company from complying with any other requirements and regulations applicable to this Project. The effective dates of the Codes

and Standards of these organizations shall be the most recent revision prior to the Contract date. Project Company's may offer equivalent European, Japanese and Korean standards. The Project Company must demonstrate equivalency. Only one set of standards shall be applied throughout the Facility.

ACI	American Concrete Institute
AGA	American Gas Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
API	American Petroleum Institute
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASNT	American Society for Nondestructive Testing
ASTM	American Society for Testing and Materials
AWS	American Welding Society
CFR	Code of Federal Regulations
CRSI	Concrete Reinforcing Steel Institute
EIA	Electronic Industry Association
EPA	Environmental Protection Agency
ICC	International Code Council
IEEE	Institute of Electrical and Electronics Engineers
ISA	International Society for Automation
MSS	Manufacturers Standardization Society of Valves and Fittings Industry
NACE	National Association of Corrosion Engineers
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration
SSPC	Steel Structures Painting Council
UL	Underwriters Laboratory

C. Drawings

A complete set of Issue for Construction (IFC) design drawings shall be submitted to GPA at the Commercial Operation Date, in PDF format. All drawings shall be in Metric units.

D. Documentation and Manuals

Prior to and during construction operations, the Project Company shall submit construction documentation for GPA review/approval. As a minimum, the Project Company shall submit the following documentation:

- Permit applications and/or approvals
- Calculations for temporary works, buoyancy, etc.
- Construction drawings
- Method Statements for the following activities:
    - Pre-Construction Survey
    - Clearing and Grading of ROW
    - Pipe Handling, Storage, Hauling and Stringing
    - Cold Bending
    - Lining Up and Welding
    - Field Joint Coating
    - NDT
    - Trench Excavation and padding
    - Pipeline Lowering-in
    - Backfilling and Berming
    - Tie-ins and Hot Taps
    - Special Crossings
    - Auger Bore
    - Thrust Bore
    - Pipework Fabrication and Installation of Appurtenances
    - Cathodic Protection Facilities
- Procedures for the following operations:
    - Cleaning and Gauging
    - Hydrostatic Testing
    - Cleaning/Swabbing
    - Drying
    - Commissioning
    - Baseline Intelligent Pigging Survey
- Radiography weld maps
- Pipe and welding book
- NDT reports (radiography, ultrasonic and MPI)
- Material test results (coating, welding, painting, etc.)
- Material certificates, material receipts, etc.
- Vendor drawings

• Water sample analysis results

Operations and maintenance manuals shall be submitted for all equipment and presented in clear and thorough manner, complete with respect to dimensions, design criteria, materials of construction, and like information to enable reviewer to review information as required. Details shall be identified by reference to sheet and detail shown on Drawings.

Operations and maintenance manuals shall be submitted to GPA in PDF format at the Commercial Operation date. Operation and maintenance manuals for new equipment purchased after the Commercial Operation date shall also be provided to GPA at the time of purchase.

E. Specifications

The Project Company shall be responsible for development of all procurement, construction, installation, start-up, and commissioning specifications required for the construction of the pipeline and pump equipment. The Project Company shall provide a PDF copy of all the conformed specifications to GPA at the Commercial Operation Date.

F. Tagging System

The pipeline shall utilize a tagging system to be determined by the Project Company. The tagging system shall include all equipment, enclosures, cables, pipes, instruments, control devices, valves, and other equipment.

G. As-Built Drawings

As-Built Drawings shall be provided to GPA at the date of Commercial Operation.

2.2 Performance Requirements

2.2.1 Capacity

For ULSD systems the pipeline shall be designed to meet the Contracted Facility Capacity matched with associated storage at the plant.

For natural gas systems, the pipeline and related equipment shall be designed to meet the Contracted Facility Capacity.

2.2.2 Leak Detection and Integrity Management

For ULSD systems, Leak Detection systems and integrity management shall be utilized for the pipeline via line volume balancing, which shall be implemented in accordance with API RP 1130, and shall meet the requirements of 49 CFR 195.

For natural gas systems, integrity management systems shall be implemented for the pipeline via requirements of 49 CFR 192.

3.0 PIPELINE DESIGN

3.1 Codes and Standards

Pipeline shall be design, constructed, tested, and operated in accordance with the following at a minimum, including those regulations, standards, and recommended practices included by reference in each:

49 CFR 192 *For PHMSA jurisdictional portions of the gas system*

49 CFR 195 *For PHMSA jurisdictional portions of the system*

40 CFR 112

ASME B&PV Section VIII

ASME B31.3 *For non-PHMSA jurisdictional portions of the system*

ASME B31.8 *For PHMSA jurisdictional portions of the gas system*

ASME B31.4 *For PHMSA jurisdictional portions of the system*

ASME/API STD 1104

API STD 2610

API Manual of Petroleum Measurement Standards (MPMS) Chapter 5 “Metering”

API 650

API 5L

API 6D

API RP 500

API RP 651

API RP 1102

API RP 1110

API RP 1162

API RP 2350

NFPA 1

NFPA 30

NFPA 58

NFPA 59

NFPA 70 (NEC)

NFPA 70E

OSHA 1910

ANSI B16.5

ANSI B16.34

International Building Code (IBC) as adopted and modified by the Guam Code Annotated

International Fire Code (IFC) as adopted and modified by the Guam Code Annotated

Project Companies may offer equivalent European, Japanese and Korean standards. The Project Company must demonstrate equivalency. Only one set of standards shall be applied throughout the Facility.

3.2 ULSD Hydraulics and Pipeline Design

Pipeline shall be designed in accordance with design pressures and material properties per 49 CFR 195 and ASME B31.4, and shall be constructed of AP 5L-PSL2 steel line pipe.

Pipeline throughput shall be designed to operate max. 12 fps based on use of API 5L materials, with an MAOP consistent with the existing tank/pump systems. Project Company

shall consider optional pump station upgrades at the GPA Bulk Fuel Storage Facility where this cost may be capitalized for improved plant economics.

Pipeline wall thickness shall be calculated in accordance with ASME B31.4 as a minimum thickness, and stresses shall not exceed 100% of SMYS at any point along the pipeline, including during hydrostatic testing. Pipeline wall thicknesses will be required to be calculated for external pressures and stresses where the pipeline is installed via HDD or under transportation features (roads, rail).

Appropriate features shall be included in the design of the pipeline system to limit potential surge to those within the allowable stress calculations of the system, at no point exceeding 110% of MOP. Hydrostatic testing of all B31.4 systems shall be performed in accordance with 49 CFR 195 and B31.4, including a minimum of 1.25 times the maximum operating pressure (MOP) at the high point elevation for each test section. Note that multiple test sections may be in the best interest of the Project Company based on pipe line fill, water availability and allowable discharge points.

Non-PHMSA portions of the systems shall be hydrostatically tested per ASME B31.3. Pneumatically testing shall not be allowed without written consent of the GPA.

3.3 Natural Gas Pipeline Design

Pipeline shall be designed in accordance with design pressures and material properties per 49 CFR 192 and ASME B31.8, and shall be constructed of AP 5L-PSL2 steel line pipe.

Pipeline throughput shall be designed to operate between 15 – 60 fps based on use of API 5L materials, with an MAOP consistent with a Class Location study of the pipeline route.

Pipeline wall thickness shall be calculated in accordance with ASME B31.8 as a minimum thickness, and stresses shall not exceed SMYS as required by a Class Location study along the pipeline, including during testing. Pipeline wall thicknesses will be required to be calculated for external pressures and stresses where the pipeline is installed via HDD or under transportation features (roads, rail).

Appropriate features shall be included in the design of the pipeline system to limit potential surge to those within the allowable stress calculations of the system. Testing of all B31.8 systems shall be performed in accordance with 49 CFR 192 and B31.8. Note that multiple test sections may be in the best interest of the Project Company based on pipe line fill, test medium and allowable discharge points.

Non-PHMSA portions of the systems shall be hydrostatically tested per ASME B31.3. Pneumatically testing shall not be allowed without written consent of the GPA.

Pipeline shall be adequately protected against corrosion even if not in use.

3.4 Pipeline Routing and Construction Considerations

New pipeline routing shall follow existing pipeline corridors and access roads where possible. For construction and maintenance of new pipelines, it shall be done in the existing right of way for the old pipeline and alongside the road for the section to the new plant from the existing pipeline right of way. Due consideration shall also be taken for ease of construction, expansion, commissioning, maintenance, and operation of the facilities.

According to international standard practice fiber optic cables of armored type shall be installed underground along the pipe routing without conduits or concrete encasement. For road crossings and each ULSD pipeline endpoint (pump station side and new power plant side) two 4-inch PVC conduits (NEMA TC 8) encased in concrete shall be installed.

The route alignment sheets shall contain detailed information with respect to:

route layout, ground profile, topography, soil condition/characteristics, class location (for natural gas), location of existing above ground and buried pipelines, location of existing power cables, overhead lines and other services, and soil resistivity measurement for Cathodic Protection Design.

The route alignment sheets shall also include all construction related details of the pipeline comprising of: line pipe material, grade and wall thickness, design factors, surface/terrain details, road crossings, coating type, burial depth, special items (valves, fittings, hot bends, insulation joints, etc.), type of construction, crossing location, type and reference drawing, hydrostatic test sections, cathodic protection and markers, etc.

Pipeline shall be constructed to allow in-line inspection tool runs, with a minimum bend radius of 3R and utilizing barred tees between pig traps. This shall apply at a minimum for all piping located outside of the fence lines of the GPA Bulk Fuel Storage Facility terminal and the plant facility.

Visual inspections shall be done on all welds. All welding of PHMSA-jurisdictional pipeline shall be per AP 1104, and shall be ultrasonically or radiographically inspected for 100% of their circumference. Any welds that do not meet specifications will be repaired immediately. All welding of non-PHMSA-jurisdictional piping shall be per API 1104 or ASME B31.3, and no less than 10% of pipe welds for aboveground piping shall be radiographically inspected.

Before the pipe will be lowered into the ditch, coatings will be visually inspected and checked with a holiday detector to ensure there is no damage to the coated pipe.

3.5 ULSD Tank Design and Construction Considerations

Civil features shall provide features to ensure the requirements of SPCC and CWA are met at a minimum. The site shall include spill containment in accordance for 40 CFR 112 and NFPA 30, and at a minimum shall provide 100% containment plus a 25-year/24-hour storm event for the single largest vessel. However, Project Company may propose a less stringent requirement, providing Project Company will take measures during storm event to drain the dike area. Site shall be designed to ensure post-development storm water flows do not exceed pre-development. If the site is located within a floodplain, measures shall be taken in accordance with FEMA guidelines.

The facility shall include fire detection and suppression systems. Fire detection shall be provided at areas of rotating equipment or where personnel may be present during operations. Fire suppression shall be provided per NFPA 30 at a minimum. Hydrants with suitable flowrate shall be strategically located throughout the facility as negotiated with the local first responders.

Tanks shall be provided with overfill protection compliant with API RP 2350 allowing for unmanned facility operation. Tanks shall also be provided with cathodic protection, a leak prevention barrier (with tell tales), and appropriate gaging, grounding, water draw-off, and access to allow operations and maintenance.

Piping shall be aboveground as a standard. Buried piping systems within the tank terminal shall be avoided. Piping systems and related equipment shall be adequately supported against movement or damage due to weather or seismic activities.

The facility shall include the ability to receive ULSD by tank truck in emergency situations. These facilities shall continue to meet the minimum regulatory requirements.

Terminal shall include space, access, and utilities to all allow a 3rd party testing agency to perform fuel quality testing and record-keeping.

Underground storage shall be avoided wherever possible.

3.6 Pipeline Separation

Pipeline(s) shall be separated from existing parallel pipelines within the right-of-way , and from each other between existing and new pipelines by no less than 5 feet outside-to-outside to allow for location and for future access/construction.

Pipelines and utilities crossing perpendicular to the pipeline(s) shall be separated by no less than 2 feet outside-to-outside.

3.7 Pipeline Depth of Cover

In standard open trenching, pipeline cover shall be no less than 36” at a minimum. Where pipeline is crossing a roadway, the cover shall be increased to no less than 48” at a minimum. Water bodies greater than 100ft wide shall have a cover no less than 15 ft, while dry creeks, ditches, and gullies shall have cover no less than 48”.

Pipeline markers shall be placed along route in a line of sight fashion (one marker is always visible from another).

3.8 Pipeline Coating, Corrosion Protection and Monitoring

Pipeline coatings for buried pipelines shall be appropriate for the installation type. At a minimum, open trench installation will be factory coated with 3M Company, Scotchkote fusion bonded epoxy or equivalent, with field joints and coating repairs using the same manufacturer’s recommended repair and joint kits. Pipeline which will be installed using trenchless methods (slick bore or HDD) shall be factory coated with epoxy based polymer concrete coating or equivalent. All pipeline coatings shall be inspected upon receipt of the piping and as the pipeline is installed. The pipe shall be 100% holiday tested in accordance with the referenced specification.

Aboveground piping will be painted in accordance with industry practice, and shall be no less than 16mil TFT 2-part epoxy.

The pipeline exterior will be protected with impressed current cathodic protection systems located along the route of the pipeline. The design shall be based upon maintaining electrical isolation of the pipeline from power neutral using isolation kits with surge protection at pump stations and block valve locations (if applicable). Cathodic protection design shall account for existing CP systems in the same right-of-way and at crossings, and shall include test stations.

3.9 Electrical Power &Telecommunications

All electrical systems shall be design and installed in accordance with NFPA 70 (NEC), NFPA 70E (Arc Flash), and API RP 500 for hazardous area classifications. Grounding shall be accomplished using standard practice per NEC. The grounding shall serve as both power grounding and static grounding. Transient voltage surge suppression (TVSS) shall be provided to protect electrical equipment from damage due to lightning strikes or other voltage surges. Lightning protection on tankage is not anticipated.

Project Company shall develop and install a Supervisory Control and Data Acquisition (SCADA) system to provide remote monitoring and control of the PHSMA-jurisdictional portions of the ULSD system, as well as inventory control and automation of the terminal facilities. The remote monitoring and control signals will be to and from the control at the plant. A local virtualized historian shall be utilized to keep instrumentation and other important operational data for technician and engineering troubleshooting and regulatory compliance.

It shall meet the recommendations developed in the National Transportation Safety Board Study NTSB/SS-05/02 “SCADA in Liquid Pipelines” including following API RP 1165. The

SCADA system shall manage the leak detection system per the applicable provisions of API RP 1130 Computational Pipeline Monitoring for Liquid Pipelines, including data validation and auditable data recordkeeping. In general, the scan rate shall be fast enough to minimize overpressure conditions, provide responsiveness to abnormal operations, and detect small leaks within the technology limitations of volumetric line balancing.

Appendix C: ULSD Pipeline Drawings

(four drawings are embedded as an object – click on file and it will open).



GUAM PIPELINE SET
(06.21.2017) Rev 08.(

Appendix D: ASHRAE Guam Climate Information

2013 ASHRAE Handbook - Fundamentals (IP) © 2013 ASHRAE, Inc.

NWSO AGANA, Guam

WMO#: 912120

Lat: 13.47N Long: 144.78E Elev: 246 StdP: 14.57 Time Zone: 10 (PCW) Period: 86-10 WBAN: 41415

Annual Heating and Humidification Design Conditions

	Coldest Month	Heating DB		Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
		99.6%	99%	99.6% DP	99.6% HR	99.6% MCDB	99% DP	99% HR	99% MCDB	0.4% WS	0.4% MCDB	1% WS	1% MCDB	MCWS	PCWD
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)
(1)	2	73.8	74.8	63.7	89.0	79.3	65.1	93.6	79.7	25.1	83.2	23.2	82.8	7.7	60

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

	Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
			0.4% DB	0.4% MCWB	1% DB	1% MCWB	2% DB	2% MCWB	0.4% WS	0.4% MCDB	1% WS	1% MCDB	2% WS	2% MCDB	MCWS	PCWD
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
(2)	6	9.6	89.6	78.3	88.9	78.1	88.2	78.0	81.0	86.1	80.5	85.7	80.0	85.3	12.3	90

	Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours 8 to 4 & 5589
	0.4%			1%			2%			0.4%		1%		2%		
	DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
(3)	79.4	153.9	83.7	78.9	151.6	83.4	78.4	148.7	83.1	45.0	86.4	44.4	86.1	43.8	85.3	0

Extreme Annual Design Conditions

	Extreme Annual WS			Extreme Max	Extreme Annual DB				n-Year Return Period Values of Extreme DB							
					Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years	
	1%	2.5%	5%	WB	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
(4)	22.7	20.5	18.7	90.1	70.7	92.3	1.7	2.9	69.5	94.4	68.5	96.1	67.5	97.7	66.3	99.7

Monthly Climatic Design Conditions

			Annual (d)	Jan (e)	Feb (f)	Mar (g)	Apr (h)	May (i)	Jun (j)	Jul (k)	Aug (l)	Sep (m)	Oct (n)	Nov (o)	Dec (p)
(5)	Temperatures, Degree-Days and Degree-Hours	Tavg	81.8	80.5	80.4	81.1	82.3	83.0	83.1	82.3	81.8	81.7	82.1	82.3	81.5
(6)		Sd		1.46	1.37	1.37	1.25	1.24	1.60	1.68	1.87	1.78	1.69	1.50	1.47
(7)		HDD50	0	0	0	0	0	0	0	0	0	0	0	0	0
(8)		HDD65	0	0	0	0	0	0	0	0	0	0	0	0	0
(9)		CDD50	11623	945	850	964	968	1023	993	1001	986	952	996	968	977
(10)		CDD65	6148	480	430	499	518	558	543	536	521	502	531	518	512
(11)		CDH74	63750	4351	3754	4760	5477	6286	6270	5841	5493	5184	5623	5553	5158
(12)		CDH80	18205	941	846	1220	1636	2078	2167	1800	1580	1453	1635	1585	1264
(13)	Precipitation	PrecAvg	75.9	3.0	2.0	2.6	2.0	4.1	4.8	9.3	10.0	13.6	11.9	8.4	4.2
(14)		PrecMax	273.1	27.6	34.6	25.3	18.0	22.5	31.7	26.9	58.8	31.1	45.1	32.6	26.8
(15)		PrecMin	58.1	0.2	0.3	0.8	0.0	1.0	1.3	5.2	3.9	8.7	6.5	4.8	1.9
(16)		PrecSD	69.3	6.6	7.9	7.4	5.0	6.3	8.1	6.2	15.9	6.0	10.6	9.6	7.1
(17)	Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB	87.9	87.8	88.2	89.4	89.9	90.4	89.8	89.9	89.7	89.6	89.3	88.1
(18)			MCWB	76.3	75.8	75.7	76.5	77.6	78.0	78.2	79.4	79.5	79.4	78.7	77.7
(19)		2%	DB	86.4	86.4	87.3	88.2	89.0	89.3	88.6	88.6	88.2	88.4	88.1	87.2
(20)			MCWB	75.8	75.4	75.5	76.4	77.5	78.1	78.2	79.0	79.2	79.1	78.4	77.4
(21)		5%	DB	85.6	85.7	86.4	87.6	88.0	88.2	87.8	87.6	87.5	87.7	87.4	86.2
(22)			MCWB	75.6	75.2	75.2	76.4	77.4	78.0	78.4	78.9	79.0	78.9	78.3	77.2
(23)		10%	DB	84.6	84.6	85.6	86.6	87.3	87.6	86.8	86.4	86.3	86.6	86.4	85.4
(24)			MCWB	75.3	74.9	75.1	76.2	77.3	78.0	78.4	78.7	78.9	78.8	78.2	77.0
(25)	Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB	79.5	79.2	79.6	80.0	80.8	81.0	81.0	81.8	81.6	81.8	81.2	80.4
(26)			MCDB	83.7	84.2	84.1	85.3	85.8	86.3	86.2	87.5	86.9	86.6	85.6	84.5
(27)		2%	WB	78.1	78.1	78.2	79.0	79.8	80.0	80.1	80.6	80.6	80.7	80.3	79.2
(28)			MCDB	82.9	83.0	83.3	84.7	85.3	86.0	85.6	86.1	85.9	85.9	85.0	83.9
(29)		5%	WB	77.5	77.3	77.2	78.2	79.1	79.3	79.6	79.8	79.5	79.5	79.6	78.6
(30)			MCDB	82.3	82.2	82.5	84.1	84.9	85.5	85.1	85.2	85.1	85.2	84.5	83.5
(31)		10%	WB	76.6	76.4	76.4	77.6	78.5	78.9	79.0	79.1	79.2	79.2	79.0	78.0
(32)			MCDB	81.7	81.6	82.4	83.5	84.4	85.2	84.7	84.4	84.4	84.5	84.1	82.9
(33)	Mean Daily Temperature Range		MDBR	9.3	9.7	10.1	10.1	9.7	9.6	9.6	9.7	9.8	9.7	9.1	8.9
(34)		5% DB	MCDBR	10.3	10.7	10.8	10.8	10.4	10.4	10.5	11.0	10.9	10.8	9.9	9.6
(35)			MCWBR	4.7	4.9	4.5	4.2	4.0	4.3	5.0	5.3	5.2	5.0	4.6	4.5
(36)		5% WB	MCDBR	8.9	9.5	9.7	9.8	9.6	9.7	9.9	10.2	10.1	10.0	9.1	8.6
(37)			MCWBR	4.8	5.1	4.7	4.4	4.4	4.6	5.2	5.4	5.4	5.3	5.0	4.7
(38)	Clear Sky Solar Irradiance		taub	0.436	0.424	0.410	0.402	0.384	0.371	0.361	0.370	0.383	0.410	0.428	0.426
(39)			taud	2.590	2.573	2.556	2.541	2.554	2.576	2.627	2.640	2.664	2.645	2.642	2.645
(40)			Ebn,noon	275	283	288	287	288	289	292	293	291	283	275	275
(41)			Edh,noon	31	32	33	34	33	32	30	30	30	30	29	29

Nomenclature See separate page

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Appendix E: Raw Water Analysis

To be provided later

Appendix F: ULSD Analysis

Refer to ECA Schedule 6.

Appendix G: GPA Grid Stability and Reliability Standards

Appendix G: GPA Grid Stability and Reliability Standards

REFER TO PREVIOUSLY PROVIDED STANDARDS removed from Schedule 1to reduce document size

Appendix H: World Bank Group International Finance Corporation EHS Guidelines 1.7 Noise

General EHS Guidelines [Complete version] at: **www.ifc.org/ehsguidelines**

Environmental, Health, and Safety (EHS) Guidelines
GENERAL EHS GUIDELINES: ENVIRONMENTAL

NOISE MANAGEMENT

1.7 Noise

7 Applicability

This section addresses impacts of noise beyond the property boundary of the facilities. Worker exposure to noise is covered in Section 2.0 on Occupational Health and Safety.

8 Prevention and Control

Noise prevention and mitigation measures should be applied where predicted or measured noise impacts from a project facility or operations exceed the applicable noise level guideline at the most sensitive point of reception. [1] The preferred method for controlling noise from stationary sources is to implement noise control measures at source.[2] Methods for prevention and control of sources of noise emissions depend on the source and proximity of receptors.
Noise reduction options that should be considered include:

- Selecting equipment with lower sound power levels
- Installing silencers for fans
- Installing suitable mufflers on engine exhausts and compressor components
- Installing acoustic enclosures for equipment casing radiating noise
- Improving the acoustic performance of constructed buildings, apply sound insulation
- Installing acoustic barriers without gaps and with a continuous minimum surface density of 10 kg/m_2 in order to minimize the transmission of sound through the barrier. Barriers should be located as close to the source or to the receptor location to be effective
- Installing vibration isolation for mechanical equipment
- Limiting the hours of operation for specific pieces of equipment or operations, especially mobile sources operating through community areas
- Re-locating noise sources to less sensitive areas to take advantage of distance and shielding
- Siting permanent facilities away from community areas if possible
- Taking advantage of the natural topography as a noise buffer during facility design
- Reducing project traffic routing through community areas wherever possible
- Planning flight routes, timing and altitude for aircraft
  (airplane and helicopter) flying over community areas
- Developing a mechanism to record and respond to complaints

[1] A point of reception or receptor may be defined as any point on the premises occupied by persons where extraneous noise and/or vibration are received. Examples of receptor locations may include: permanent or seasonal residences; hotels / motels; schools and daycares; hospitals and nursing homes; places of worship; and parks and campgrounds.

[2] At the design stage of a project, equipment manufacturers should provide design or construction specifications in the form of *"Insertion Loss Performance"* for silencers and mufflers, and *"Transmission Loss Performance"* for acoustic enclosures and upgraded building construction.

9 Noise Level Guidelines

Noise impacts should not exceed the levels presented in Table 1.7.1, or result in a maximum increase in background levels of 3 dB at the nearest receptor location off-site.

Table 1.7.1- Noise Level Guidelines[54]		
	One Hour L_{Aeq} (dBA)	
Receptor	Daytime 07:00 - 22:00	Nighttime 22:00 - 07:00
Residential; institutional; educational[55]	55	45
Industrial; commercial	70	70

52 levels that would be present in the absence of the facility or noise source(s) under investigation.

m to any reflecting surface (e.g., wall). In general, the noise level limit is represented by the background or ambient noise

Highly intrusive noises, such as noise from aircraft flyovers and passing trains, should not be included when establishing background noise levels.

9.1 Monitoring

Noise monitoring[56] may be carried out for the purposes of establishing the existing ambient noise levels in the area of the proposed or existing facility, or for verifying operational phase noise levels.

Noise monitoring programs should be designed and conducted by trained specialists. Typical monitoring periods should be sufficient for statistical analysis and may last 48 hours with the use of noise monitors that should be capable of logging data continuously over this time period, or hourly, or more frequently, as appropriate (or else cover differing time periods within several days, including weekday and weekend workdays). The type of acoustic indices recorded depends on the type of noise being monitored, as

established by a noise expert. Monitors should be located approximately 1.5 m above the ground and no closer than 3

[54] Guidelines values are for noise levels measured out of doors. Source:
Guidelines for Community Noise, World Health Organization (WHO), 1999.

[55] For acceptable indoor noise levels for residential, institutional, and educational settings refer to WHO (1999).

[56] Noise monitoring should be carried out using a Type 1 or 2 sound level meter meeting all appropriate IEC standards.

Appendix J: KEPCO Proposal Technical Details

The following information is from KEPCO's proposal dated April 2, 2019 including provided clarifications. The information is subject to detail design.

KEPCO proposes a combined cycle unit with three Siemens ST 800-57 combustion turbines with individual HRSGs feeding a steam turbine. There are SCR in the HRSGs. KEPCO also proposes a 25 MW BESS. KEPCO will provide diesel generators and additional CT capacity totaling 64.5 MW to offset the loss of single largest unit. Designated as Reserve Capacity.

There would be no synchronous condenser support in the event of all units being off line at the same time.

1. Plant System and Equipment
    a. 3x1 Combined Cycle
        i. Gas Turbines (3 total)
            1. Siemens
                a. SGT-800-57 (At new and clean conditions)
                    i. Gross Output
                        1. ULSD 44,943 kW at facility (198,000 kW)
                        2. NG 44,450 kW at facility (198,000 kW)
                    ii. Heat Rate
                        1. ULSD 9,708 Btu/kWh
                        2. NG 10,015 Btu/kWh
                    iii. RPM
                        1. 6600 RPM
                    iv. Air Flow
                        1. ULSD 954,361 lbm/hr
                        2. NG 894,375 lbm/hr
                    v. Fuel Consumption
                        1. ULSD 22,203 lbm/hr
                        2. NG 18,981 lbm/hr
                    vi. Fuel Pressure Required
                        1. ULSD 37 psig
                        2. NG 479 psig
                    vii. Inlet Filter Type
                        1. Static filter
                    viii. Turbine/Compressor Water Wash
                        1. Turbine : N/A
                        2. Compressor : required
                    ix. Fire Protection
                        1. CO2 System
                        2. Temperature and IR (infrared) detectors included
                        3. Smoke and UV detectors not included
                    x. Inlet Silencer
                        1. Camfil Power Systems / Faist Anlagenbau
                    xi. Governor
                        1. IEEE model GG0V1

0

xii. Minimum synchronized (hot, warm, cold start)
1. 5 mins from ignition
xiii. Normal Ramp Rate (hot, warm, cold start)
1. 6.6 MW/min
xiv. Emergency Ramp Rate (hot, warm, cold start)
1. ULSD 10 MW/min @ 50%-100% load
2. NG 12.5 MW/min @ 50%-100% load
xv. Combustion Turbine Unit Full Load (hot, warm, cold start)
1. 10 min
xvi. ULSD Annual Maintenance Outage Schedule
1. Duration 8.5 days average
2. Cycle Every 7,500 EOH (4,166 op. hrs)
xvii. Natural Gas Annual Maintenance Outage Schedule
1. Duration 5.9 days average
2. Cycle Every 15,000 EOH (15,000 op. hrs)

2. Turbine inlet temp (iso) in combustion chamber 1,273 °C (Gas Fuel), and 1,245 °C (Liquid Fuel)
3. Turbine exhaust gas outlet temp at turbine exhaust and stack outlet at RSC, 100% load ULSD firing is 563 °C
4. Turbine exhaust gas outlet temp at turbine exhaust and stack outlet at RSC, 100% load NG firing is 578 °C
5. Each includes Control & Lube Oil System, Air Intake System, Ventilation System, Fire Protection and Detection System, Turbine Control System
6. Exhaust Gas System
a. Bypass Stacks (3 total)
b. Diverter Dampers (3 total)

ii. HRSG (3 total, at new and clean conditions)
1. Curo, BHI, etc
a. Horizontal, drum, natural circulation, 3P, Reheat
b. Duct burner not included
c. Gas Temperature at stack
i. NG CC100% 219 °F
d. HP Steam Flow
i. NG 100% 96,907 lbm/hr
e. HP Steam Pressure
i. NG CC100% 1,747 psig
f. IP Steam Flow
i. NG 100% 122,086 lbm/hr
g. IP Steam Pressure
i. NG CC100%355 psig
h. LP Steam Flow
i. NG CC100%8,519 lbm/hr
i. LP Steam Pressure
i. NG CC100%52 psig

1

2. SCR
    a. Honeycomb or corrugated type catalyst
3. Includes Blowdown System, HRSG stack
4. Includes HP Bypass System (3), HRH Bypass System (3), LP Bypass System (1), HP Letdown System to Aux Steam System (1)

iii. Steam Turbine (1 total)
1. Siemens
    a. SST-700/900
        i. Gross output (at generator terminals, new and clean)
            1. ULSD CC100% 68,842 kW
            2. NG CC100% 69,849 kW
        ii. RPM
            1. 7100/3600 rpm
        iii. Steam Flow
            1. NG CC100% HP 290,721 lbm/hr
        iv. Steam Pressure
            1. NG CC100% HP 1,722 psig
        v. Steam Temperature
            1. NG CC100% HP 1050 °F
        vi. Exhaust Pressure
            1. NG CC100% HP 2.4 in Hga
2. Includes Lube Oil System, Control Oil System, Gland Steam Condenser, Drain System, Turbine Gland Steam System, Turbine Control System

iv. Feedwater System
1. HP/IP HRSG Feedwater Pumps (3x50%)

v. Condensate System
1. Surface Condenser (1x100%)
2. Condenser Vacuum Pumps (2x50%)
3. Condensate Extraction Pumps (3x50%)
4. Clean Drain System

vi. Circulating Water System
1. Cooling Tower (1)
    a. Paharpur Cooling Towers Limited.
        i. Mechanical induced draft type
        ii. # of Cells 4
        iii. Water Flow Rate Approx. 47,755 gpm
        iv. Heat Load Approx. 445 MMBtu/hr
        v. Design wet bulb temperature 78 °F
        vi. Approach temperature 5.4 °F
2. Circulating Water Pumps (3x50%)
3. Tube Cleaning System
4. Wastewater will not exceed US EPA NPDES permit No. GU002014

vii. Closed Cooling Water System
1. CCW Pumps (2x100%)
2. CCW Coolers (2x100%)

3. Expansion Tank (1)
4. Chemical Injection Skid (1)

viii. Chemical Dosing Systems
1. For HRSG, and Cooling Tower

ix. Chemical Laboratory

x. Compressed Air System
1. Air Compressors with Motors (3x50%)
2. Air Receiver (1)
3. Desiccant heatless dual tower dryers (2x100%)

xi. Sump System
1. Sump Pumps (10 total)

xii. Cranes and Hoists

xiii. Fire Protection System
1. Motor Driven Fire Water Pump (1x100%)
2. Engine Driven Fire Water Pump (1x100%)
3. Motor Driven Jockey Pumps (2x100%)

xiv. HVAC Systems

xv. Workshop

xvi. Service Gas System
1. N2 gas bottles and racks

xvii. ULSD & Natural Gas Pipeline

xviii. Ammonia Storage and Handling System for SCRs

xix. Distributed Control System (DCS)
1. Siemens, ABB, Emerson, Valmet, Yokogawa, Hollsys, Schneider Electric, Honeywell
   a. SPPA-T3000, Symphony+, Ovation, ValmetDNA, Centum VP, Hollysys MAC-K, Foxboro Evo, Experion

xx. Generators (4 total)
1. Manufacturers
   a. GTG (3) ABB
   b. STG (1) Siemens
2. Rated Voltage at generator terminal (kV)
   a. GTG 13.8
   b. STG 13.8
3. Frequency Range
   a. GTG 60 ± 2% continuous, 60 ± 5% conditional
   b. STG 60 ± 2% continuous, 60 ± 5% conditional
4. Rated Power Factor
   a. GTG Lagging 0.8
   b. STG Lagging 0.8
5. Insulation Class
   a. GTG F
   b. STG F
6. Cooling Type
   a. GTG TEWAC
   b. STG TEWAC
7. Design Standard

a. GTG NEMA MG1
b. STG IEEE C50.13

8. Efficiency at PF 0.8 & 100% load
   a. GTG 97.74%
   b. STG 98.30 %
9. Short Circuit Ratio
   a. GTG 0.53
   b. STG 0.65

xxi. Neutral Earthing Equipment (4 total)

1. Transformer
   a. Rating
      i. GTG (3) 80kVA/10s
      ii. STG (1) 79.67kVa 10sec
   b. Voltage ratio
      i. GTG
      ii. STG 31.8kV : √ 3/500V
2. Secondary Resistor
   a. Type
      i. GTG Punched grids type HPR grid
      ii. STG 0.72/3kV
   b. Resistance
      i. GTG 0.1807 ohm
      ii. STG 3.14 ohm
   c. Current rating
      i. GTG 10 A, 10 s
      ii. STG 159.3 A 10 sec

xxii. Generator Circuit Breakers (4 total)

1. Manufacturer
   a. GTG (3) Siemens
   b. STG (1) Siemens
2. Rated voltage
   a. GTG 15 kV
   b. STG 15 kV
3. Rated frequency
   a. GTG 60 Hz
   b. STG 60 Hz
4. Continuous Current Rating
   a. GTG 3,000 A
   b. STG 4,500 A
5. Maximum Interrupting current rating
   a. GTG 35 kA
   b. STG 50 kA
6. Maximum interrupting time (cycles)
   a. GTG Under 5
   b. STG Under 5
7. Maximum closing time (cycles)
   a. GTG 55 ± 5 ms

b. STG 55 ± 5 ms

8. BIL rating
   a. GTG 110 kV
   b. STG 110 kV
9. Interrupting medium
   a. GTG Vacuum
   b. STG Vacuum

xxiii. Generator Step-Up Transformers (4 total)

1. Manufacturer
   a. GTG (2) Hyosung
   b. GTG (1) Hyosung
   c. STG (1) Hyosung
2. Models/Voltage Ratio
   a. GTG (2) 115/13.8kV YNd1 NLTC(HV)
   b. GTG (1) 115/13.8/11(22)kV YNd1d1 NLTC(HV)
   c. STG (1) 115/13.8/11(22)kV YNd1d1 NLTC(HV)
3. Maximum Continuous Rating
   a. GTG (2) 61 MVA
   b. GTG (1) H-X: 61 MVA, H-Y: 68 MVA
   c. STG (1) H-X: 95 MVA, H-Y: 68 MVA
4. Rated temperature rise
   a. GTG (2) Winding: 65 °C
   b. GTG (1) Winding: 65 °C
   c. STG (1) Winding: 65 °C
5. Basic Insulation Level (HV winding, neutral of HV winding, LV winding, neutral of LV winding)
   a. GTG (2) 550 kV, 110 kV, 110 kV,
   b. GTG (1) 550 kV, 110 kV, 110 kV,
   c. STG (1) 550 kV, 110 kV, 110 kV,
6. Type of tap changer and no./ratio of taps
   a. GTG (2) NLTC ±2 x 2.5%
   b. GTG (1) NLTC ±2 x 2.5%
   c. STG (1) NLTC ±2 x 2.5%
7. Type of Cooling
   a. GTG (2) ONAN/ONAF/ODAF
   b. GTG (1) ONAN/ONAF/ODAF
   c. STG (1) ONAN/ONAF/ODAF
8. Type of Connection
   a. GTG (2) HV: Overhead wire, LV: NSPB
   b. GTG (1) HV: Overhead wire, LV: NSPB
   c. STG (1) HV: Overhead wire, LV: NSPB
9. Vector Group
   a. GTG (2) YNd1
   b. GTG (1) YNd1d1
   c. STG (1) YNd1d1

xxiv. Medium Voltage Switchgears (11 & 6.9 kV)

1. Manufacturer

a. 11 kV LS VINA
b. 6.9 kV LS VINA

2. Standard
a. 11 kV IEC 62271-200
b. 6.9 kV IEC 62271-200

3. Rated voltage
a. 11 kV 12/11 kV
b. 6.9 kV 7.2/6.9 kV

4. Rate insulation level, low frequency/impulse
a. 11 kV 28/75 kV
b. 6.9 kV 20/60 kV

5. Momentary asymmetrical current rating
a. 11 kV 31.5 kA
b. 6.9 kV 31.5 kA

6. Breaker interrupting time
a. 11 kV 78.75 kA
b. 6.9 kV 78.75 kA

7. Breaker closing time
a. 11 kV ≤60 ms
b. 6.9 kV ≤60 ms

8. Bus material and rating
a. 11 kV Cu & 1250A
b. 6.9 kV Cu & 1250A

9. Type of enclosure
a. 11 kV Solution Power S24
b. 6.9 kV Solution Power S24

10. Breaker Type
a. 11 kV VH-20H
b. 6.9 kV VL-06H

11. Short time current rating, 3 sec
a. 11 kV 31.5 kA/ 3s
b. 6.9 kV 31.5 kA/ 3s

xxv. 115kV Overhead Transmission Line to Harmon substation
xxvi. Unit Aux Transformers (2)
xxvii. Non-Segregated Phase Bus Duct (NSPB)
xxviii. UPS System
xxix. Electrical Protection System
xxx. Lighting Systems
xxxi. Cathodic Protection Systems
xxxii. Sampling and Analyzing System
xxxiii. Vibration Monitoring System (VMS) for GTG and STG
xxxiv. Weather Station

b. Battery Energy Storage System (25 MW)
i. Siemens, Hyosung, Hyundai Electric
1. SIESTARTTM/PCS & Li-ion Battery
a. Storage type Chemical batteries and PCS
b. Battery chemistry Li-ion Type

c. Life Cycle 30 years (Replacement of the ESS might be required at the end of its operating life to ensure that the ESS remains fully functional and operational thought the entire 30-year period)

ii. Inverter
1. Power Electronics
a. FP2500K
i. DC voltage 708-1310 VDC
ii. AC voltage 500 VAC
iii. # of Phases 3
iv. MVA Capacity 2.5 MVA
v. Power factor range (Later)
vi. IEEE 1547 compliant Yes
vii. Total harmonic distortion (THD% voltage, open circuit
1. <3% per IEEE519

iii. Capable to support an increase in system load up to 15 MW for up to 30 mins.
iv. If single unit trips, BESS will provide backup power up to 25 MW. Will be online in less than 500 ms. Minimum duration of 30 mins.
v. Will be available continuously and available at any time.

c. 115 kV Switchyard
i. Supplier GE
1. Standard IEC
2. Rated voltage 115 kV
3. Rate insulation level, low frequency/impulse 260kV/550kV
4. Momentary asymmetrical current rating 100 kA
5. Breaker interrupting time ≤60 ms
6. Bus material and rating Al or Cu, 2000A
7. Breaker type Dead tank
8. Breaker supplier GE
9. Short time current rating, 3 sec 40 kA, 3sec

d. Reciprocating Engine Generators - Diesel
i. Capable of power output in combination with GT's excess power generation, to meet 64.5 MW of additional output
1. Capacity 2.5 MW each(gross)
2. Rating LTP limited time power as per ISO 8528

e. SCADA
i. Provided between substation and Harmon substation with voice, data and protection of 115kV and all major electrical equipment and turbine generators.
ii. Includes monitoring and leak detection of entire ULSD pipeline

f. Water Treatment Plant
i. Primary Treatment
1. Dissolved air flotation unit
a. 2 x 50% steams
b. Rate capacity of each steam 494.7 gpm (112.3 m^3/hr)

ii. Demineralized Water Treatment
    1. UF + RO + MBP
        a. 2 x 100% steams
        b. Rated capacity of each steam 17.6 gpm (4 m^3/hr)
iii. Water Quality Assumptions
    1. TDS: 600 mg/L
    2. Hardness: 300 mg/L as CaCO3

g. Storage Tanks
i. Raw Water Tanks (2)
    1. 5,090,000 gal each (19,300 m^3)
ii. Demineralized Water Tanks (2)
    1. 13,000 gal each (50m^3)
iii. Fuel (Ultra Low Sulfur Diesel) Storage (2)
    1. 83,000 bbl each (13,300 m^3)
        a. Fixed cone roof
        b. 30 day capacity at 100% load at RSC
iv. Fuel (Ultra Low Sulfur Diesel) Day Tank (1)
v. Acid
    1. 3 m^3
vi. Caustic
    1. 3 m^3

h. Fuel (ULSD) Handling
    1. Unloading Pump (1x100%)
    2. Pumps for Gas Turbine (2x100%)
    3. Pump for BOP (1X100%)
    4. Pumps at GPA Fuel Storage Facility

i. Natural Gas System
i. Maximum fuel gas required 8,500 scfm per GT (30 ton/hr for Facility)
ii. Maximum flow rate required during startup 1,900 scfm per GT
iii. Minimum flow rate at ignition 460 scfm per GT
iv. Minimum pressure for base load at terminal point 60 bar @ 40°C
v. Allowable % variation in supply pressure
    1. Steady state ±0.5 bar (±7.252 psi)
    2. Load changing ±0.1 bar (±1.45 psi)
vi. Allowable temperature range 5-392°F and 36°F above dew pt
vii. Piping Material CS or equal
viii. Corrosion allowance 1 mm
ix. Filter per GT (1)
    1. Vertical
x. Gas Treatment Skids (2)
    1. Located outdoors
xi. Drains Vessel for Facility (1)
    1. ASME w/ 1mm corrosion allowance
xii. Metering System
    1. Flow meters (2 per GT, total and pilot)
xiii. Chromatograph

j. Waste Water Treatment System
    i. Oil Water Separator (1x100%)
    ii. Ponds (4 total)
    iii. Pumps (6 total)
    iv. Vacuum Pump
    v. Chemical Dosing Tanks and Pumps (4 total)

2. Emissions Guarantees (from 50%-100% GT Load)
    a. Combined Cycle Natural Gas
        i. NOx 5 ppmvd
        ii. SO2 n/a
        iii. CO 5 ppmvd
        iv. PM 6 mg/Nm^3
        v. VOC (CH4) 5 ppmvd
    b. Combined Cycle ULSD
        i. NOx 5 ppmvd
        ii. SO2 3 ppmvd (max 14 ppm sulfur in fuel)
        iii. CO 5 ppmvd
        iv. PM 10 mg/Nm^3 (70%-100% GT load), 12 mg/Nm^3 (50%-70% GT load)
        v. VOC (CH4) 12 ppmvd

3. Plant Performance
    a. Plant Availability
        i. Annual Availability (Guarantee) 96.11%
        ii. Maintenance Outages 0%
        iii. Scheduled Outages 1.89%
        iv. Forced Outages (Guarantee) 2%
    b. Heat Rates
        i. Unit ULSD
            1. Combustion Turbine in Simple Cycle
                a. Power Level % and Heat Rate (HHV) MBtu/kWh
                    i. 100% 9.836
                    ii. 85% 10.246
                    iii. 65% 10.027
                    iv. 50% 10.751
                    v. 25% 11.331
                    vi. 10% 17.963
                    vii. Minimum Load 17,963
        ii. Facility ULSD
                a. Power Level % and Heat Rate (HHV) MBtu/kWh
                    i. 100% 6.663
                    ii. 85% 6.784
                    iii. 65% 6.780
                    iv. 50% 6.994
                    v. 25% 7.801
                    vi. 10% 11.443
                    vii. Minimum Load 11.443
        iii. Facility Natural Gas

a. Power Level % and Heat Rate (HHV) MBtu/kWh
    i. 100% 6.799
    ii. 85% 6.936
    iii. 65% 6.934
    iv. 50% 7.186
    v. 25% 8.001
    vi. 10% 11.700
    vii. Minimum Load 11.700

c. Performance (at new and clean conditions)
    i. Facility ULSD
        1. Plant Gross Output 203,750 kW
        2. Aux Power & Losses 4,935 kW
        3. Step-Up Transformer Losses 815 kW
        4. Total Losses 5,750 kW
        5. Net Power Output at Delivery Pt 198,000 kW
    ii. Noise Level No more than 3 dba above the measured ambient noise level at property boundary.
    iii. Facility Natural Gas
        1. Plant Gross Output 203,270 kW
        2. Aux Power & Losses 4,460 kW
        3. Step-Up Transformer Losses 810 kW
        4. Total Losses 5,270 kW
        5. Net Power Output at Delivery Pt 198,000 kW
        6. Noise Level No more than 3 dba above the measured ambient noise level at property boundary.
    iv. Facility General
        1. Maximum emergency generation level capacity that may be available during system declared emergencies
            a. 201 MW net (ULSD), 208 MW net (NG)
        2. Minimum emergency level used during system declared emergencies (emissions not compliant)
            a. 20 MW net
        3. Net capability maximum level that the facility could be dispatched during normal system conditions
            a. 198 MW net
        4. Interim operating level at which the facility operates the most efficiently, lowest heat rate
            a. 198 MW net
        5. Minimum operating level that the facility could be dispatched during normal system conditions, must run level
            a. 40% of 198 MW complying with environmental requirements

d. Fuel Composition
    i. ULSD
        1. Composition
            a. Carbon (C) 86.7 wt%
            b. Hydrogen (H) 13.3 wt%
        2. Higher heating value 43.321 Btu/kg

3. Higher heating value 5.76 MMBtu/bbl as per ASTM D240-02 (836.3 kg/m^3)
4. Lower heating value 40.671 Btu/kg
5. HHV/LHV ratio 1.065

ii. Natural Gas

1. Composition
   a. Methane 89.3 vol%
   b. Ethane 7.7 vol%
   c. Propane 2.3 vol%
   d. I-Butnae 0
   e. N-Butane 0.5 vol%
   f. N-Pentane 0.010 vol%
   g. Hexane 0
   h. Heptane 0
   i. Carbon Dioxide 0
   j. Carbon Monoxide 0
   k. Hydrogen 0
   l. Hydrogen Sulfide 0
   m. Oxygen 0
   n. Nitrogen 0.19 vol%
   o. Sulfur contents 0
   p. Argon 0
   q. Helium 0
   r. Water 0
   s. Other 0
2. Higher heating value 51.704 Btu/kg
3. Higher heating value 41.652 MJ/SCM
4. Lower heating value 46.712 Btu/kg
5. HHV/LHV ratio 1.107
6. Fuel gas temperature at terminal point min 40 °C
7. Fuel gas pressure at terminal point min 60 barg

4. Site Conditions
   a. Ambient air temperature 88.9 °F (31.6 °C)
   b. Barometric pressure 14.57 psia (1005 mbara)
   c. Wet bulb temperature 78.1 °F (25.6 °C)
   d. Rainfall intensity (Return period =100 yr) 119.38 mm/hr
   e. Basic wind speed 78.2 m/s (IBC 2009)
   f. Seismic condition Short period spectral response parameter Ss: 1.5 (IBC 2009). 1 second period spectrual response parameter S1: 0.6 (IBC 2009)

SCHEDULE 2

TECHNICAL LIMITS AND CONTRACTED CHARACTERISTICS

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1 CHARACTERISTICS OF THE FACILITY

The Facility is designed to produce the Contracted Facility Capacity at the Reference Site Conditions.

The Facility consists of three (3) SGT-800 gas turbines and generators, three (3) heat recovery steam generators, one (1) steam turbine and generator, a distributed control system (DCS), and mechanical and electrical support system.

The gas turbines are single shaft industrial type with modular design and burns natural gas and ULSD.

Heat recovery steam generators (HRSG) are of drum type, horizontal, triple pressure, reheat.

The steam turbine is modular constructed. A single flow HP turbine is connected with another single flow IP/LP turbine. The steam turbine is of a tandem compound design.

The exhaust gas from the gas turbine will be passed through the HRSG. Gases exiting from the HRSG will be discharged to the atmosphere through the main stack.

The steam generated from the HRSG will be delivered to the steam turbine of reheat condensing type. Exhaust steam leaving from the steam turbine will be condensed in the condenser.

The condenser is axial exhaust type. Condensate pumps will convey condensate from the condenser hot well to the LP economizer section of HRSG. HP/IP HRSG feedwater pumps for Plant common will deliver feedwater from the condensate pump discharge to each HP and IP economizer section of the HRSG.

Cooling water for condenser comes from closed circuit circulating water system with cooling tower.

Electricity produced by each generator is delivered to the Guam grid via step-up transformers.

A battery energy storage system (BESS) shall be provided to support the spinning reserve, single unit trip loss requirement, regulation performance and transient response.

Diesel generators shall be provided to cover the required electricity during emergency shutdown, black starting of the Facility and single unit trip loss.

2 CONTRACTED FACILITY CAPACITY

Contracted Facility Capacity for ULSD Operation: 198 MW

Contracted Facility Capacity for Natural Gas Operation: 198 MW

3 DELIVERY POINT

3.1 Electrical

The generated power from GTG and STG will be connected to Harmon substation and Tamuning substation via overhead transmission line. Two (2) lines will be connected to Harmon substation which is around 400meters from Power plant substation and one line will be connected to Tamuning substation after intercept existing transmission line between Harmon substation and Tamuning substation.

3.2 Fuel (ULSD and Natural Gas)

The delivery point for ULSD and Natural gas supply shall be at the power plant fence

4 POWER FACTOR RANGE

Minimum power factor of Generator will be 0.8 Lagging.

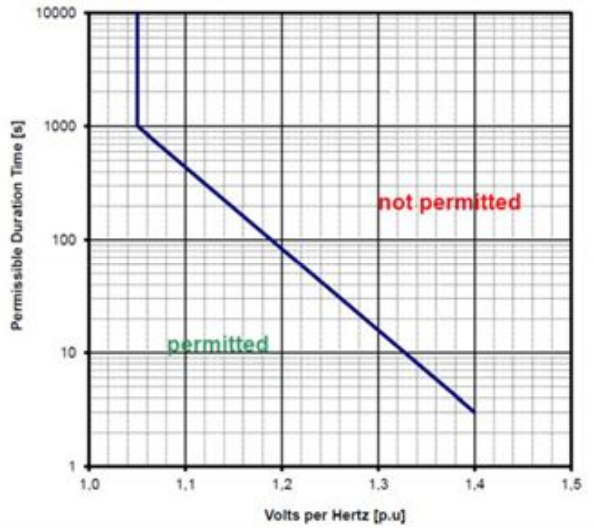
5 TECHNICAL LIMITS

5.1 Frequency Limit

GTG & STG shall remain connected to the Grid System from frequency ranges of 57.0 – 63.0 Hz in accordance with GPAPRC-001

(1) GTG
Below 58.2 Hz: max 90 min
Between 61.2 and 61.8 Hz: max 90 min
Between 61.8 and 63 Hz: max 30 min, max total 120 min.

(2) STG
Continuous operation: +2% ~ -2% / Others condition: As below;



5.2 Diesel Generators for System Reserve

Diesel generators shall be installed to provide system reserve, which are available to dispatch at any time, 24 hours a day.

The diesel generators are operated with ULSD and comply with Tier 2 emissions limit of U.S. EPA New Source Performance Standards.

As the diesel generators will be in operation as a back-up to the gas turbine units, its rating shall be of Limited-time running power(LTP) as per ISO-8528. The LTP is the maximum power which a generating set is capable of delivering for up to 500 hours per year of which a maximum of 300 hours is continuous running.

5.3 Regulation Performance

A single combustion turbine is capable of ramping up/down as follows.

Fuel Type	Ramp rate of single Unit	Remark
ULSD	10.0 MW/min	at 50~100% GT load (@RSC)
Natural Gas	12.5 MW/min	at 50~100% GT load (@RSC)

If a ramping up operation is necessary beyond GT output capability, BESS will be in operation within its charged capacity.

If a ramping down operation is necessary below GT 50% load, emission limit may not be compliant.

An emergency shutdown of a unit may be necessary to meet ramping down rate.

Expected ramping rates for each operating case are as follows.

Fuel Type	Operating Case	Ramp Rate	Remark
ULSD	1GTG + 1STG	> 25MW /min	BESS operation is necessary for ramping up.
	2GTG + 1STG	> 25MW /min	BESS operation is necessary for ramping up.
	3GTG + 1STG	> 25MW /min	
Natural Gas	1GTG + 1STG	> 25MW /min	BESS operation is necessary for ramping up.
	2GTG + 1STG	> 25MW /min	
	3GTG + 1STG	> 25MW /min	

5.4 Transient Response

A simulation for the transient frequency response for SGT-800 has been performed with a minus (–) 3 Hz frequency disturbance with conditions as stated below.

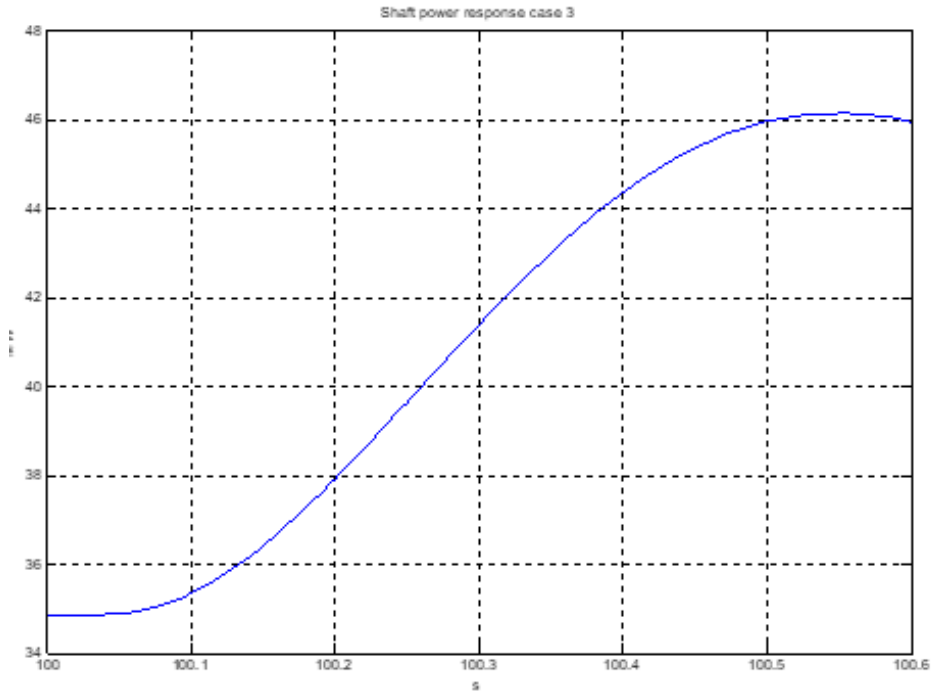
The result is the simulation shows that the specification requirements are fulfilled based on the conditions as stated.

Conditions

The following conditions are valid for the simulations:

- The SGT-800 runs in Isochronous Operation Mode on an island grid.
- Full load (100%) rating is 49.8 MW.
- The resulting shaft power responses when controlling back to the nominal frequency of 60 Hz is simulated.
- From a load of 70% (34.86 MW) a frequency step disturbance of -3 Hz is applied to the Frequency Controller

The graph shows compliance with that the required 5 % in 1 second and 10 % in 2 seconds (graph shows about 30% in 0.6 s)



As the above simulation result is based on the isochronous mode, BESS could be necessary to achieve 5% in 1 second and 10% in 2 seconds in reality.

5.5 Short Circuit Energy

Proposed plant has 3-3-1 configuration for combine cycle with three (3) GTGs and one (1) STG. This plant will operate one (1) GTG and one (1) STG as a minimum operation mode. During this operation, the minimum short circuit of 700MVA is available at the 115kV POI and additional synchronous condenser is not required at all time for this plant.

Even the loss of the largest point of failure within the plant, the STG unit, the resulting after the outage still maintains more than 700MVA short circuit requirement from three (3) operating GTG units. In this case, proposed plant can supply active and reactive power for grid requirement at all condition without synchronous condenser. (In this case, more than 20MW active power and more than 700MVA short circuit capacity can be supplied to grid of Guam.)

For the calculation sheet as follows:

Scenario if 1 GT + 1 ST operating on grid

Equipment	Synchronized to grid	Rated MVA	Generator Subtransient reactance Xd" (sat) %	Step up transformer impedance Usc %	Fault level, HV side MVA
GTG 1	Yes	61	11.3%	10.0%	286
GTG 2	No	61	11.3%	10.0%	286
GTG 3	No	61	11.3%	10.0%	286
STG	Yes	95	12.0%	10.0%	432
Total					718

Note : Indicative figures, to be decided for the case design

5.6 Fuel Specifications

The Facility should be operated in accordance with the Fuel Specifications specified in Schedule 6 and 7.

5.7 Gaseous Emission Limits (during combined cycle operation)

Pollutant	NOx (ppmdv)	CO (ppmdv)	Particulate Matter (mg/Nm3)	SO2 (ppmdv)	VOC (ppmdv as CH4)	Lead (ppmdv)
Concentration (NG/ULSD)	5 / 5	5/ 5	6 / 12	3 / 3	5/12	**N/A

Note 1 : ppmdv is at 15% reference O2, dry condition

Note 2 : mg/Nm3 is at 15% reference O2, 1 atm, 0 Deg.C, dry condition

Note 3: max. sulfur content ULSD 14ppm

Note 4: **Lead is not predictable but less than 100 ton per year is expected

Note 5: Combustion turbine load is higher than 50%.

5.8 Aqueous Emission Limits

Cooling tower effluent quality is limited to US EPA/NDPES permit No. GU0020141 "Table 1". Details of table 1 is as following:

Parameter	Maximum allowable discharge limit			
	Concentration and loading			
	Average Monthly	Average Weekly	Maximum Daily	Units
Flow rate	12	(1)	(1)	MGD
Biochemical Oxygen Demand (5-day)	30	45	-	mg/L
	3002	6760	-	lbs/day
	Not applicable			%
Total Suspended Solids	30	45	-	mg/L
	3002	6760	-	lbs/day
	Not applicable			%
pH (hydrogen ion)	Within 6.5 and 8.5 at all times			pH units
Settleable solids	1	-	2	mL/L
Oil and grease, total recoverable	10	-	15	mg/L
Enterococcus	35	-	104	CFU/100ml
Chlorine, total residual (TRC)	1.5	-	2.46	mg/L
Temperature	(1)	-	(1)	°C
Ammonia	(1)	-	(1)	mg/L
Chronic toxicity	(1)	-	(1)	Pass/Fail
Priority Pollutant scan	(1)	-	(1)	-
Ambient Monitoring	(1)	-	(1)	-

Note : No effluents limits are set at this time, but monitoring and reporting is required.

Other wastewater from power plant such as Water treatment rejection, drain, Oily wastewater, Domestic Sewage, Blow-down from HRSG will be discharged to sewer

connection for further treatment by GWA.

5.9 Step-up Transformer Ratings

Step-up Transformer for GTG : 13.8kV / 115kV, 61MVA*, ONAN/ONAF/ODAF

Step-up Transformer for GTG : 11(or 22)kV / 13.8kV / 115kV, H-X : 61MVA*, H-Y : 68MVA, ONAN/ONAF/ODAF

Step-up Transformer for STG : 11(or 22)kV / 13.8kV / 115kV, H-X : 95MVA*, H-Y : 68MVA, ONAN/ONAF/ODAF

Note

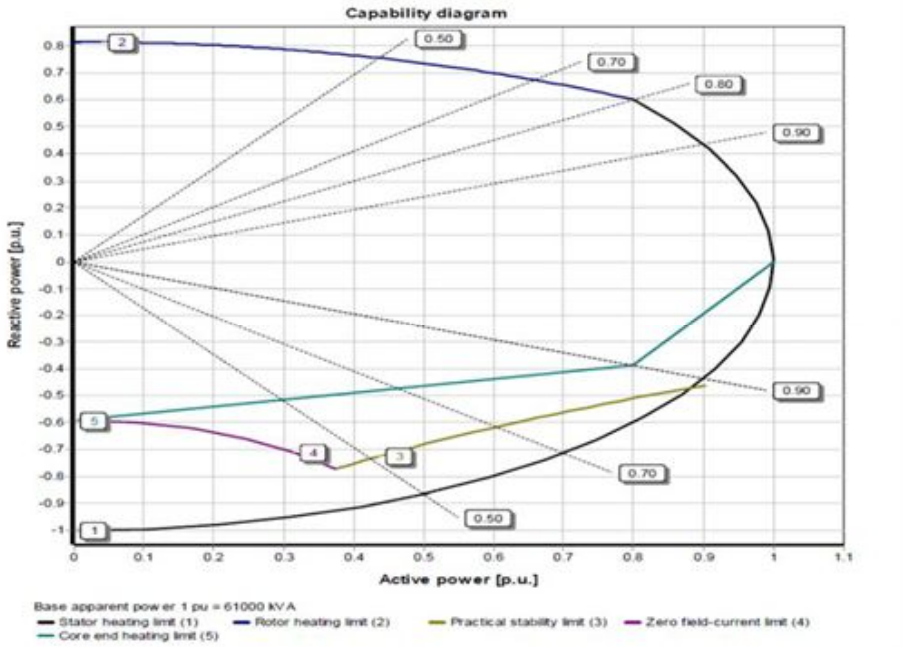
*: Rating will be decided greater than generator output at detail design stage.

5.10 Black-start Capability

Black-start capability will be via operation of the BESS

5.11 Generator Capability Curves

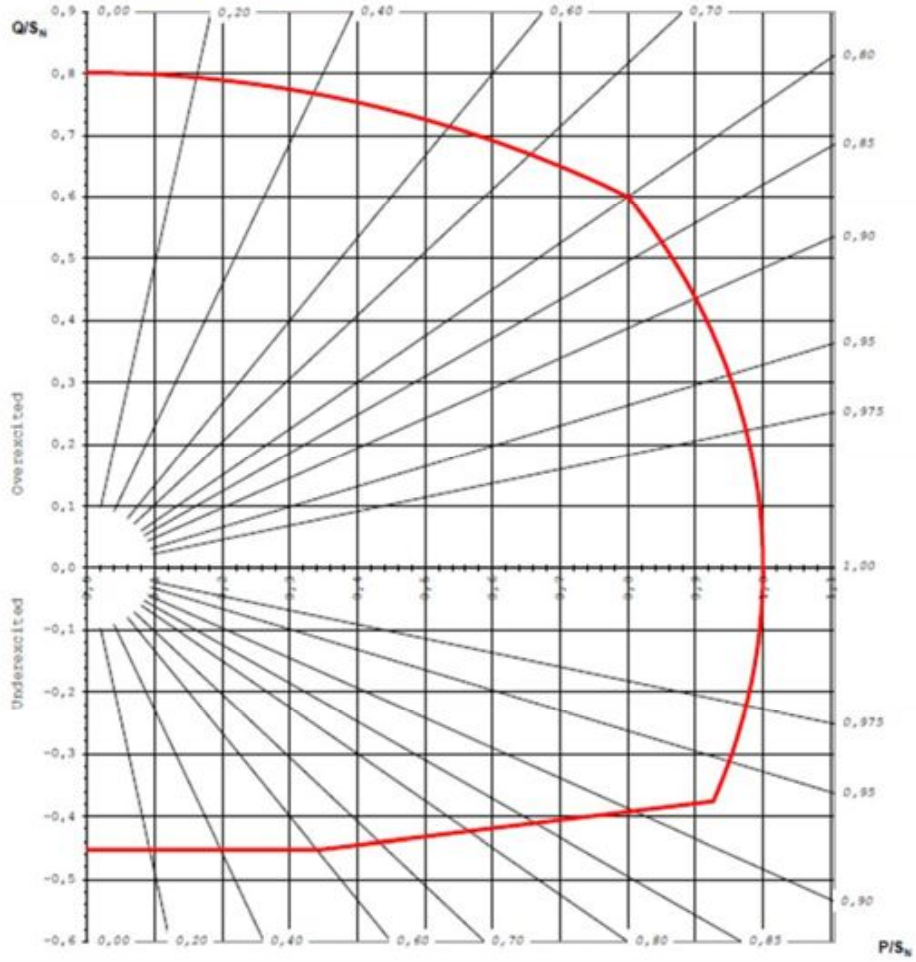
GTG Capability Curves



STG Capability Curves

Generator - Type: **SGen6-100A-2P 092-26 M07**

Load Point	Rated	
S_N =	93,125	MVA
U_N =	13,80	kV
I_N =	3,896	kA
f_N =	60	Hz
PF =	0,80	
$T_{Cold\ Air}$ =	50,0	°C



6 MAJOR OVERHAUL

Major Overhaul shall be any A, B, or C Level inspection as defined by the manufacturer Based on 3 years ULSD operation and NG operation for the remaining term the Final End of the Term inspection before handover is a Level A inspection for all generation units.

Inspection per Unit	Level – A	Level – B	Level - C
Periodicity	15,000 EOH	30,000 EOH 500 EOC	60,000 EOH 1,500 EOC
Duration	3days	18days	23days

* EOH : Equivalent Operating Hour as defined by the manufacturer
* EOC : Equivalent Operating Cycle as defined by the manufacturer

SCHEDULE 3
COMMISSIONING AND TEST

1. Tests on Completion

1.1 General

On completion of construction, the Project Company shall undertake a series of tests to demonstrate that the Facility operational capability, performance and reliability are within the limits agreed in the ECA. These tests shall be witnessed by GPA, and as a minimum requirement these tests shall include:

a. Functional Tests

b. Energy Conversion Agreement Tests

c. Performance and Facility Reliability Tests

1.2 Test Procedures

1) The Project Company shall develop specific test procedures for each test, and shall be provided to GPA for review at least one hundred twenty (120) days prior to the start of the tests.

2) The test procedures shall include, but not be limited to, the following information:

a. Administrative Procedures

b. Test Equipment

c. Test Instrumentation to be installed

d. Station Instrumentation to be used

e. Test Methods

f. Test Standards to be followed

g. Sample Data Sheets

h. Test Calculation Methods

i. Instrument Calibration Sheets

j. Pre-test Uncertainty Calculation

1.3 Test Results Calculations

The Project Company shall be responsible for providing the final test calculations. The test results calculations shall follow the methods as described in the test procedures.

1.4 Test Measurement Uncertainty

1) The Project Company shall be responsible for pre-test and post-test uncertainty analysis to verify the quality of the test performed. The uncertainty analysis is not to be applied as a commercial test tolerance, allowance, or margin to the test results. No tolerances in calculating Facility performance test results will be permitted for measurement uncertainty.

1.5 Test Reports

1) The Project Company shall submit to GPA a Preliminary Test Report after completion of each test. Within five (5) business days, GPA shall state whether it concurs, or disputes the results of the test. If GPA disputes the results, it shall provide in detail the reasons for dispute. The test reports shall include the test results, calculations, uncertainty analysis results, and shall also include as an appendices the raw test data, and test procedure that was followed.

2) Within fifteen (15) business days after receiving the fuel analysis data, the Project Company shall submit a Final Test Report, or a notification of a retest in the event of a dispute.

1.6 Functional Tests

1) The Project Company shall perform the following tests:

a. Test and start-up of auxiliaries

b. Control systems tests

c. Synchronizing checks

d. Electrical Protective devices tests

e. Mechanical protective device tests

f. Stability tests – AVR, Stable minimum load, minimum load while in compliance with emissions, full load rejection test and step load change rejection tests

g. Automatic startup and loading time tests for hot and cold starts

h. BESS function test (Single unit trip)

* The total response time to produce 100% capacity of BESS shall be taken less than 500ms

i. Short Circuit energy checks

* A minimum level of 700 MVA of Short Circuit energy at the 115 kV POI when operating
at 20 MW or higher real power output.

1.7 Environmental Compliance Tests

1) The environmental compliance test including the air emission, effluent water quality, noise level, and other applicable tests will be performed to demonstrate compliance with the requirements of environmental permits.

2) For the Fossil Fuel Fired Component, the Project Company shall test the plant for emissions on both ULSD and Natural Gas, when it becomes available, to ensure that it meets the air permit requirements.

1.8 Initial Net Dependable Capacity Test and Heat Rate

The Heat Rate and some other test requirements below are only applicable to the Facilities including Fossil Fuel Fired Component.. For the Facilities including Fossil Fuel Fired Component, the Heat Rate and Initial Dependable Capacity Tests shall be conducted on both ULSD and Natural Gas, when it becomes available.

1) A Heat Rate to establish benchmark for the end of term tests and Initial Dependable Capacity Test shall be completed prior to Commercial Operation.

2) The tests shall be done in accordance with the ASME PTC-46 Performance Test Code on Overall Plant Performance, as well as the applicable ASME Performance Test Code relevant to the generation technology.

3) The Project Company shall demonstrate the ability of the plant to achieve the Contracted Facility Capacity established in the ECA and provide to GPA information about the Facility Heat Rate. The performance test results shall be corrected to Site Reference Conditions using the Facility correction curves attached in Schedule 4 included in the approved test procedure using the calculation methods provided in such test procedure. Tested Dependable Capacity and Heat Rate corrections shall be allowed for:

a. Ambient dry bulb temperature

b. Ambient relative humidity

c. Barometric Pressure

d. Generator Power Factor

e. C/H ratio of the fuel

f. Wet bulb temperature

4) Plant capacity shall be tested at normal maximum capacity without exceeding any manufacturers limitations. The plant must comply with all local, state, and federal environmental permits throughout the duration of the tests. The uncorrected net power output of the plant, in kWh, will be measured at the Delivery Point.

5) The Initial Dependable Capacity (DC) Test shall be undertaken during the Reliability Test, and shall form the basis of the declared Dependable Capacity as defined in the ECA.

6) The duration of the DC Test shall be no less than 1 hour, during which time the plant will operate at its normal Dependable Capacity while supplying the normal station auxiliary power demand. The Facility DC in MW will be determined by dividing the sent out power in MWh (as determined by the revenue meter readings at the start

and end of the test and corrected to Site Reference Conditions) by the test duration period in hours.

7) All costs for performance tests will be borne by the Project Company.

8) The Project Company shall perform testing to ensure that the Facility meets functional requirements including the Dependable Capacity, and benchmark heat rate test for end of term tests.

9) The Project Company will determine the startup duration, from initiation to full Plant Net Capacity, both cold and warm starts (Startup Duration Test).

1.9 Reliability Test

1) The Project Company shall conduct a Reliability Test for a continuous seven (7) day (168 hour) test period. During this time the Facility shall operate continuously at Dependable Capacity for at least 72 hours, and for the rest of the period at any other load as may be required by GPA.

2) The equipment is considered available when the generator breaker is closed and the generator is producing positive net power output. Should the equipment become unavailable due to fault of the Project Company, the 7-day time period will restart at GPA's convenience and the to-date demonstrated availability will be lost.

3) Should any failure occur in any portion of the Facility, due to or arising from faulty design, material, workmanship, or operation which requires or causes the Facility available capacity to be reduced, a new Reliability Test shall be undertaken after rectification has been completed.

4) The Facility capacity and reliability tests shall be carried out while the Facility is operating in compliance with the specified environmental requirements.

5) All costs associated with equipment repair or correction shall be borne by the Project Company.

6) Battery Energy Storage System Tests

1. Capacity in MW and MWH
2. Response time as specified in Schedule 1 during a simulated system event
3. Charge rate
4. Discharge Rate
5. Round trip efficiency
    a. As measured from the high side of the step-up transformer

2. Tests Required Throughout the Life of the Plant

2.1 Annual Dependable Capacity Test

1) The Project Company shall perform an annual Dependable Capacity Test, to demonstrate the Facility Dependable Capacity. The performance shall be corrected to base conditions by the Facility correction curves attached to Schedule 4, as described in the calculation methods provided in the test procedure. Output and heat rate corrections shall be allowed for:

a. Ambient dry bulb temperature

b. Ambient relative humidity

c. Barometric Pressure

d. Generator Power Factor

e. C/H ratio of the fuel

f. Wet bulb temperature

g. GPA shall have the right to request that the Facility's heat rate be tested concurrently with any Dependable Capacity Test and Project Company shall be obligated to comply with such request.

2) Plant capacity shall be tested at normal maximum capacity without exceeding any manufacturers limitations. The plant must comply with all local, state, and federal environmental permits throughout the duration of the tests. The uncorrected net power output of the plant, in kWh, will be measured at the Delivery Point.

3) The duration of the DC Test shall be no less than 1 hour, during which time the plant will operate at its normal Dependable Capacity while supplying the normal station auxiliary power demand. The Facility DC in MW will be determined by dividing the sent out power in MWh (as determined by the revenue meter readings at the start and end of the test and corrected to Site Reference Conditions) by the test duration period in hours.

4) All costs associated with equipment repair or correction shall be borne by the Project Company.

3. Tests and Inspections Prior to Facility Turnover to GPA in the End of the Term

1. Project Company shall perform tests one year prior to End of Contract Term to demonstrate the condition and performance of the plant. Tests shall include Dependable Capacity, heat rate, emissions and startup duration.

2. Project Company will allow GPA, or their designated agent, access to inspect and evaluate the plant, facilities and equipment.

3. Project Company shall correct, repair or replace deficiencies found during the turnover tests and inspections. All identified deficiency items during the turnover test must be agreed and documented.

4. Detail tests for each phase

Project Company shall perform following tests per each phase.

DESCRIPTION	ULSD PHASE	Natural Gas PHASE
Functional tests		
Test and start-up of auxiliaries	O	O
Control system tests	O	O
Synchronizing checks	O	
Electrical protective devices tests	O	
Mechanical protective device tests	O	
Stability tests	O	
Automatic startup and loading time tests	O	
Environmental compliance tests		
Air emission	O	O
Effluent water quality	O	
Noise level	O	
Initial dependable capacity test	O	O
Benchmark heat rate tests	O	O
Reliability test	O	

5. Functional tests for Reserve Capacity

Project Company shall perform following tests for Reserve Capacity at ULSD phase.

At Manufacturer's Factory

- Engine start-up system
- Cold starting
- Engine alarm and shutdown functions
- Generator shutdown functions
- Status/Alarm/Trip/Shutdown indication

- Operation of battery charger

At Site

- Startup test
- Synchronizing
- Load test

SCHEDULE 4

DETERMINATION OF TARIFF

1 Introduction and Definitions

1 This Schedule 4 shall be read in conjunction with, and is subject to, the provisions of the ECA of which this Schedule 4 is a part. To the extent that any provision of this Schedule 4 is inconsistent with any provision of the ECA, the provision of the ECA shall prevail. References to Articles and Sections are to Articles and Sections of this Schedule 4 unless indicated otherwise. References to Tables and Annexes are to the Tables and Annexes to this Schedule 4.

2 Payments to be made under the ECA shall be calculated in accordance with this Schedule 4 and adjusted as provided herein.

3 The procedures for the presentation and payment of invoices as set out in Article 13 of the ECA shall apply to all invoices referred to in this Schedule 4.

1.1 Definitions -

Capitalized terms used and not defined herein shall have the meaning set forth in the ECA**.** Without prejudice to the generality of Section 1.1, for the purposes of this Schedule 4 the following words and phrases shall bear the meanings ascribed thereto:

"Capacity Charge" has the meaning set forth in Section 3 below.

"Energy Charge" has the meaning set forth in Section 4 below.

"**Fixed Capacity Charge**" means the charge calculated in accordance with paragraph 3.1 of Section 3 below

"**Fixed Operations and Maintenance Charge**" means the charge described in Section 3.2 below.

"**Fuel Charge**" means the charge calculated in accordance with paragraph 4.2 of Section 4 below.

"**Variable Operations and Maintenance Charge**" means the charge calculated in accordance with paragraph 4.1 of Section 4 below.

"**Supplemental Charge**" has the meaning set forth in Section 5 below.

"Index" means the US Bureau of Labor Statistics, Current Employment Statistics, transportation and public utilities, average hourly wages of production workers, CES4422000008. The index to be used for preparing invoices in accordance with Article 13 of the ECA in any Contract Year shall be the index published closest to the date preceding third month.

"**Index on Reference Date**" means 36.84.

"Reference Date" – is the Bid Date which is April 2nd 2019.

2 Tariff components

The Tariff charges consist of three components:

a) Capacity Charge, which is comprised of the Fixed Capacity Charge (FCC) plus the Fixed Operations and Maintenance Charge (FOMC) as set out in Section 3;

b) Energy Charge, which is comprised of the Fuel Charge (FC) plus the Variable Operation and Maintenance Charge (VOMC) as set out in Section 4; and

c) Supplemental Charge (SC), which includes the charges set forth in Section 5 that are not included in the Capacity Charge or the Energy Charge.

3 Capacity Charge

The Capacity Charge component of the Tariff is composed of two parts: (1) the Fixed Capacity Charge and (2) the Fixed Operations and Maintenance Charge, in each case for each kW of Dependable Capacity. The Capacity Charge will commence on the Commercial Operation Date and shall be payable by GPA (pursuant to the terms and conditions set forth in the ECA) on a monthly basis until the end of the Term.

3.1 Fixed Capacity Charge

The Fixed Capacity Charge (FCC) is stated for each period in USD/kW/month Table A.2.

Equation 4.1 sets forth the application of the FCC as applied to the Dependable Capacity of the Facility. In the event that a switch to Natural Gas takes place at a date later than the beginning of Contact Year 4, , the Dependable Capacity shall be corrected as set forth in Schedule 11, Section 2.

Equation 3.1: Fixed Capacity Charge

Fixed Capacity Charge (US$) $= FCC_n \times DC_n \times DCCF_n$

Where:

FCC_n =	The FCC (US$/kW/month) for the n-th period of payment proposed at Bid Date
DC_n =	Dependable Capacity (kW) in n-th period provided that, if different levels of Dependable Capacity are applicable during such period, DC_n shall be the weighted average of such levels reflecting the time periods (in hours) during which each level shall have applied during the n-th period.
$DCCF_n$ =	Dependable Capacity Correction Factor for the n-th period as set out in Clause 2 of Schedule 11 to compensate additional capacity degradation for prolonged ULSD operation of the Facility in the event that the switch to Natural Gas takes place at a date later than the date falling on the Day following the date of the third anniversary from the Day upon which the Facility is Commissioned.

3.2 Fixed Operations and Maintenance Charge

The Fixed Operations and Maintenance Charge (FOMC) in USD/kW/month is set forth in Table A.3.

FOMC, as specified in Table A.3 shall be adjusted monthly for inflation by comparing the Index on the Reference Date to the Index at the time that the adjustments are being made. In the event that the switch to Natural Gas takes place at a date later than the beginning of Contact Year 4, the FOMC values specified in Table A.3 will also be corrected for certain high load operation as described in Schedule 11, Section 4. Thus, the Fixed Operations and Maintenance Charge will be calculated as follows:

Equation 3.2: Fixed O&M Charge

Fixed O&M Charge (US$) = $FOMC_n$ x CFL_n x DC_n x $DCCF_n$

Where:

$FOMC_n = \left(\frac{I_n}{I_o} \times FOMC_o \right)$

Where,

DC_n = Dependable Capacity (kW) in the n-th period.

$FOMC_n$ = Fixed O&M component defined above for the n-th period of payment (US$/kW/Month)

$FOMC_o$ = Fixed O&M as of the Reference ate (US$/kW/Month)

I_n , I_0 = Index prevailing at the n-th period of payment and on Reference Date, respectively.

$DCCF_n$ = Dependable Capacity Correction Factor for the n-th period as set out in Clause 2 of Schedule 11 to compensate additional capacity degradation for prolonged ULSD operation of the Facility In the event that the switch to Natural Gas takes place at a date later than the date falling on the Day following the date of the third anniversary from the Day upon which the Facility is Commissioned

CFL_n = Correction Factor Load for Fixed O&M component for the n-th period as set out in Clause 4 of Schedule 11 to compensate additional O&M cost for prolonged ULSD operation of the Facility in the event that the switch to Natural Gas takes place at a date later than the date falling on the Day following the date of the third anniversary from the Day upon which the Facility is Commissioned.

4 Energy Charge

The Energy Charge component of the Tariff is composed of two parts and charged for each kWh of Net Energy Output: (1) the Variable Operations and Maintenance

Charge, and (2) the Fuel Charge (if any). The Energy Charge will commence on the Commercial Operation Date and shall be payable by GPA (pursuant to the terms and conditions set forth in the ECA) on a monthly basis until the end of the Term.

4.1 Variable Operation and Maintenance Charge

The Variable Operation and Maintenance Charge (VOMC) is stated for each period in Table A.4.

The VOMC shall be adjusted annually for inflation by comparing the Index on the Reference Date to the Index at the time that the adjustments are being made.

The calculation for the Variable O&M Charge will be as follows:

Equation 4.1: Variable O&M Charge

Variable O&M Charge (US$) = $VOMC_n$ x E_n

Where:

$$VOMC_n = \left(\frac{I_n}{I_o} \times VOMC\right)$$

Where:

E_n	=	Net Energy Output (kWh) in the n-th period.
$VOMC_n$	=	Variable O&M component defined above for the n-th period of payment (US$/kWh)
$VOMC_o$	=	Escalatable Variable O&M component as of the Reference Date (US$/kWh)
I_n, I_0	=	Index, prevailing at n-th period of payment and on Reference Date respectively.

4.2 Fuel Charge

The fuel charge adjusts the consumption of fuel at the Guaranteed Heat Rate (GHR) at Site Reference Conditions (SRC) and various loads (percentages of the Facility Dependable Capacity) using ULSD and Natural Gas and the heat rate correction curves to account for changes in ambient dry bulb temperature, ambient pressure, ambient humidity, average power factor, average carbon to hydrogen (C/H) ratio of Fuel and wet bulb temperature. The need for correction for changes in the wet bulb temperature will be confirmed at the detailed design stage and during the process of GPA's review and approval of Facility Performance Test procedure. In the event that it is determined that correction for changes in relative humidity also accounts for changes in wet bulb temperature, this Schedule 4 will be amended by deleting the wet bulb correction factors Kwt_m from Equations 4.2 and 4.3 below and deleting the wet bulb correction curves from this Schedule 4. The Guaranteed Heat Rate shall not be corrected for degradation at any time during the ECA Term. However, in the event that a switch to Natural Gas takes place at a date later than beginning of Contact Year 4, Guaranteed Heat Rate shall be corrected to reflect the potential for additional degradation due to prolonged ULSD operation as set forth in Schedule 11, Section 3.

All the costs of startups and shutdowns will be borne by the Project Company regardless of whether startups or shutdowns were requested by GPA or initiated by the Project

Company. The Project Company shall be responsible for the quantity of Fuel (expressed in MMBtu) used for start-ups, shut downs, load limitations and/or Guaranteed Heat Rate compliance.

The Fuel Charge for ULSD and Natural Gas will be calculated as follows:

Equation 4.2: ULSD Fuel Charge

$FC_n = PCFR_n \times FP_n$

Where:

$PCFR_n = TFC_n – GPAF_n - REF_n – GPAF_{Tn}$

Where:

$GPAF_n$ (in MMBtu) = $\sum_{m=1}^{M}$ [$GHR_m \times GHRCF_n \times E_m \times Kdt_m \times Kbp_m \times Krh_m \times Kpf_m \times KC/HRatio_m \times Kwt_m$)] x [MMBtu / 10^6Btu]

REF_n (in MMBtu) = REGHR x REO_n x [MMBtu / 10^6Btu] Where:

FC_n = Fuel Charge in n-th billing period

n = Monthly billing period

$GPAF_n$ = GPA Fuel consumption in n-th billing period by Combined Cycle Units

$GPAF_{on}$ = GPA other Fuel consumption in n-th billing period

REF_n = Fuel consumption to generate Reserve Energy Output during the n-th period (kWh)

$GPAT_{Tn}$ = Quantity of Fuel Removed by GPA from the on-Site ULSD storage by Trucks expressed in MMBtu

$PCFR_n$ = Project Company Fuel Responsibility in n-th billing period

TFC_n = Total Fuel consumed at the Facility in n-th billing period expressed in MMBtu

FP_n = Fuel Price in n-th billing period (US$/MMBtu)

m = Dispatch metering interval (30 minutes)

M = Total number of intervals (m) during a billing period (n), which will vary from month to month depending on the actual dispatch that period.

GHRm = Guaranteed Heat Rate (Btu/kWh) for the applicable Facility in Simple Cycle or Combined Cycle mode, as the case may be, when operating on ULSD, corrected for actual load conditions existing during interval (m) that are due to GPA's Dispatch Instructions as shown in Table A.5 and Table A.7. For load conditions that are less than per GPA's Dispatch Instructions due to inability of Facility to meet GPA load requirements up to Dependable Capacity after the Facility has exceeded its Allowable Total Outages Energy for the applicable Contract Year pursuant to ECA Article **Error! Reference source not found.**, GHR_m shall be the Guaranteed Heat Rate for the load per the Dispatch Instructions.

$GHRCF_n$ = Guaranteed Heat Rate Correction Factor during n-th billing period as set out in Clause 3 of Schedule 11 to compensate additional heat rate degradation for prolonged ULSD operation of the Facility in the event that the switch to Natural Gas takes place at a date later than the third anniversary of the Day upon which the Facility is Commissioned.

E_m = Net Energy Output during the m-th interval (kWh)

Kdt_m = GHR Correction factor of each operation mode for average ambient dry bulb temperature during the m-th interval (based on Figure A.1or Figure A.7)

Krh_m = GHR Correction factor of each operation mode for average relative humidity during the m-th interval (based on Figure A.8)

Kpf_m = GHR Correction factor of each operation mode for average power factor during the m-th interval (based on Figure A.2 or Figure A.9)

KC/H $Ratio_m$ = GHR Correction factor for average ULSD C/H ratio during the m-th interval (based on Figure A.3 or Figure A.10)

Kwt_m = GHR Correction factor for cooling tower performance of each operation mode for average wet bulb temperature during the m-th interval (based on Figure A.11)

REGHR = Reserve Capacity Guaranteed Heat Rate (Btu/kWh) as shown in Table A.9

REO_n = Reserve Energy Output (kWh) in the n-th period during n-th period in MMBtu

The Fuel Charge will be calculated and payable on an annual basis. When the sum of the monthly Fuel Charges calculated in accordance with Equation [4.2] above results in a positive number for a Contract Year, such amount will be deducted from the amount otherwise payable by GPA in the first invoice that is due for payment in the next Contract Year

Equation 4.3: Natural Gas Fuel Charge

$FC_n = PCFR_n \times FP_n$

Where:

$PCFR_n = TFC_n - GPAF_n$

Where:

$GPAF_n$ (in MMBtu) = $\sum_{m=1}^{M}$ [$GHR_m \times GHRCF_n \times E_m \times (Kdt_m \times Krh_m \times Kpf_m \times KC/HRatio_m \times Kwt_m)$] x [MMBtu / 10^6Btu];

FC_n	=	Fuel Charge in n-th billing period
n	=	Monthly billing period
$GPAF_n$	=	GPA Fuel consumption in n-th billing period by Combined Cycle Units
$PCFR_n$	=	Project Company Fuel Responsibility in n-th billing period
TFC_n	=	Total Fuel consumed at the Facility in n-th billing period expressed in MMBtu
FP_n	=	Fuel Price in n-th billing period (US$/MMBtu)
m	=	Dispatch metering interval (30 minutes)
M	=	Total number of intervals (m) during a billing period (n), which will vary from month to month depending on the actual dispatch that period.
GHRm	=	Guaranteed Heat Rate (Btu/kWh) for the Facility of each operation mode when operating on Natural Gas, corrected for actual load conditions existing during interval (m) that are due to GPA's Dispatch Instructions as shown in Table A.6 and Table A.8. For load conditions that are less than per GPA's Dispatch Instructions due to inability of Facility to meet GPA load requirements up to Dependable Capacity after the Facility has exceeded its Allowable Total Outages Energy for the applicable Contract Year pursuant to ECA Article 4.5, GHR_m shall be the Guaranteed Heat Rate for the load per the Dispatch Instructions.
$GHRCF_n$	=	Guaranteed Heat Rate Correction Factor during n-th billing period as set out in Clause 3 of Schedule 11 to compensate additional heat rate degradation for prolonged ULSD operation of the Facility in the event that the switch to Natural Gas takes place at a date later than the date following the Day of the third anniversary from the Day upon which the Facility is commissioned.
E_m	=	Net Energy Output during the m-th interval (kWh)
Kdt_m	=	GHR Correction factor of each operation mode for average ambient dry bulb temperature during the m-th interval (based on Figure A.4 or Figure A.12)
Krh_m	=	GHR Correction factor of each operation mode for average relative humidity during the m-th interval (based on Figure A.13**)**
Kpf_m	=	GHR Correction factor of each operation mode for average power factor during the m-th interval (based on Figure A.5 or Figure A.14)
KC/H Ratio $_m$	=	GHR Correction factor of each operation mode for average Natural Gas C/H ratio during the m-th interval (based on Figure A. or Figure A.15)
Kwt_m	=	GHR Correction factor for cooling tower performance of each operation mode for average wet bulb temperature during the m-th interval (based on Figure A.16**)**

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The Fuel Charge will be calculated and payable on an annual basis. When the sum of the monthly Fuel Charges calculated in accordance with Equation [4.3] above results in a positive number for a Contract Year, such amount will be deducted from the amount otherwise payable by GPA in the first invoice that is due for payment in the next Contract Year.

5 Supplemental Charges

Supplemental Charges include any costs due under Article 16 of the ECA.

Appendix A Annual Availability, Tariffs and Guaranteed Heat Rates

A.1 Annual Availability of the Facility (Guarantee)

Table A.1: Annual Availability of the Facility (Guarantee) Table -

Agreement Period	Annual Availability (%)	Guaranteed Maximum Forced Outage Hours	Guaranteed Maximum Total Outage Hours (h)
Contract Year 1	96.61	175.2	296.95
Contract Year 2	92.50	175.2	656.95
Contract Year 3	96.61	175.2	296.95
Contract Year 4	97.98	175.2	176.95
Contract Year 5	91.68	175.2	728.95
Contract Year 6	97.98	175.2	176.95
Contract Year 7	97.16	175.2	248.95
Contract Year 8	97.98	175.2	176.95
Contract Year 9	93.05	175.2	608.95
Contract Year 10	97.16	175.2	248.95
Contract Year 11	97.98	175.2	176.95
Contract Year 12	91.68	175.2	728.95
Contract Year 13	97.98	175.2	176.95
Contract Year 14	97.16	175.2	248.95
Contract Year 15	93.05	175.2	608.95
Contract Year 16	97.98	175.2	176.95
Contract Year 17	97.16	175.2	248.95
Contract Year 18	97.98	175.2	176.95
Contract Year 19	91.68	175.2	728.95
Contract Year 20	97.98	175.2	176.95
Contract Year 21	97.16	175.2	248.95
Contract Year 22	93.05	175.2	608.95
Contract Year 23	97.98	175.2	176.95
Contract Year 24	97.16	175.2	248.95
Contract Year 25	97.98	175.2	176.95
Average	96.11	175.2	341.11

A.2 Capacity Charge

A.2.1 Fixed Capacity Charge

Table A.2: Fixed Capacity Charge

Agreement Period	Fixed Capacity Charge (USD/kW/month)
Contract Year 1	16.7550
Contract Year 2	16.7550
Contract Year 3	16.7550
Contract Year 4	16.7550
Contract Year 5	16.7550
Contract Year 6	16.7550
Contract Year 7	16.7550
Contract Year 8	16.7550
Contract Year 9	17.1659
Contract Year 10	18.8825
Contract Year 11	20.7707
Contract Year 12	22.8478
Contract Year 13	25.1325
Contract Year 14	25.1325
Contract Year 15	25.1325
Contract Year 16	25.1325
Contract Year 17	25.1325
Contract Year 18	25.1325
Contract Year 19	25.1325
Contract Year 20	25.1325
Contract Year 21	25.1325
Contract Year 22	25.1325
Contract Year 23	25.1325
Contract Year 24	25.1325
Contract Year 25	25.1325

A.2.2 Fixed Operation and Maintenance Charge

Table A.3: Fixed Operation and Maintenance Charge

Agreement Period	FOMC on ULSD (USD/kW/Month)	FOMC on Natural Gas (USD/kW/Month)
Commercial Operation Date through end of the Term	11.5246	7.5735

A.3 Energy Charge

A.3.1 Variable Operation and Maintenance Charge

Table A.4: Variable Operation and Maintenance Charge

Agreement Period	VOMC on ULSD (USD/kWh)	VOMC on Natural Gas (USD/kWh)
Commercial Operation Date through end of the Term	0.0016	0.0015

A.3.2 Fuel Charge for Simple Cycle Operation Mode

A.3.2.1 Guaranteed Heat Rates for Simple Cycle Operation on USLD

Table A.5: Guaranteed Heat Rate for Simple Cycle Operation on ULSD at Site Reference Conditions

Percent of Dependable Capacity	Guaranteed Heat Rate (HHV) (Btu/kWh)
100%	9,836
95%	9,928
90%	10,063
85%	10,246
80%	10,452
75%	10,718
70%	11,011
65%	9,947
60%	10,112
55%	10,405
50%	10,762
45%	11,230
40%	11,768
35%	13,052
30%	10,668
25%	11,348
20%	12,406
15%	14,389
10%	18,009

A.3.2.2 Guaranteed Heat Rates for Simple Cycle Operation on Natural Gas

Table A.6: Guaranteed Heat Rate for Simple Cycle Operation on Natural Gas at Site Reference Conditions

Percent of Dependable Capacity[1]	Guaranteed Heat Rate (HHV) (Btu/kWh)[2]
100%	10,651
95%	10,747
90%	10,903
85%	11,104
80%	11,338
75%	11,619
70%	11,919
65%	10,797
60%	11,008
55%	11,302
50%	11,701
45%	12,203
40%	12,775
35%	13,620
30%	11,276
25%	11,993
20%	13,073
15%	15,175
10%	19,090
Minimum Load	19,090 [at 10% of Dependable Capacity]

[1] Dependable Capacity must be within plus/minus 10% of the preferred capacity of 180 MW.

[2] Use linear interpolation when the load values fall between the stated percentages.

A.3.3 Fuel Charge for Combined Cycle Operation Mode

A.3.3.1 Guaranteed Heat Rates for Combined Cycle Operation on USLD

Table A.7: Guaranteed Heat Rate for Combined Cycle Operation on ULSD at Site Reference Conditions

Percent of Dependable Capacity	Guaranteed Heat Rate (HHV) (Btu/kWh)
100%	6,648
95%	6,657
90%	6,684
85%	6,750
80%	6,790
75%	6,877
70%	6,985
65%	6,694
60%	6,727
55%	6,811
50%	6,949
45%	7,149
40%	7,449
35%	8,041
30%	7,434
25%	7,754
20%	8,313
15%	9,367
10%	11,352
Minimum Load	11,352

* Use Linear Interpolation when the load values fall between the stated percentages

A.3.3.2 Guaranteed Heat Rates for Combined Cycle Operation on Natural Gas

Table A.8: Guaranteed Heat Rate for Combined Cycle Operation on Natural Gas at Site Reference Conditions

Percent of Dependable Capacity	Guaranteed Heat Rate (HHV) (Btu/kWh)
100%	6,771
95%	6,810
90%	6,840
85%	6,902
80%	6,962
75%	7,058
70%	6,776
65%	6,836
60%	6,881
55%	6,988
50%	7,137
45%	7,348
40%	7,644
35%	8,240
30%	7,600
25%	7,945
20%	8,529
15%	9,593
10%	11,647
Minimum Load	11,647

* Use Linear Interpolation when the load values fall between the stated percentages

A.3.4 Fuel Charge for Reserve Capacity

Table A.9: Guaranteed Heat Rate for Reserve Capacity

Agreement Period	Guaranteed Heat Rate, (HHV) (Btu/kWh)
Commercial Operation Date through end of the Term	10,556

A.3.5 Heat Rate Correction for Simple Cycle Operation Mode

[All the correction curves below might be modified before ECA sign based on detail design from OEM]

A.3.5.1 Correction Curve for Simple Cycle (SC) Operation on USLD

Figure A.1: ULSD SC Kdt Correction Factor

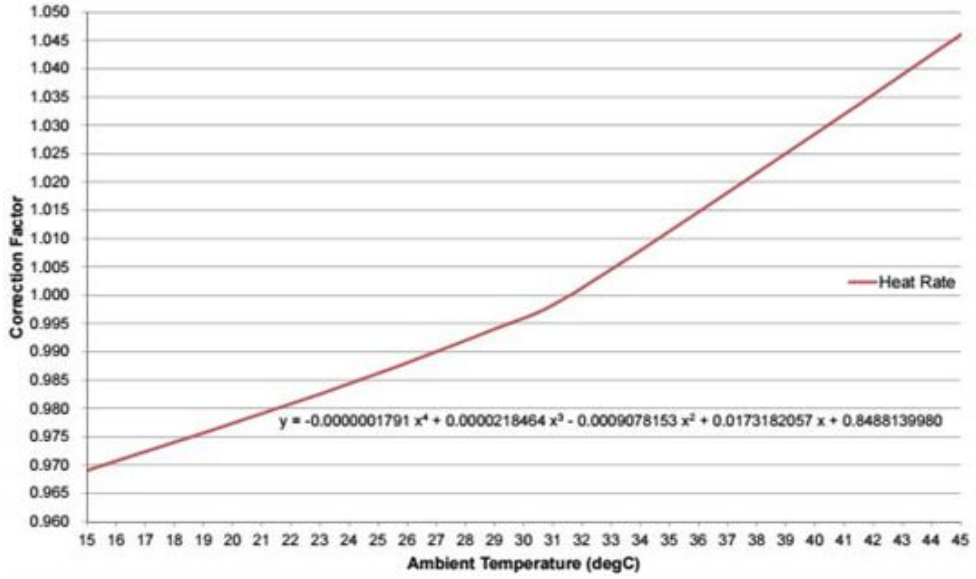


Figure A.2: ULSD SC Kpf Correction Factor

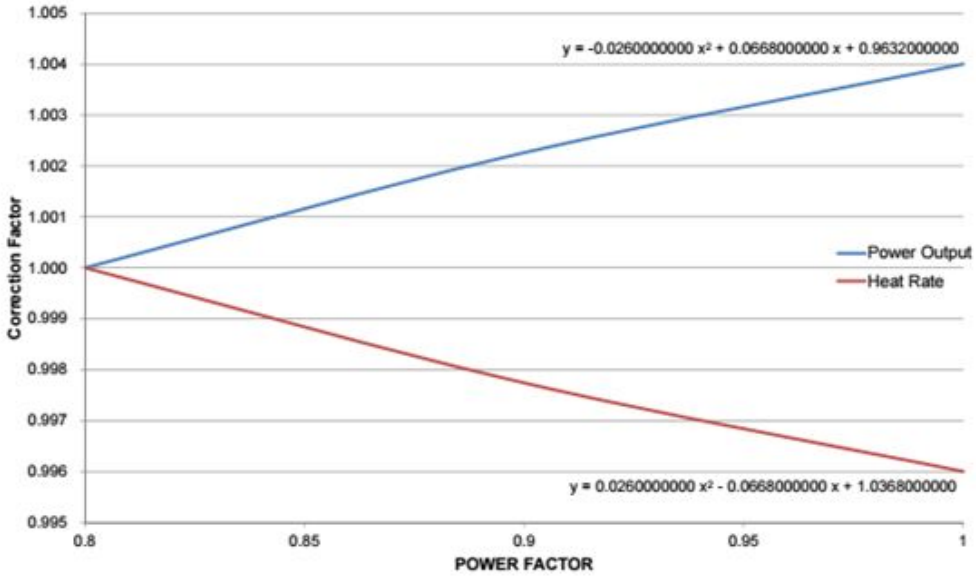
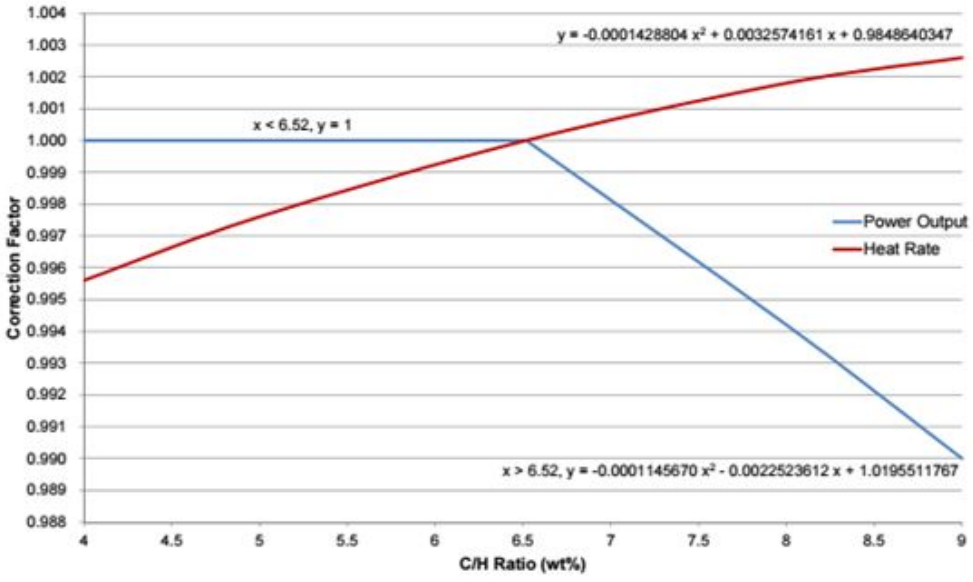


Figure A.3: ULSD SC $K_{C/H\ Ratio}$ Correction Factor.[3]



[3] Power output correction curve is for the Dependable Capacity Test purposes only and is not used for Schedule 4 calculations.

A.3.5.2 Correction Curve for Simple Cycle (SC) Operation on Natural Gas

Figure A.4: Natural Gas SC Kdt Correction Factor

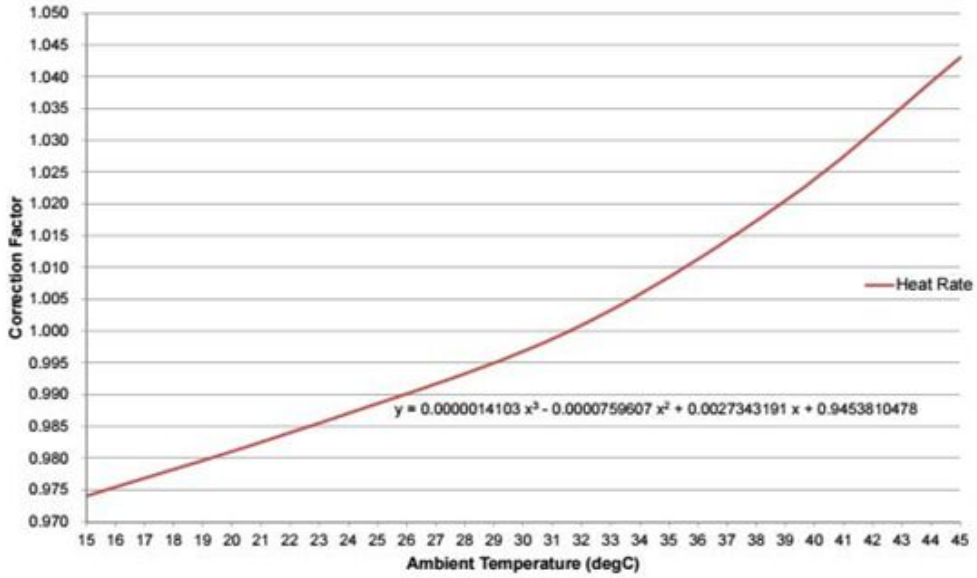


Figure A.5: Natural Gas SC Kpf Correction Factor[4]

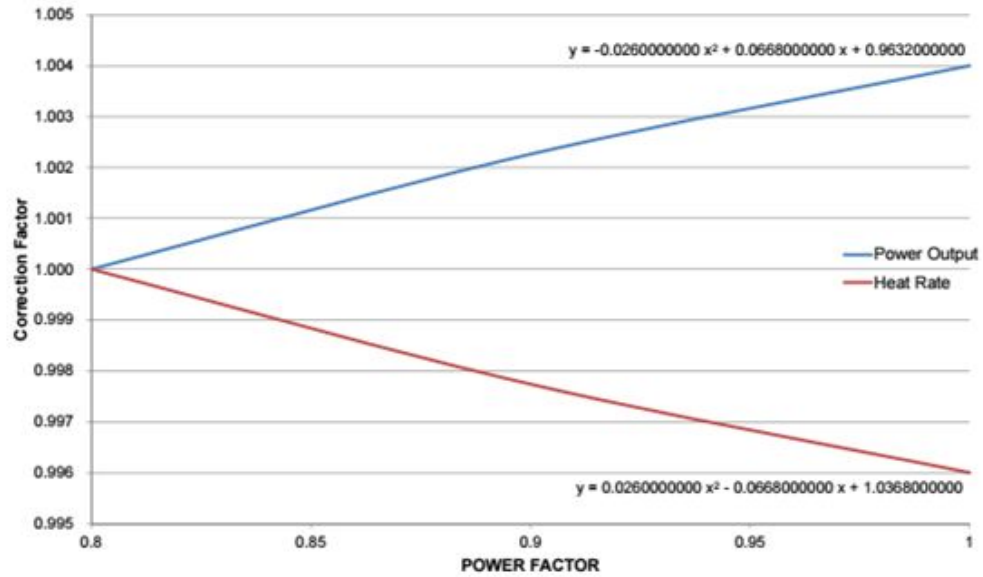
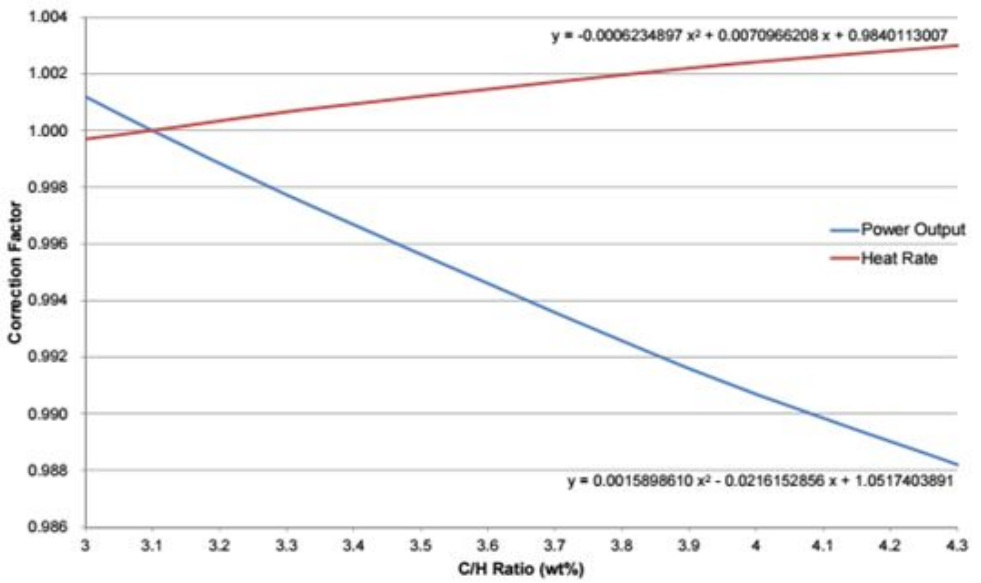


Figure A.6: Natural Gas SC $K_{C/H\ Ratio}$ Correction Factor[5]



[4] Power output correction curve is for the Dependable Capacity Test purposes only and is not used for Schedule 4 calculations

[5] Power output correction curve is for the Dependable Capacity Test purposes only and is not used for Schedule 4 calculations

A.3.6 Heat Rate Correction for Combined Cycle (CC) Operation Mode

A.3.6.1 Correction Curve for Combined Cycle Operation on USLD

Figure A.7: ULSD CC Kdt Correction Factor

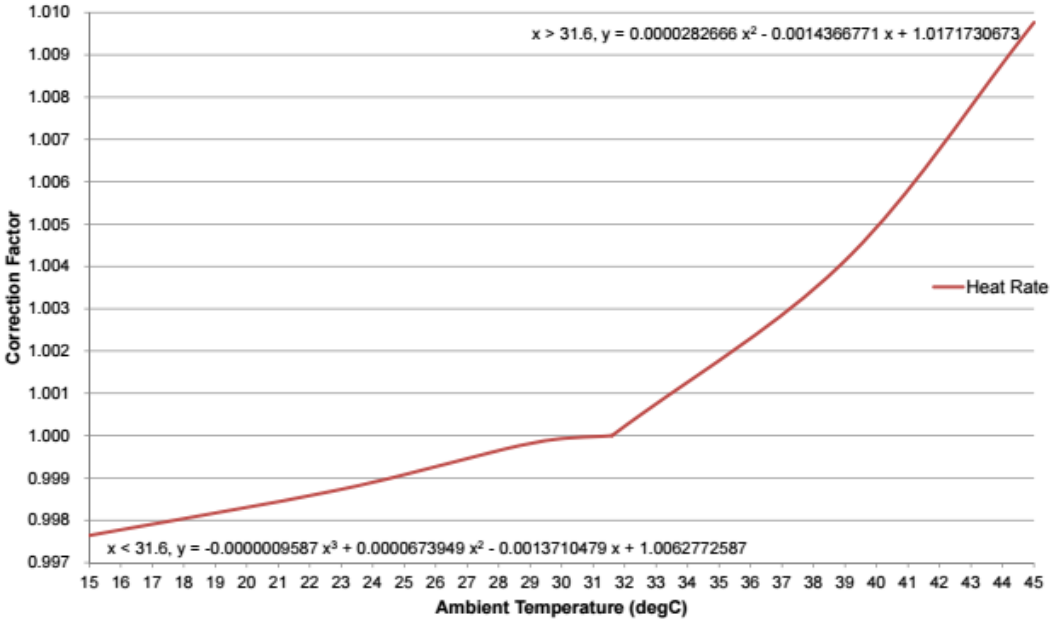


Figure A.8: ULSD CC Krh Correction Factor

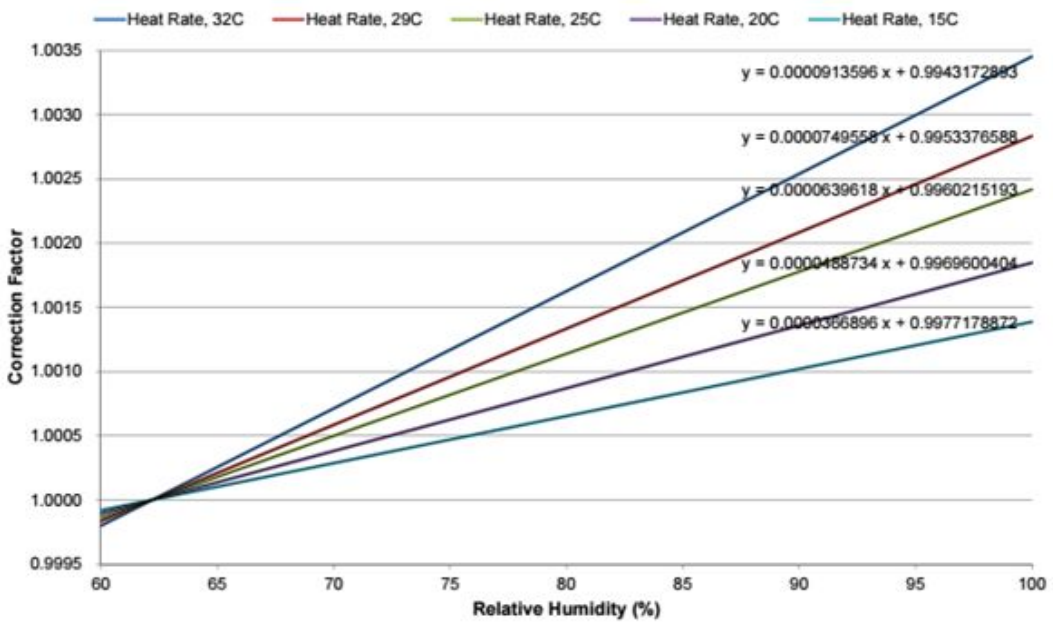


Figure A.9: ULSD CC Kpf Correction Factor[6]

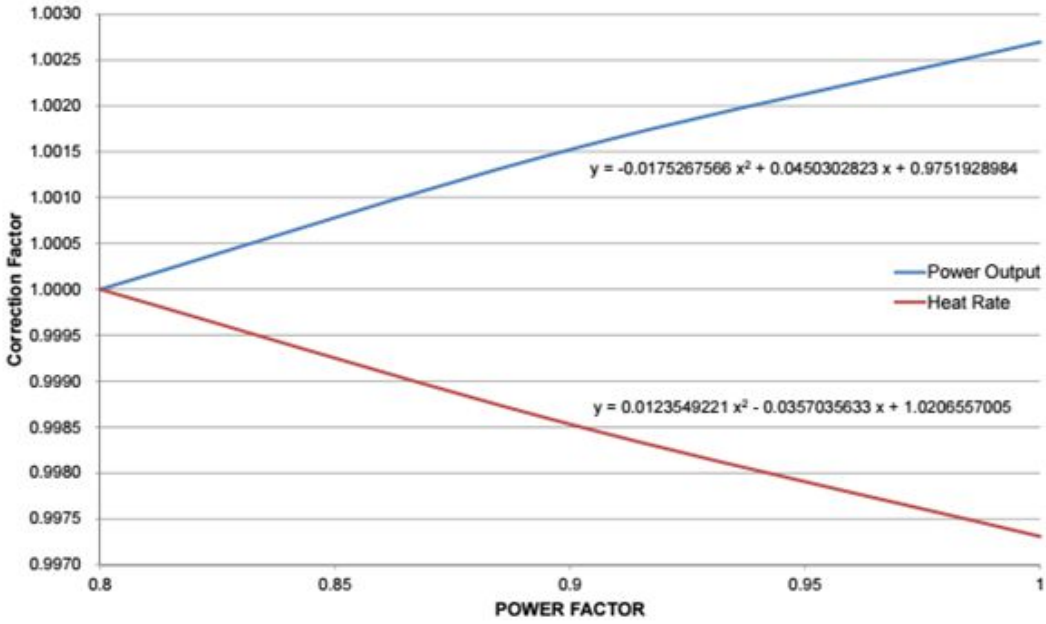


Figure A.10: ULSD CC $K_{C/H\ Ratio}$ Correction Factor

[6] Power output correction curve is for the Dependable Capacity Test purposes only and is not used for Schedule 4 calculations

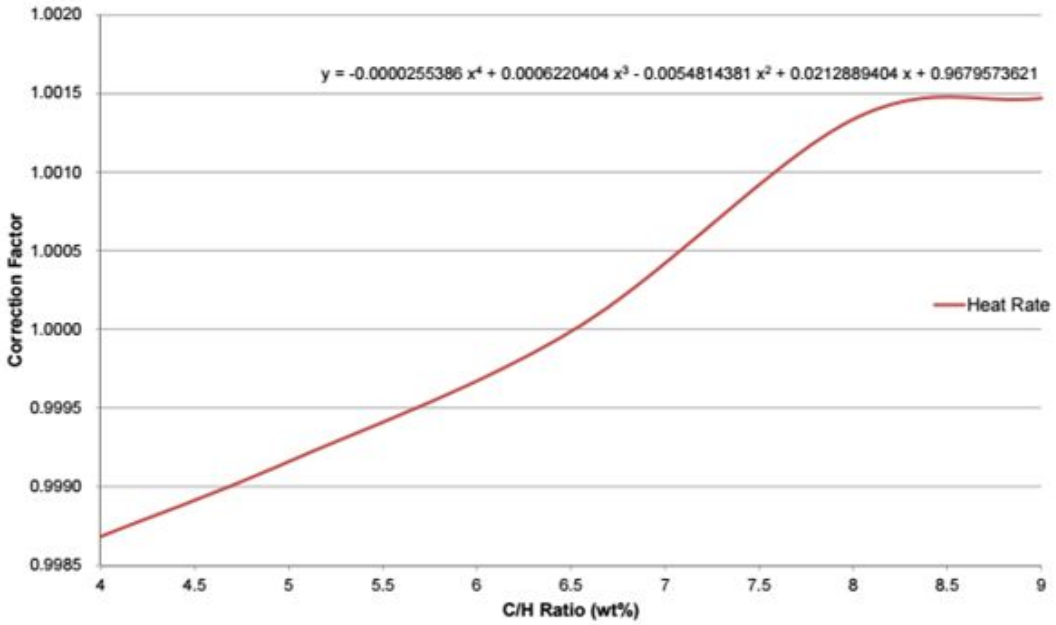
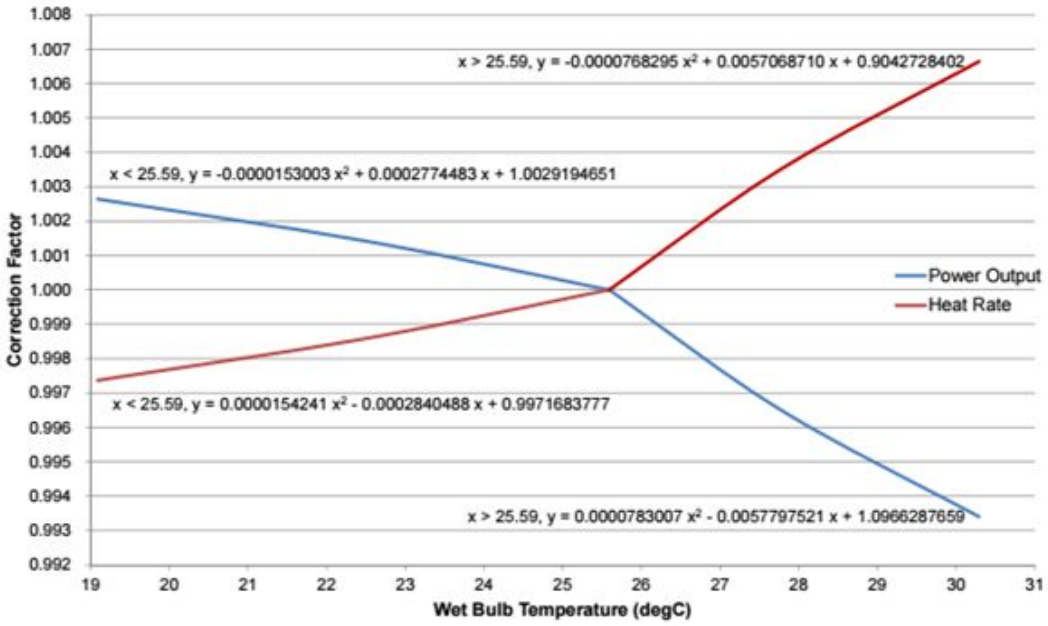


Figure A.11: ULSD CC Kwt Ratio Correction Factor[7]



[7] Power output correction curve is for the Dependable Capacity Test purposes only and is not used for Schedule 4 calculations

A.3.6.2 Correction Curve for Combined Cycle Operation on Natural Gas

Figure A.12: Natural Gas CC Kdt Correction Factor

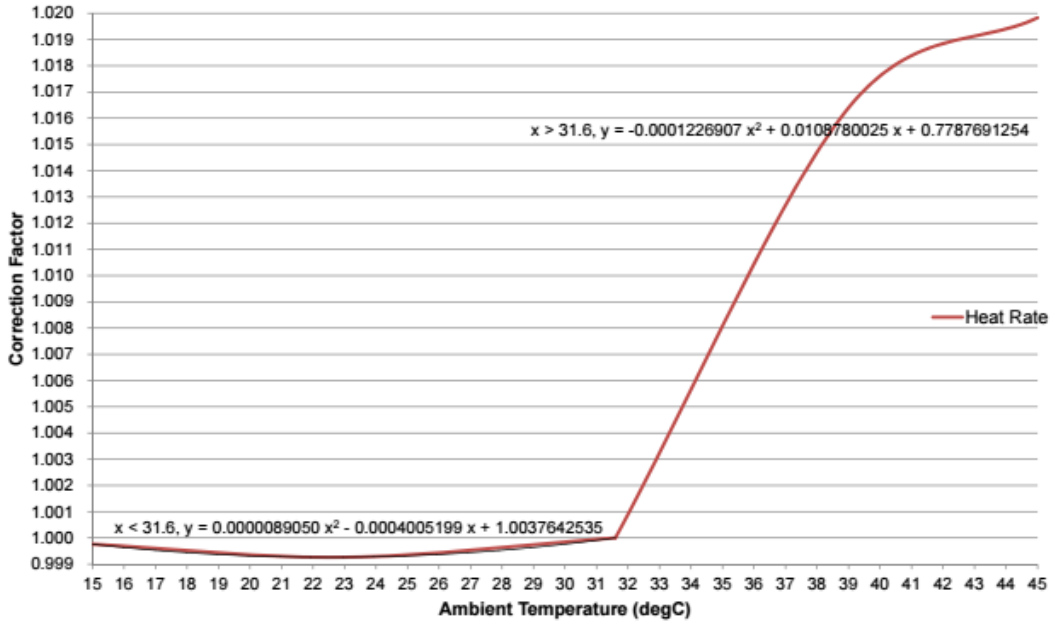


Figure A.13: Natural Gas CC Krh Correction Factor[8]

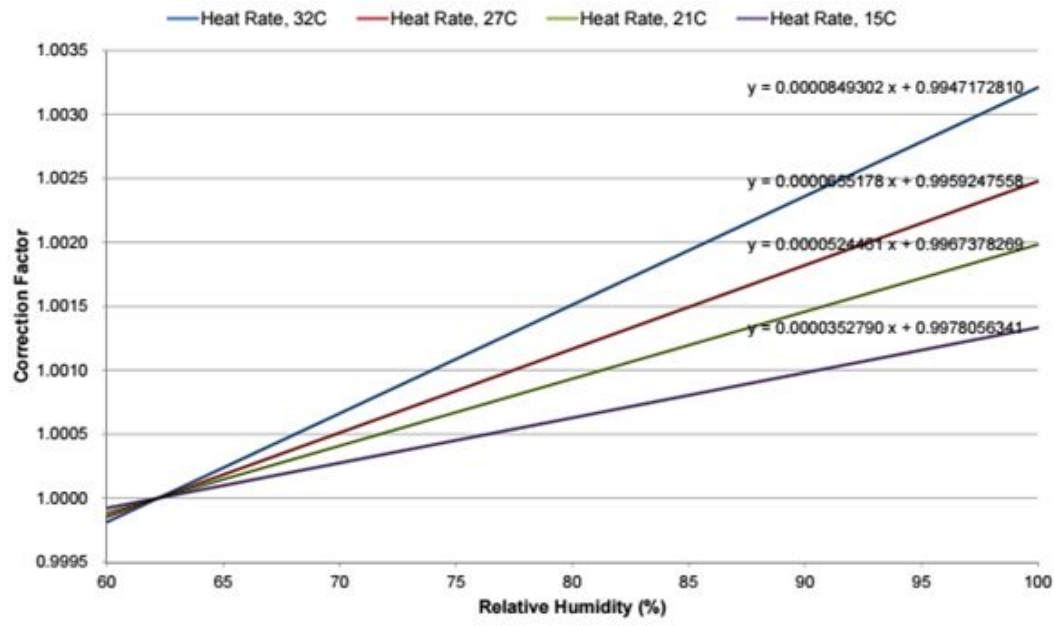


Figure A.14: Natural Gas CC Kpf Correction Factor[9]

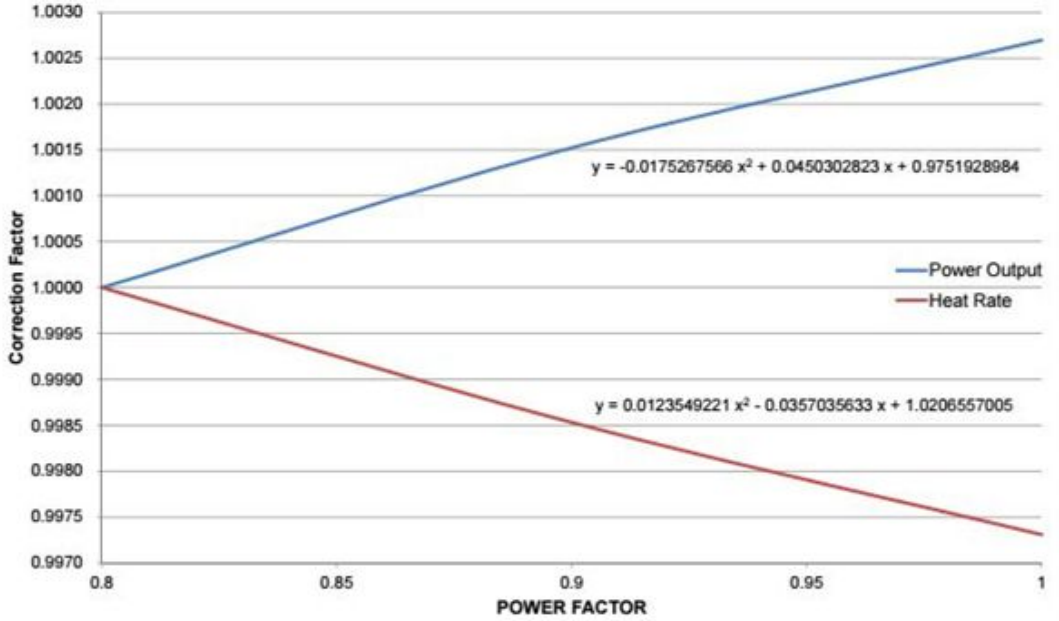
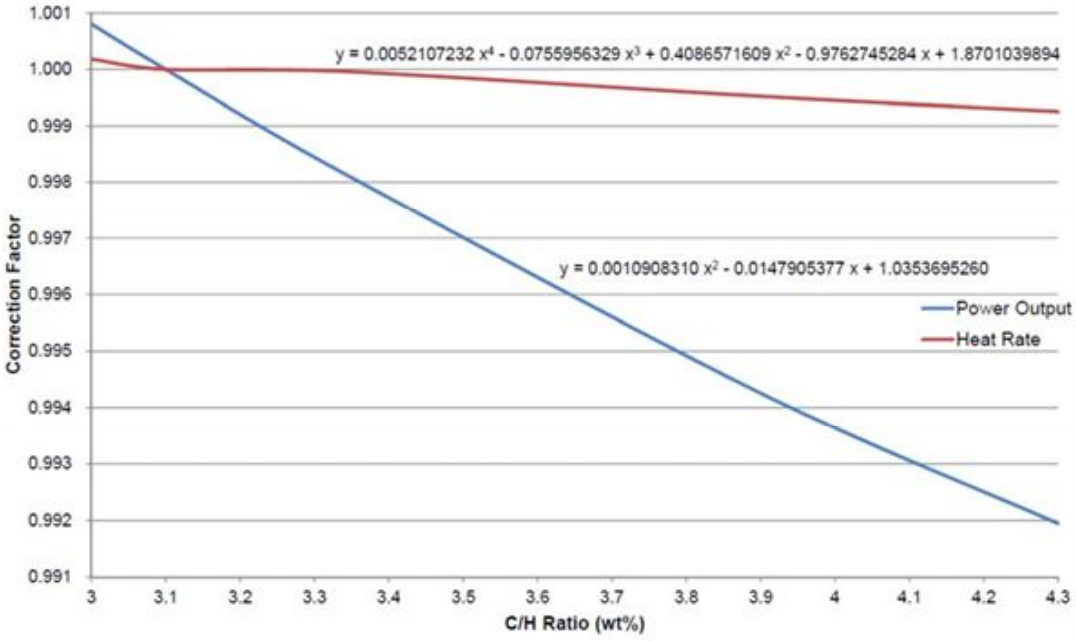


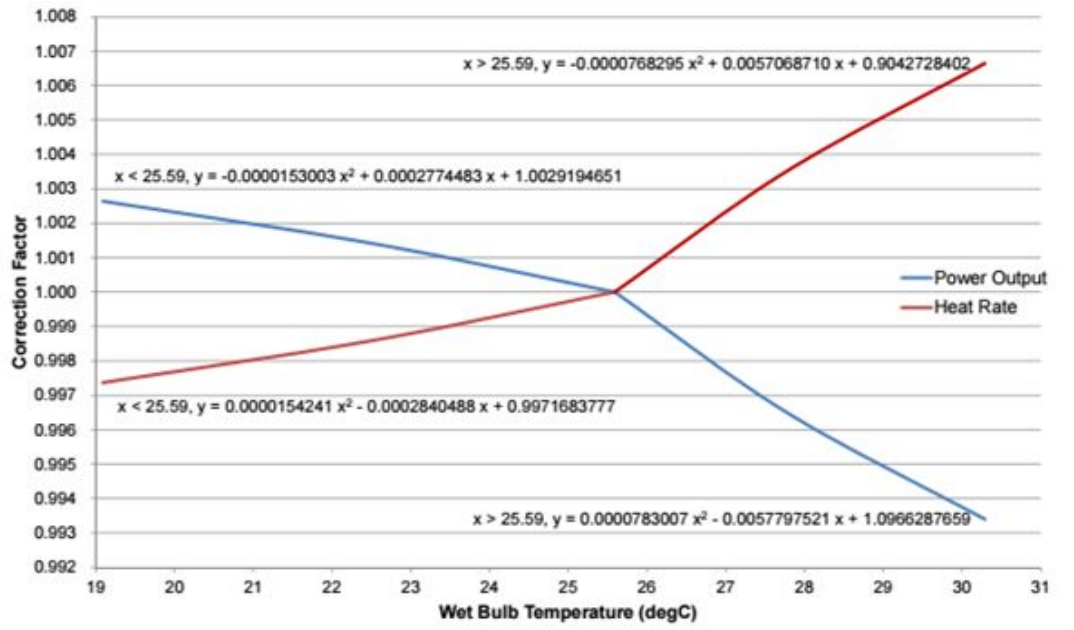
Figure A.15: Natural Gas CC $K_{C/H\ Ratio}$ Correction Factor



[8] Power output correction curve is for the Dependable Capacity Test purposes only and is not used for Schedule 4 calculations

[9] Power output correction curve is for the Dependable Capacity Test purposes only and is not used for Schedule 4 calculations

Figure A.16: Natural Gas CC Kwt Correction Factor[10]



A.3.7 Power Output Correction for Simple Cycle Operation Mode[11]

A.3.7.1 Correction Curve for Simple Cycle Operation on USLD

Figure A.17: ULSD Kdt Correction Factor

[10] Power output correction curve is for the Dependable Capacity Test purposes only and is not used for Schedule 4 calculations

[11] Power output correction curves are for the Dependable Capacity Test purposes only and are not used for Schedule 4 calculations

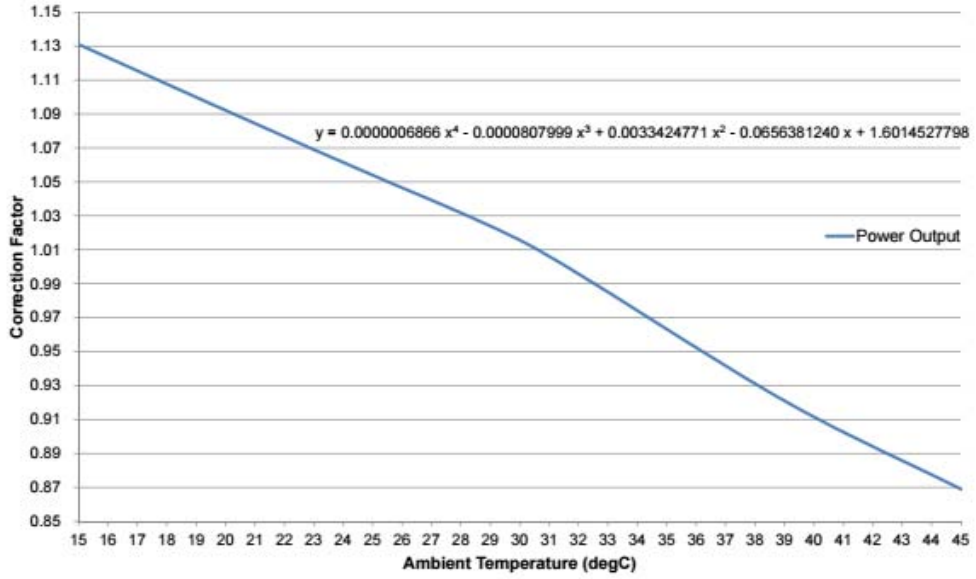


Figure A.18: ULSD Kbp Correction Factor

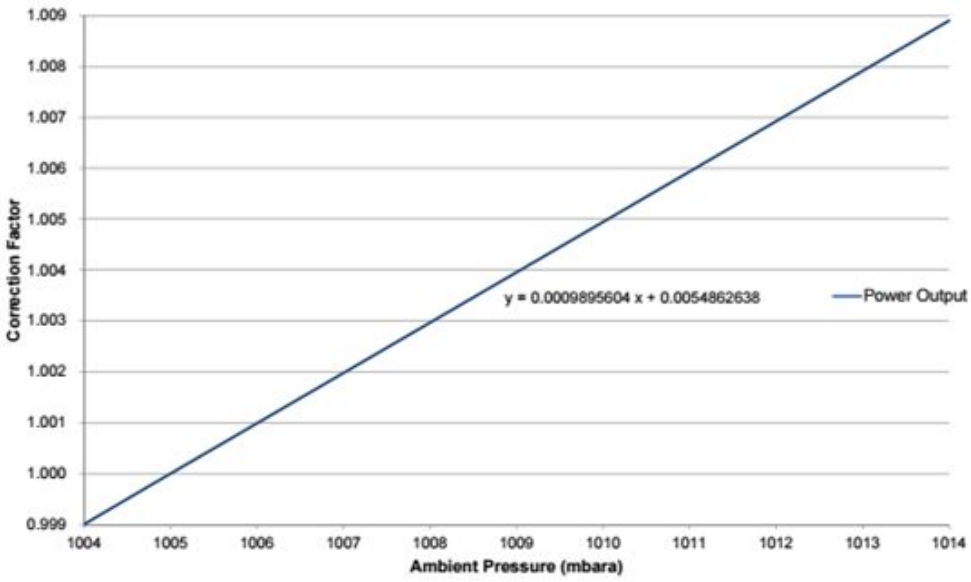


Figure A.19: ULSD Krh Correction Factor

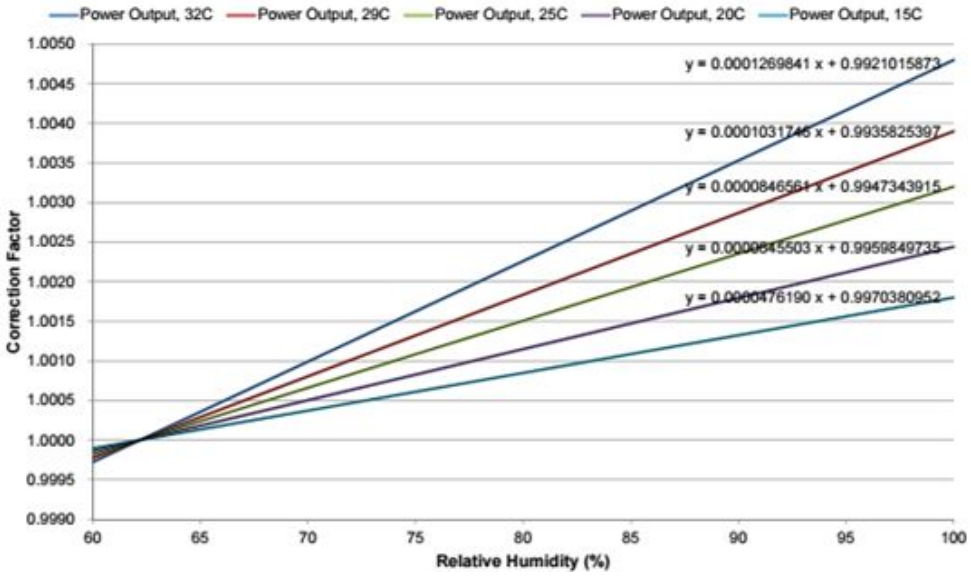


Figure A.20: ULSD Kpf Correction Factor

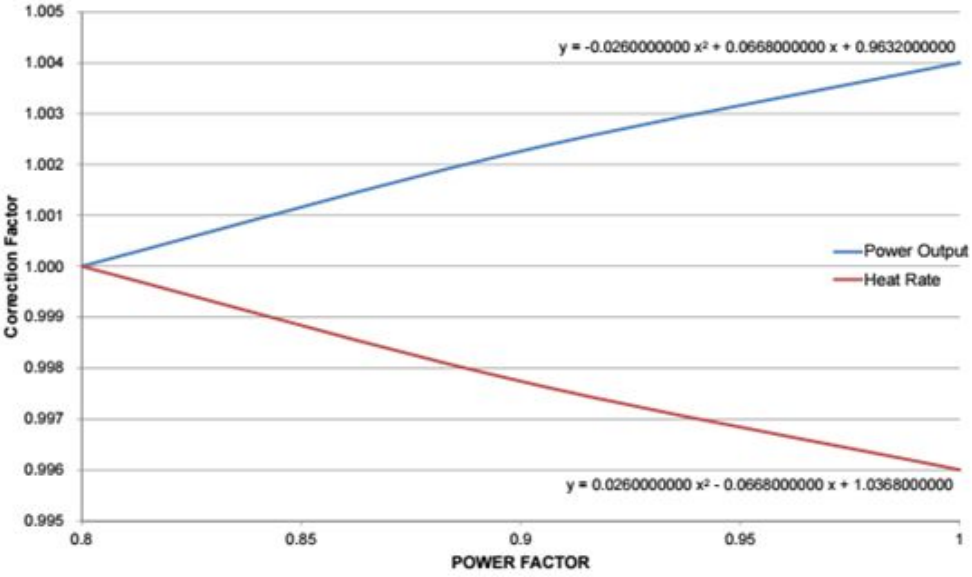
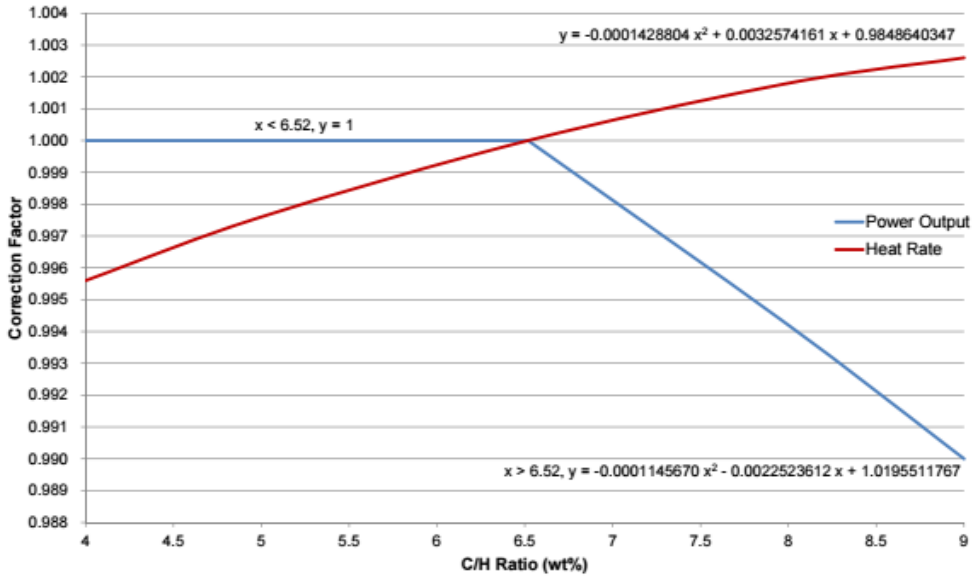


Figure A.21: ULSD $K_{C/H\ Ratio}$ Correction Factor



A.3.7.2 Correction Curve for Simple Cycle Operation on Natural Gas

Figure A.22: Natural Gas Kdt Correction Factor

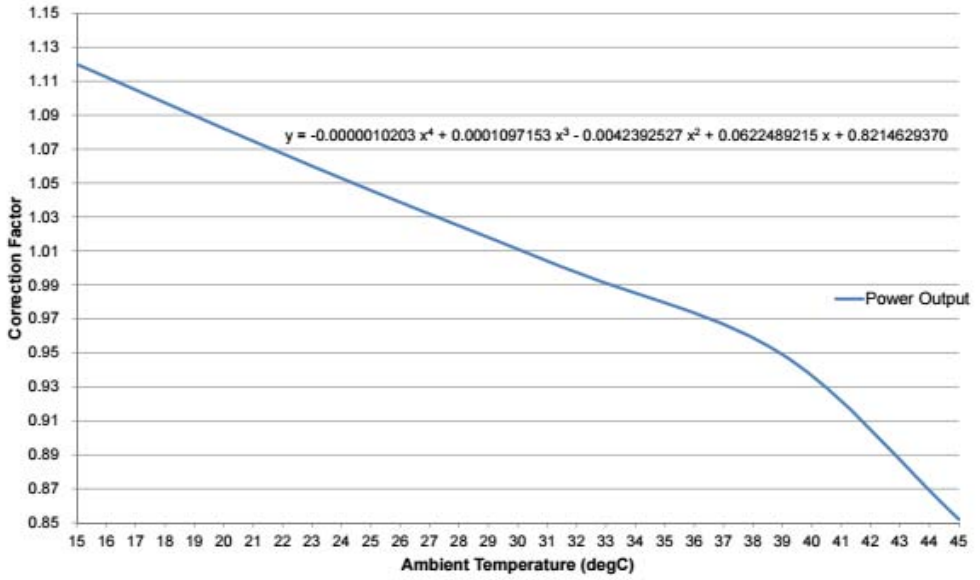


Figure A.23: Natural Gas Kbp Correction Factor

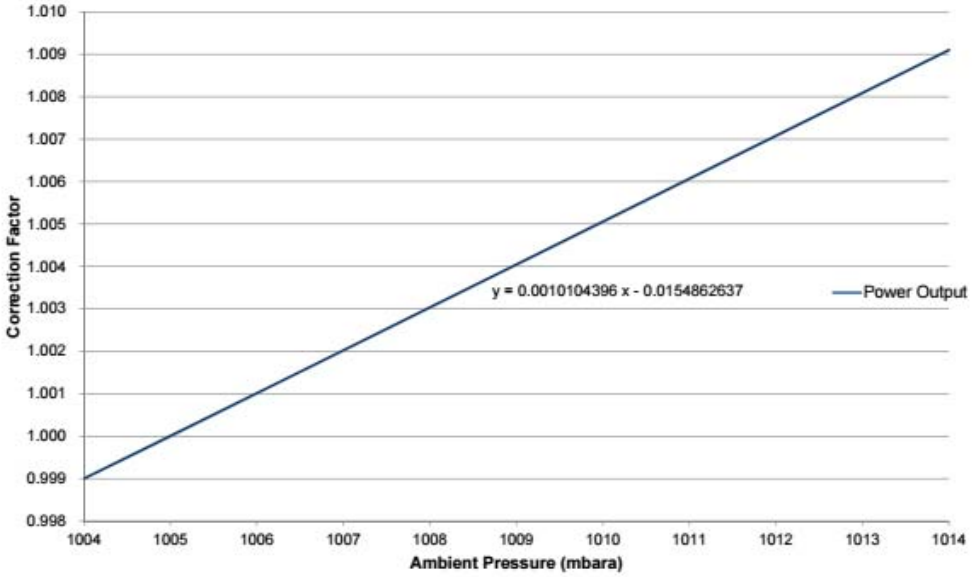


Figure A.24: Natural Gas Krh Correction Factor

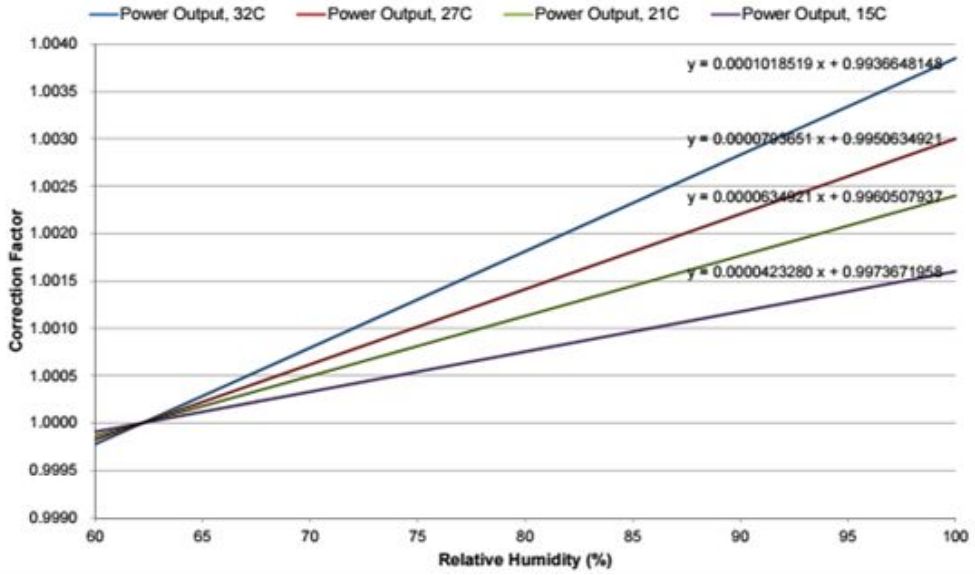


Figure A.25: Natural Gas Kpf Correction Factor

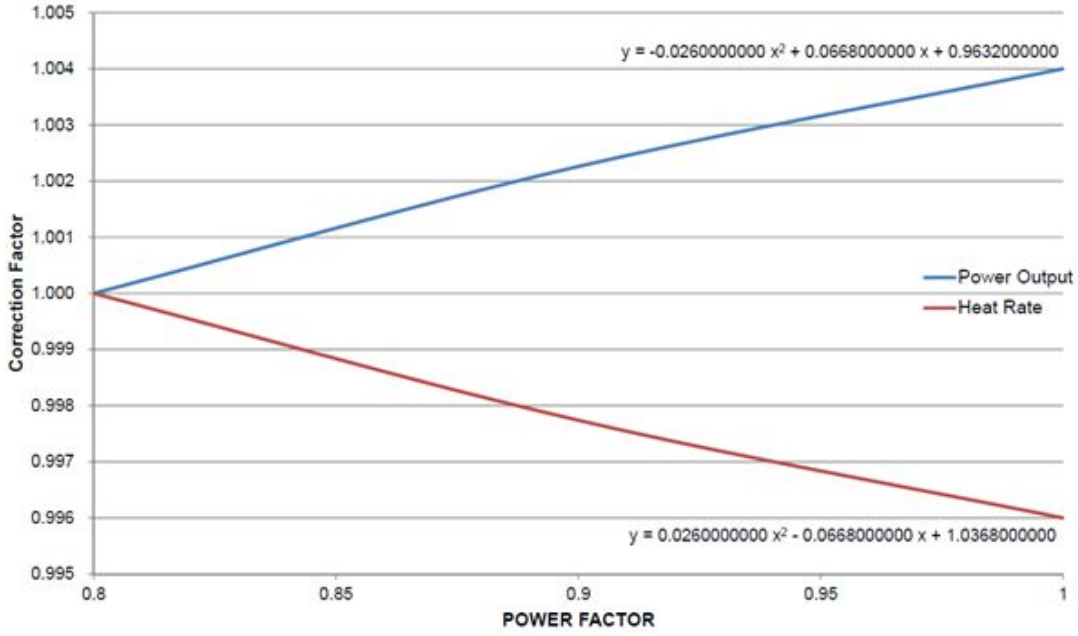
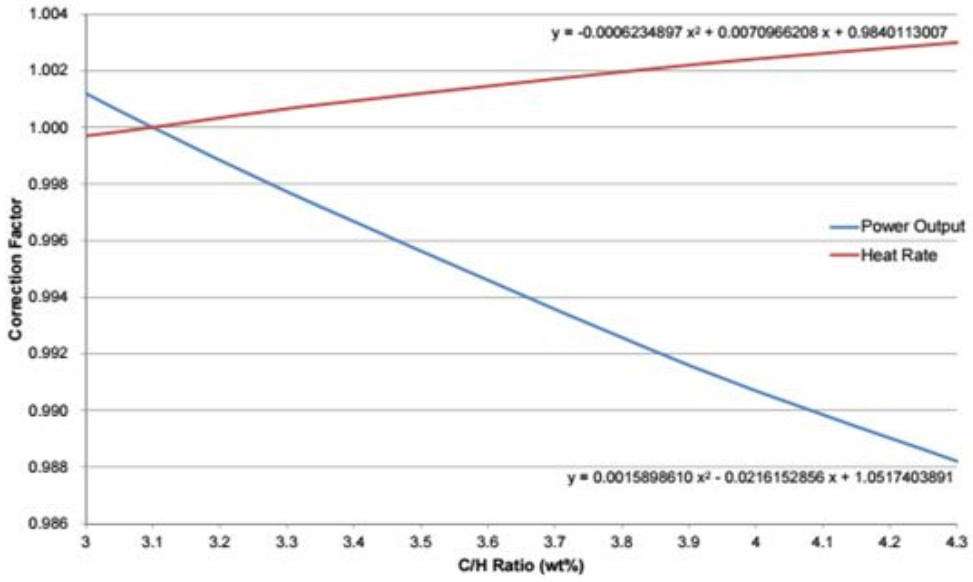


Figure A.26: Natural Gas $K_{C/H\ Ratio}$ Correction Factor



A.3.8 Power Output Correction for Combined Cycle Operation Mode

A.3.8.1 Correction Curve for Combined Cycle Operation on USLD

Figure A.27: ULSD Kdt Correction Factor

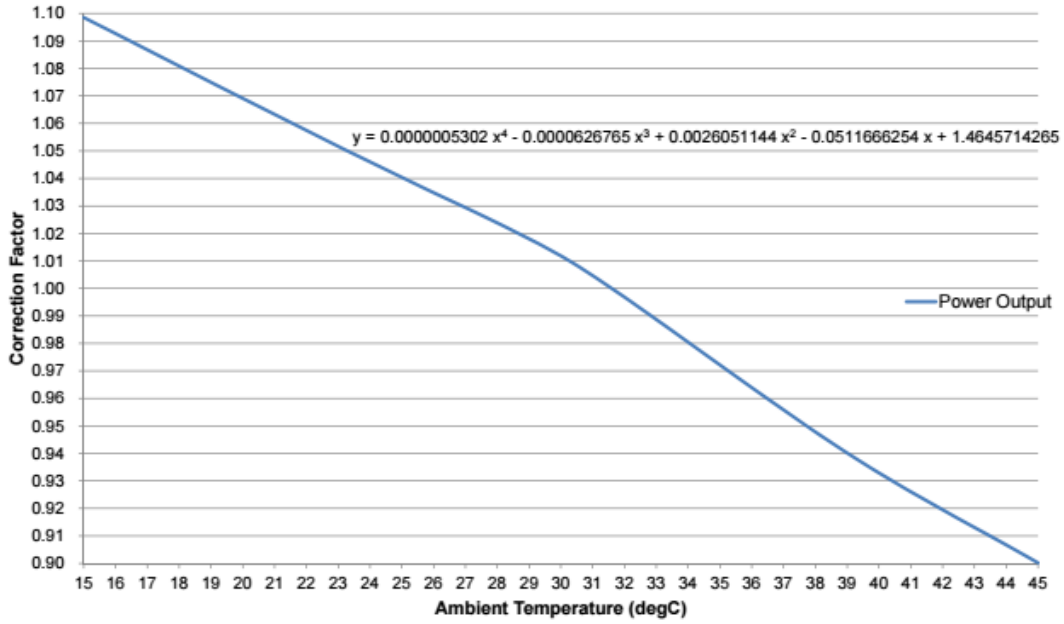


Figure A.28: ULSD Kbp Correction Factor

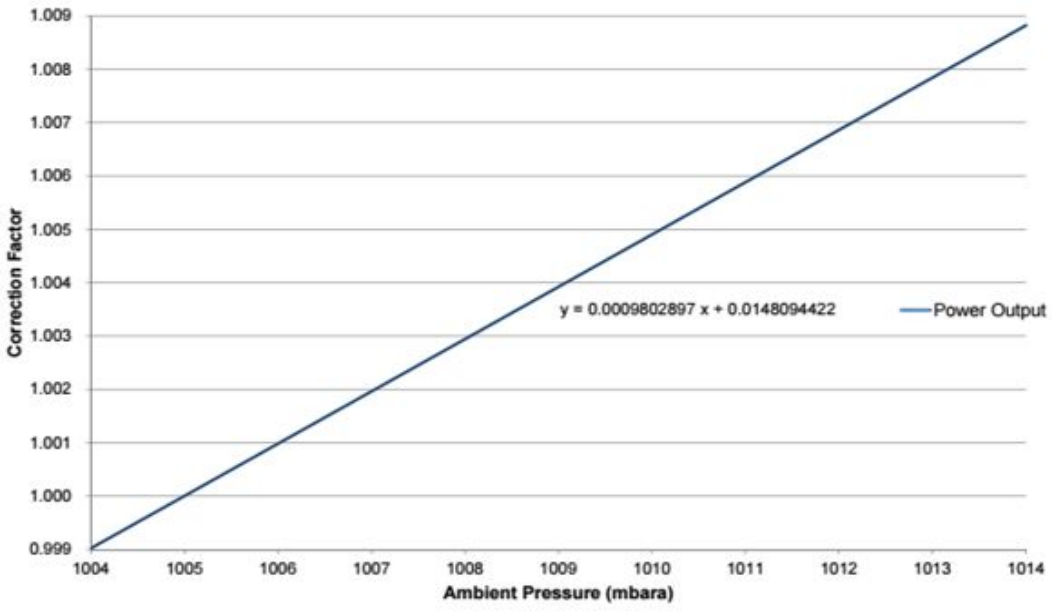


Figure A.29: ULSD Krh Correction Factor

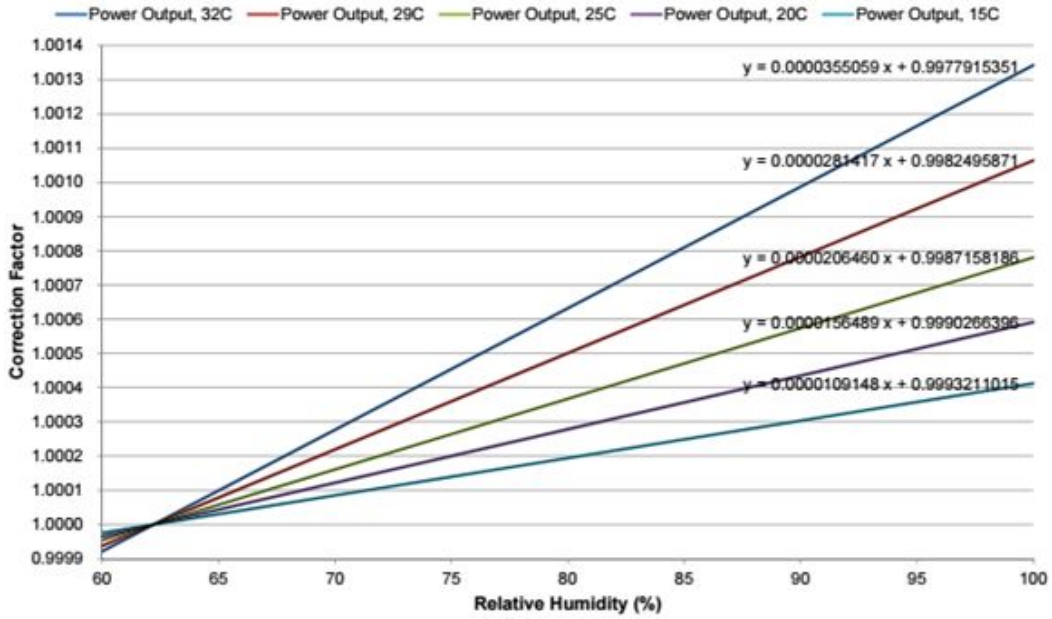


Figure A.30: ULSD Kpf Correction Factor

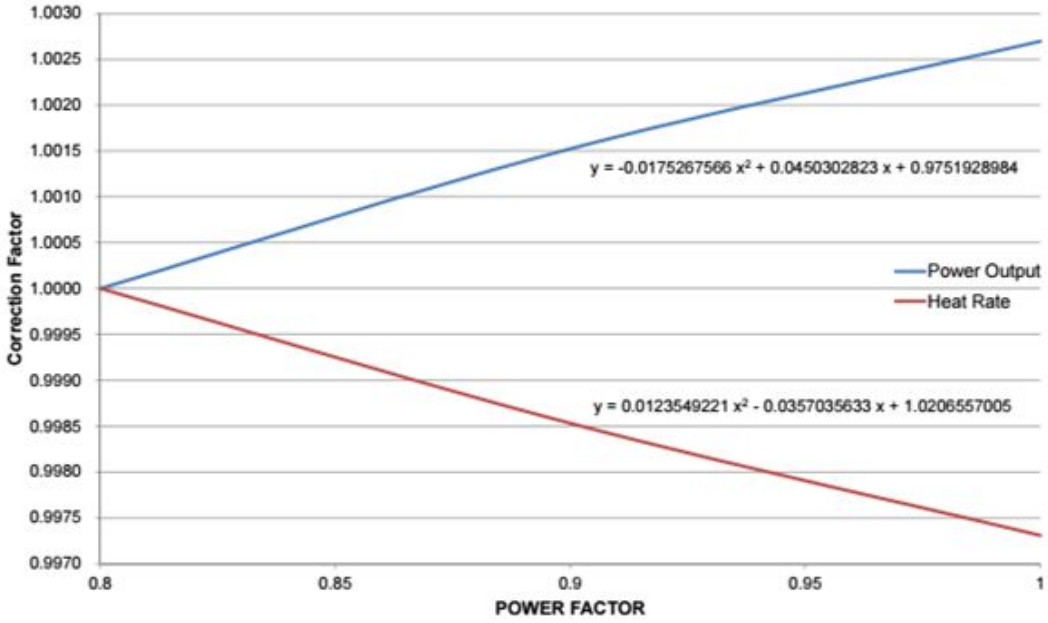


Figure A.31: ULSD $K_{C/H\ Ratio}$ Correction Factor

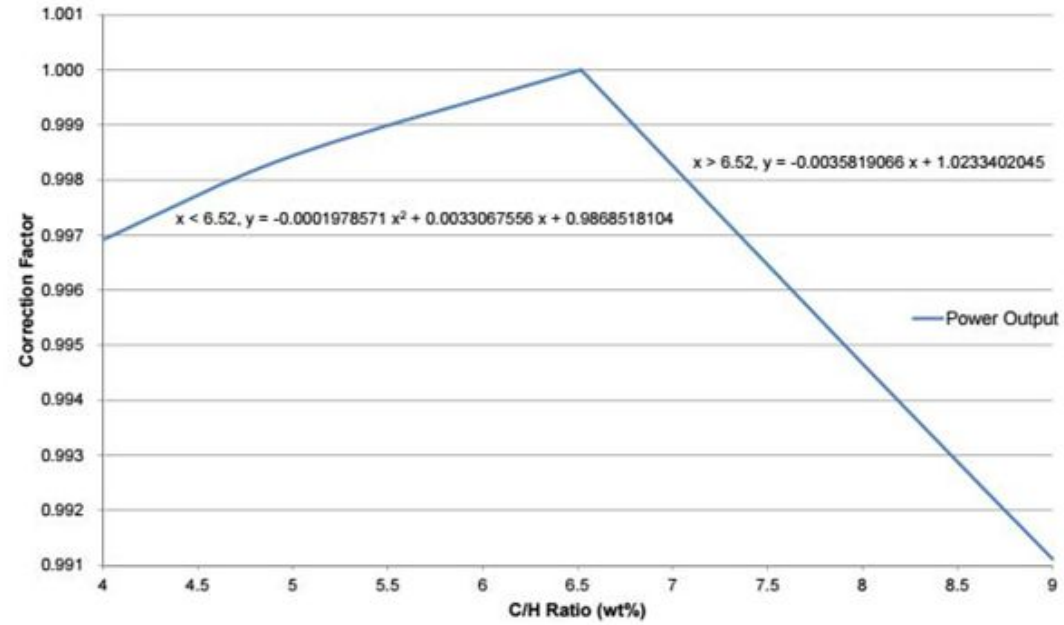
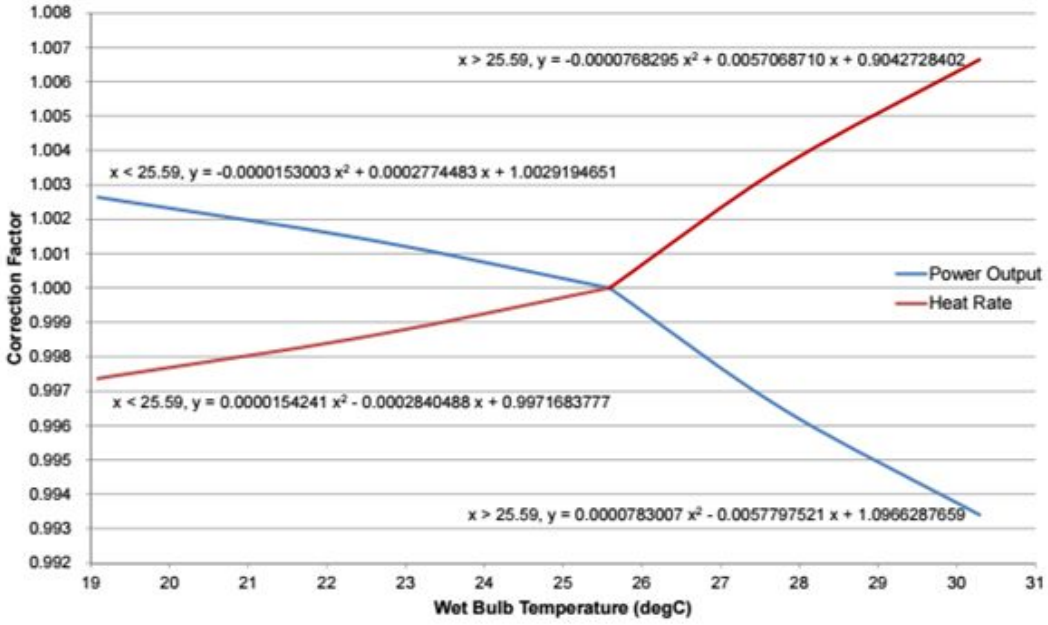


Figure A.32: ULSD Kwt Ratio Correction Factor



A.3.8.1 Correction Curve for Combined Cycle Operation on Natural Gas[12]

Figure A.33: Natural Gas Kdt Correction Factor

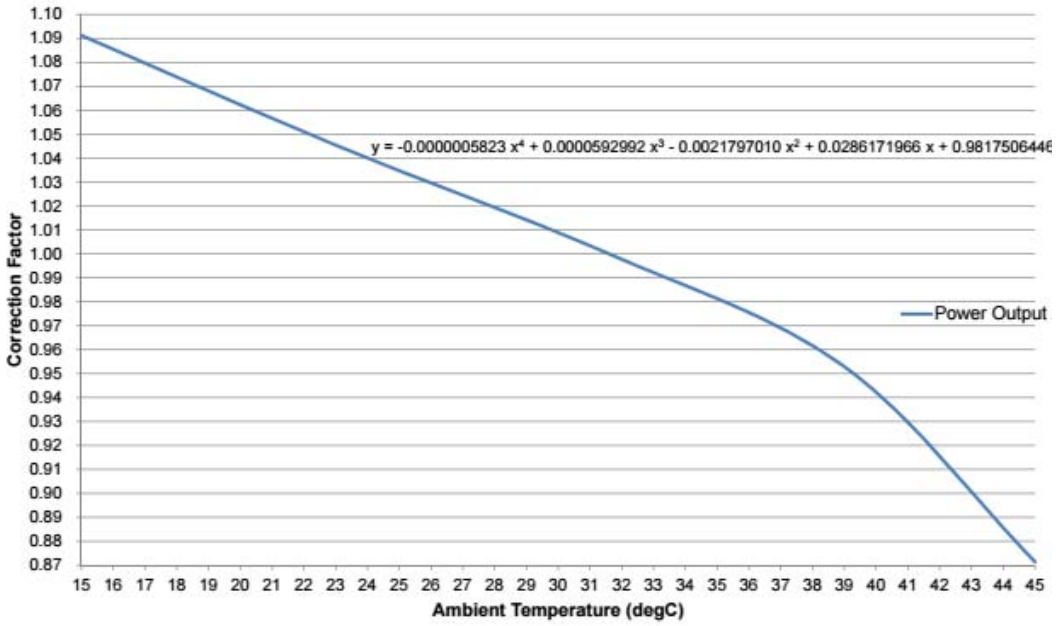


Figure A.34: Natural Gas Kbp Correction Factor

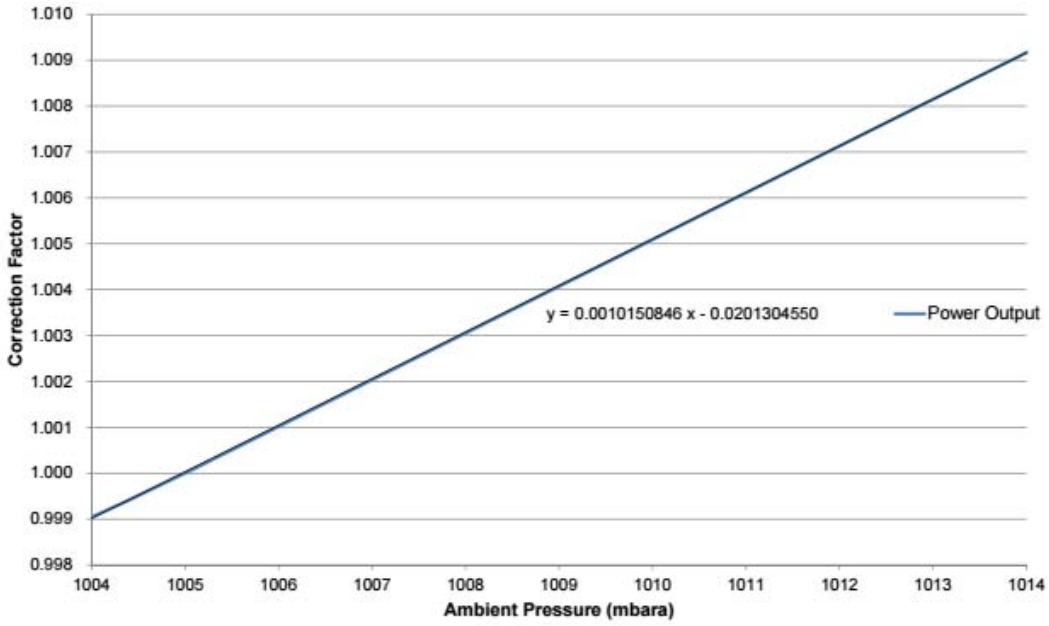


Figure A.35: Natural Gas Krh Correction Factor

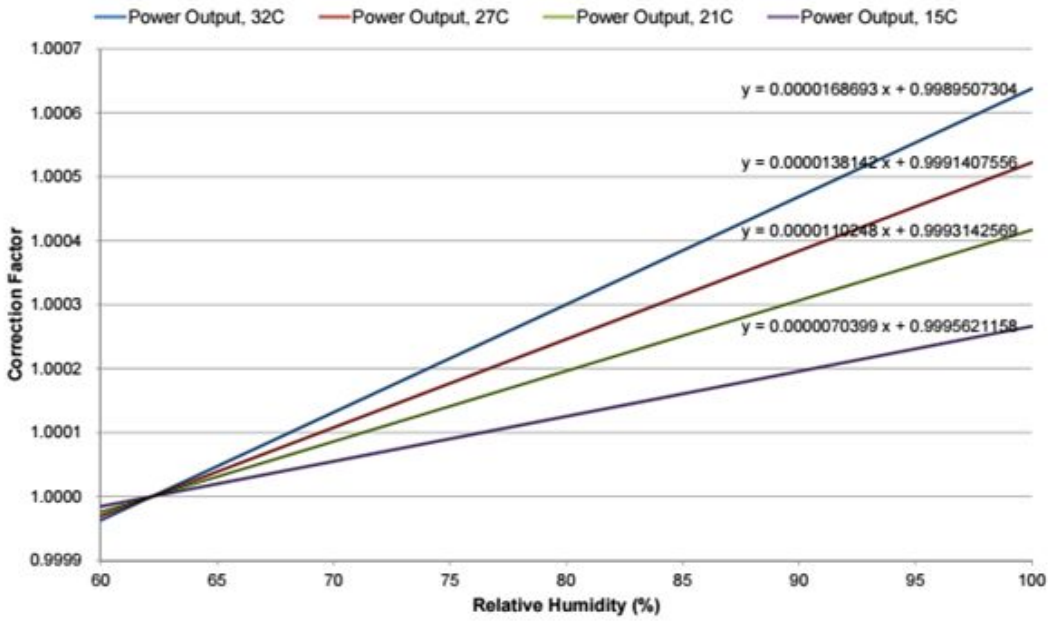
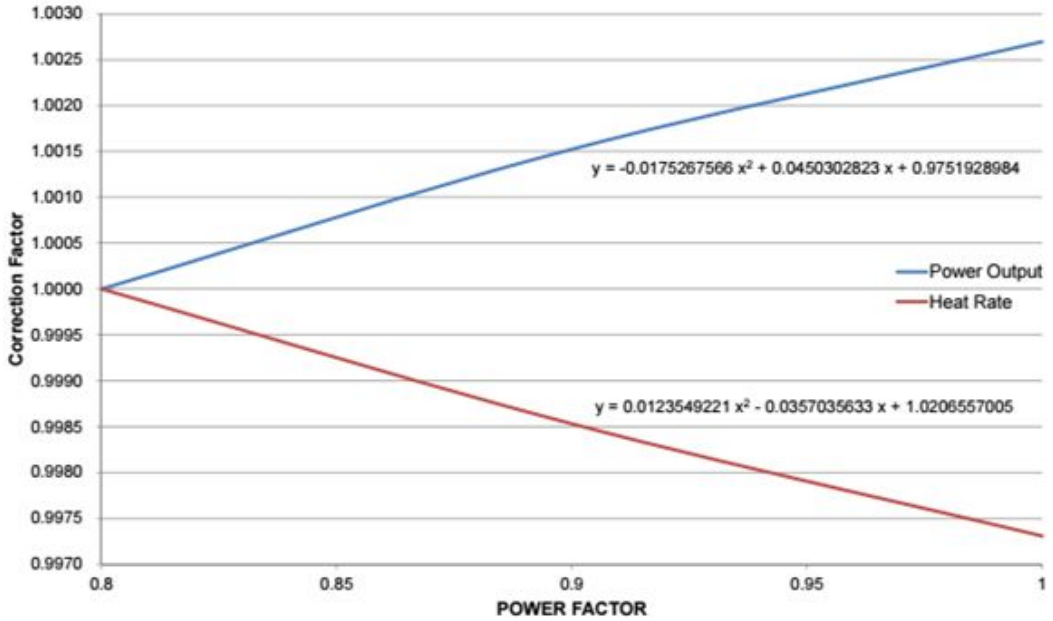


Figure A.36: Natural Gas Kpf Correction Factor



[12] Power output correction curve is for the Dependable Capacity Test purposes only and is not used for Schedule 4 calculations

Figure A.37: Natural Gas $K_{C/H\ Ratio}$ Correction Factor

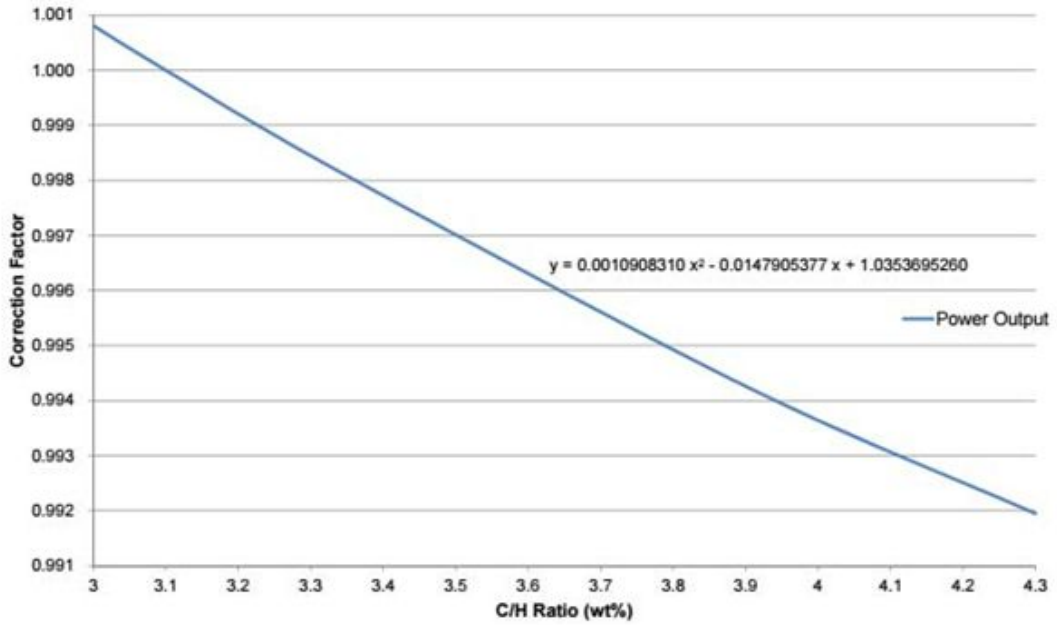
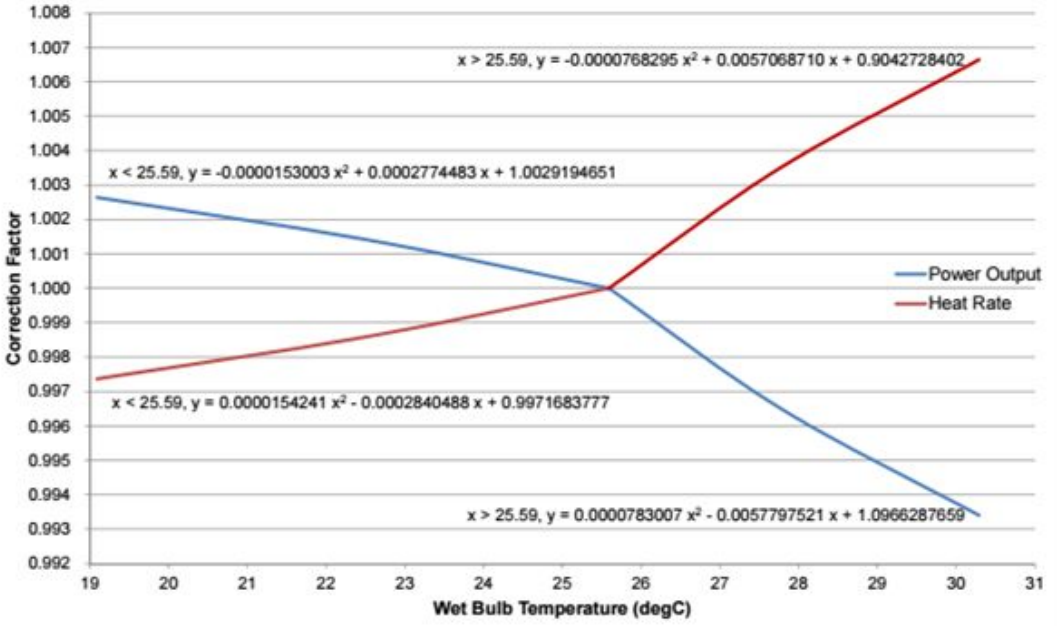


Figure A.38: Natural Gas Kwt Ratio Correction Factor



SCHEDULE 5
METERING SYSTEM

Purpose

The Metering System shall be capable of obtaining and interpreting readings and performing the adjustments, and shall be installed, operated and maintained in accordance with the Metering Code. The Metering System shall be part of the Facility's control and measurement installations and the criteria specified below.

The Metering System shall be for net power output and power input, as follows:

(a) Export: Metering CT's shall be located on the high voltage bushings of the main transformers; and

(b) Import: Metering CT's shall be located on the high voltage bushings of the main transformer as required to measure the amount of electricity provided by GPA to the Facility.

(c) The CT's are common for Export and Import metering sytem.

Power Tariff Metering

Power tariff metering shall be provided by the Project Company and agreed by GPA. These meters shall be connected to metering current transformers (CT's) located in the 115kV bushings of the generator step up transformers and to voltage transformers (VT's) for export and import metering. VT's shall be supplied and installed by the Project Company in the 115 kV switchyard.

The Main and Back-up meters shall be supplied from separate CT and VT cores. All meters shall support a minimum 5 different tariff rates. The metering system shall comply with GPA Metering Code and the metering system and instrument transformers shall be approved by GPA. The communication media between the GPA data collection system and the energy meters will be optic fibre line via OPGW cables

The following class of metering instrument transformers (items (a), (b) and (c)) for each circuit is required and to be approved by GPA:

(a) Class 0.2 current transformers (four wires having three phase circuit and neutral) (two cores for Main and Back-up);

(b) Class 0.2 voltage transformers (three phases - R, Y & B) (two cores for Main and Back-up);

(c) Two meters Class 0.2s, one Main and one Back-up meter (3-phase, four wire system, active and reactive power), both having export and import capabilities and with CT/VT compensation feature, in addition to the transformer loss feature, ensuring that all data is available for active and reactive power. Metering class for reactive power metering shall be 0.5;

(d) Billing system for monthly issuance of the bill;

(e) Data loggers;

(f) Control AC and DC cables;

(g) The UPS of power plant will be used for energy metering in emergency;

(h) The meters shall have an Ethernet port; and to be connected to GPA AMI system.

The tariff metering scheme shall have an overall accuracy of % for kWh metering as per ECA Article 12.1.

In summary the tariff metering system reading accuracies are to be within the tolerances shown in Table 1.

Table 1: Maximum Allowable Errors

Measured Parameter	**Maximum Error**
Net Energy Output (kWh) meters	± 0.2%
Capacity (MW) meters	± 0.2%
Instrument Transformers Calibration data shall be provided for each instrument transformer, which should result in a negligible overall error	± 0.2%

Data Logging and Transmittal

The measurement system shall log and calculate all readings in thirty (30) minute intervals, which start from the beginning of each hour. All capacities shall be calculated to be the integration of instantaneous readings of energy produced over such thirty (30) minute intervals divided by said period. Readings will be capable of being transmitted through the Remote Terminal Units (RTUs).

Security and Redundancy

(a) Full redundancy shall be provided for the central processing units (CPU) and for the communication links between them and the transducers, instruments, sensors, and other devices that detect, measure and transmit the parameters used by the measurement system to apply correction factors.

(b) The Project Company shall not be able to gain access to any software application or programs that may be used to operate or calibrate the CPU's and the transducers, instruments, sensors, and other devices which detect, measure and transmit the parameters used by the measurement system unless GPA's personnel input a restricted security code every time that this access is required.

Calculation of Adjustment Factors

GPA and the Project Company may agree to automate the calculation of capacity adjustment to Reference Site Conditions, in which case the Joint Coordinating Committee will be responsible for auditing the results.

Calibration of Metering System

The Project Company shall inspect, test and calibrate all electrical metering devices upon installation and at least once every 3 year thereafter.

SCHEDULE 6

ULSD Specification

DESCRIPTION	ASTM TEST METHOD	VALUE
Flash Point	D93	Min. 60 degC
Cloud Point	D2500	Max. 5 degC
Water & Sediment	D2709	Max. 0.05 vol%
Distillation Temp, 10% recovered	D86	180 - 230 degtC
Distillation Temp, 50% recovered	D86	230 - 310 degtC
Distillation Temp, 90% recovered	D86	282 - 360 degC
Distillation Temp, 95% recovered	D86	300 - 370 degC
Kinematic Viscosity	D445	1.9 ~ 4.1 mm2/s at 40 degC
Total Aromatic Hydrocarbons	D6591 or IP391	Max. 30 wt%
Dicyclic Aromatic Hydrocarbons	D6591	Max. 5 wt%
Tricyclic and higher Aromatic Hydrocarbons	D6591	Max. 1 wt%
Olefin Content	D1319	Max. 5 vol%
Ash	D482	Max. 0.01 wt%
Sulfur	D4294 or D5453 or D7039	Max. 14 ppmw
Sulfur Mercaptan	D3227	Max. 3 ppmw
Copper Strip Corrosion Rating (3hrs min at 50oC)	D130	Max. No. 1
Cetane Index	D613 or D976-80 or D4737	Min. 46
Carbon Residue on 10% distillation residue	D189 or D524 or D4530 or D6371	Max. 0.2 wt%
Lubricity, HFRR @ 60oC	D6079	Max. 400 micron
Conductivity	D2624 or D4308	Min. 100 pS/m Max. 600 pS/m
Density @ 15oC	D4052 or D1298	820 - 850 kg/m3
Gravity, API @ 60oF	D1295 or D4052	35 ~ 41
Color	D1500	Max. 2.0
Hydrogen Sulfide in Liquid	IP 570A	Max. 2.0 mg/kg
Strong Acid No.	D974	Nil
Total Acid No.	D974	Max. 0.2 mg KOH/g
Stability (Oxidation), 16Hrs	D2274	Max. 25 mg/L
Appearance @ ambient temp	D4176	Clear, bright and free from particulates and water
Haze Rating	D4176	Max. 1
Particulate Matter	D6217	Max. 10 mg/L (Max. 10 micron)
Water content	D6304	Max. 100 mg/kg

Filter Blocking Tendency (FBT)	D2068 or IP387	Max. 1.35
Fatty Acid Methyl Ester (FAME)	7371-14 or EN14078	Max. 0.1 vol%
Guaranteed Heating Value (HHV)	D240	Min. 5.70 MMBTU/bbl
Static Dissipation Additives (Stadis 450)	Declared	Report
Lubricity Additive	Declared	Report
Na	D7111	Less than 0.5 ppmw[1]
K	D7111	Less than 0.5 ppmw
Ca	D7111	Less than 0.125 ppmw
V	D7111	Less than 0.1 ppmw
Pb	D7111	Less than 0.1 ppmw
Ni	D7111	Less than 0.1 ppmw
Zn	D7111	Less than 0.1 ppmw
Cu	D7111	Less than 0.1 ppmw
Ba	D7111	Less than 0.1 ppmw
Others	-	Nil

[1] Pending confirmation on final numbers for Na, K, Ca and Va.

SCHEDULE 7

Natural Gas Specifications

DESCRIPTION	VALUE
Nitrogen, N2	0.014 - 0.32 %
Methane, CH4	87.8 - 91.2 %
Ethane, C2H6	4.2 - 8.6 %
Propane, C3H8	1.6 - 3.0 %
n-Butane, C4H10	0.24 - 0.7 %
n-Pentane, C5H12	0.01 - 0.02 %
Hydrogen sulfide, H2S and elemental sulfur, S	Nil
Trace metals (Na, K, etc.)	Nil
Others (carbon monoxide, alkenes, etc.)	Nil
HHV	1115 - 1142 BTU/scf
HHV	41.5 - 42.5 MJ/scm
Wobbe index, WI0 = LHV / (gas density / air density)0.5	22 - 75 MJ/Nm3
Temperature corrected Wobbe index, WIT = WI0 x (273 / gas temperature)0.5	±5 % variation for start-up
WIT variation rate	±0.1 MJ/m3/s
Pressure at terminal point	[60 - 70] barg
Temperature at terminal point (at outlet flange of regasification facility)	[40 - 55] degC
Water dewpoint at 60 barg	-5 degC

SCHEDULE 8
Early Transfer

Part A of Schedule 8 – Transfer Price

Reason for Termination Price to be Paid by GPA	Transfer Price
Project Company Event of Default	**Project Company Default Transfer Price** will be equal to the Outstanding Debt.
GPA Event of Default	**GPA Default Transfer Price** will be calculated as the present value of future Fixed Capacity Charge payments from the date of termination of the Agreement until the end of the Term of the Agreement, calculated at a discount rate of five percent (5%) per year, plus Termination Payments, provided that in no event shall such amount be less than the Outstanding Debt plus Termination Payments.
Termination by GPA for convenience	**Early Termination Price** will be calculated as the present value of future Fixed Capacity Charge payments from the date of termination of the Agreement until the end of the Term of the Agreement, calculated at a discount rate of five percent (5%) per year, plus Termination Payments, provided that in no event shall such amount be less than the Outstanding Debt plus Termination Payments.
Termination due to Prolonged Force Majeure	**Force Majeure Transfer Price** will be equal to the Outstanding Debt plus 50% of the projected equity investment determined as of Financial Close.

In this Schedule:

"**Outstanding Debt**" means, as of the date of termination:

(a) the lesser of (x) the aggregate principal amount of the Project Company's outstanding debt (including accrued interest and the Project Company's liability to a Lender in respect of any amounts drawn under a letter of credit for debt service reserve, up to an amount, for such amounts drawn under such a letter of credit, not exceeding thirty million Dollars (US$30,000,000) issued by or on behalf of the Project Company), (y) after the Commercial Operation Date, the then applicable Outstanding Debt Cap, and (z) the principal amount of the Project loan/s committed by Lenders pursuant to the Financing Documents as of Financial Close (the "**Initial Debt Amount**"); plus

(b) applicable swap breakage cost under the Financing Documents; plus

(c) accrued commitment fees and prepayment and make-whole premiums and penalties (including interest period breakage costs) payable under the Financing Documents.

"**Outstanding Debt Cap**" means for any period, the amount set forth next to such period in Part B of this Schedule 8, provided that such amount shall be increased by the amount of any actual delayed payment or actual non-payment of debt or increased amount of debt arising from a GPA Event of Default or the occurrence of an event of Force Majeure or an Excusable Event or a GPA Delay Event.

"**Termination Payments**" means:

(a) all income, receipts, sales, value added, transfer, property or other taxes and any other costs imposed on the Project Company by any Government Authority as a result of termination of the Agreement or the transfer of the Project Facilities to GPA or payment of the purchase price therefor;

(b) all reasonable and documented amounts payable by the Project Company with respect to each of the Contractors' termination costs for the termination of subcontracts entered into by a Contractor for the engineering, procurement and construction, or the operation and maintenance of the Project Facilities (including, for the avoidance of doubt, the provision of technical services or any other long-term programme or service for the Project Facilities);

(c) all reasonable and documented amounts outstanding and payable by the Project Company to a Contractor upon termination of the Construction Contract or an O&M Contract with respect to work completed or performed by each of the Contractors and not yet paid for by the Project Company and for which no amount of principal of debt or drawing of equity has been incurred; and

(d) all costs and expenses (including any redundancy or severance payments) payable by the Project Company or a Contractor arising from the termination, retrenchment or retirement of their respective employees or contractors in connection with the termination of the Agreement.

Notwithstanding the above, the following costs shall be excluded from the definition of Termination Payments:

(i) costs applicable to the early termination of the LTPA with Siemens Corporation that are in excess of: [Insert the relevant termination cost formula from the LTPA with Siemens Corporation] (it being acknowledged that GPA shall not be obliged to pay termination costs in respect of the termination of the LTPA to the extent that GPA elects to assume the LTPA pursuant to Article 4.5(h)(iii) of the ECA);

(ii) costs applicable to the early termination of the Construction Contract that are in excess of: [Insert the relevant termination cost formula from the Construction Contract] (it being acknowledged that GPA shall not be obliged to pay termination costs in respect of the termination of the Construction Contract to the extent that GPA elects to assume the LTPA pursuant to Article 4.5(h)(iii) of the ECA); and

(iii) costs applicable to the early termination of any other LTPA unless such costs have been previously approved by GPA (it being acknowledged that GPA shall not be obliged to pay termination costs in respect of the termination of such other LTPA to the extent that GPA elects to assume such other LTPA pursuant to Article 4.5(h)(iii) of the ECA).

Part B of Schedule 8 - Outstanding Debt Cap

Period	Outstanding Debt Cap (% of Initial Debt Amount)
1	100
2	100
3	100
4	99.4
5	98.3
6	97.3
7	96.1
8	94.9
9	92.6
10	90.1
11	86.6
12	82.7
13	78.4
14	72.6
15	66.6
16	60.3
17	54.0
18	47.8
19	42.3
20	36.7
21	30.7
22	24.5
23	18.0
24	9.3
25	0

SCHEDULE 9
Form of Performance Bond and Transfer Security

Performance Bond Form

Beneficiary: Guam Power Authority ("GPA")
Date: _____
PERFORMANCE BOND No.: _____

We have been informed that [Insert Name of the Project Company] (hereinafter called "the Project Company") has been awarded the Energy Conversion Agreement No, [Insert the ECA contract No.] with you, for the execution of [Name of the Project] (hereinafter called "the Contract").
Furthermore, we understand that, according to the conditions of the Contract, a Performance Bond is required.

At the request of the Project Company, we [INSERT NAME OF THE BANK] hereby irrevocably and unconditionally undertake to pay you any sum or sums not exceeding in total an amount of USD 63,800,000 (U.S. dollars SIXTY THREE MILLION AND EIGHT HUNDRED THOUSANDONLY) at sight, without protest or notification, and without inquiring any proof or conditions regarding your demand or the sum specified therein, and without consideration of any objections or protests which the Project Company may make, free of all imposts, taxes, duties, withholdings and/or deductions whatsoever both present and future, of any nature whatsoever and by whomsoever imposed and without setoff or counterclaim upon receipt by us of your first demand in writing accompanied by a written statement stating that the Project Company is in breach of its obligation(s) under the Contract.

Partial and multiple drawings are permitted.

Any demand submitted in compliance with the terms and conditions of this Performance Bond shall be duly honored within one (1) business day of the receipt of such demand.

This Performance Bond shall expire on the date on which GPA informs us in writing that three (3) Months have passed after the Day following the Day upon which the Facility is Commissioned (or, in the case that Project Company opts to pursue Remedial Actions, six (6) months thereafter) (as such terms are defined in the Contract) and GPA has returned the Performance Bond to us for cancellation.

Any demand for payment under this Performance Bond must be received by us of this office on or before the expiration date.

Notwithstanding the above, the Performance Bond validity date shall be automatically

extended by an additional six (6) months every time that the Commercial Operation Date (as defined in the Contract) is not achieved by the date that is thirty (30) days prior to the applicable Performance Bond expiration date. We hereby irrevocably undertake to pay the full amount of the Performance Bond to GPA if the documentary evidence of such extension of the validity of the Performance Bond is not received by GPA by the date that is fifteen (15) days prior to the applicable Performance Bond expiration date.

All commissions or other charges regarding the issuance and extensions of this Performance Bond shall be for the Project Company's account.

This Performance Bond is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758,

[signature(s)]

SDC_IMANAGE\12369\130001\31492058.v1-9/2/19

Transfer Security Form

Beneficiary: Guam Power Authority ("GPA")
Date: _____
TRANSFER SECURITY No.: _____

We have been informed that [Insert Name of the Project Company] (hereinafter called "the Project Company") has been awarded the Energy Conversion Agreement No, [Insert the ECA contract No.] with you, for the execution of [Name of the Project] (hereinafter called "the Contract").
Furthermore, we understand that, according to the conditions of the Contract, a Transfer Security is required.

At the request of the Project Company, we [INSERT NAME OF THE BANK] hereby irrevocably and unconditionally undertake to pay you any sum or sums not exceeding in total an amount of USD 15,000,000 (U.S. dollars FIFTEEN MILLION ONLY) at sight, without protest or notification, and without inquiring any proof or conditions regarding your demand or the sum specified therein, and without consideration of any objections or protests which the Project Company may make, free of all imposts, taxes, duties, withholdings and/or deductions whatsoever both present and future, of any nature whatsoever and by whomsoever imposed and without setoff or counterclaim upon receipt by us of your first demand in writing accompanied by a written statement stating that the Project Company is in breach of its obligation(s) under the Contract under Article 18.

Partial and multiple drawings are permitted.

Any demand submitted in compliance with the terms and conditions of this Transfer Security shall be duly honored within one (1) business day of the receipt of such demand.

This Transfer Security shall expire upon one (1) year subsequent to the date of Project Facilities Transfer.

Any demand for payment under this Transfer Security must be received by us of this office on or before the expiration date.

Notwithstanding the above, the Transfer Security validity date shall be automatically extended by each additional day the Project Facilities Transfer date has been extended.

All commissions or other charges regarding the issuance and extensions of this Transfer Security shall be for the Project Company's account.

SDC_IMANAGE\12369\130001\31492058.v1-9/2/19

This Transfer Security is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758,

[signature(s)]

SDC_IMANAGE\12369\130001\31492058.v1-9/2/19

SCHEDULE 10

ULSD AND NATURAL GAS METERING SYSTEM AND SETTLEMENT

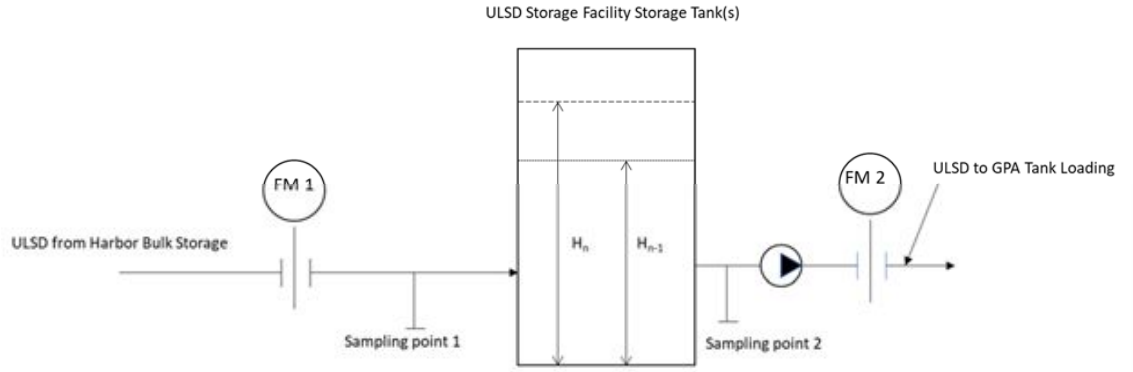
1.1 ULSD Fuel Metering System

The Liquid Fuel Metering System is used to determine the actual total quantity of ULSD Fuel (in MMBtu) consumed by the Facility during the billing period. ULSD metering system will include the following component:

- Flow Metering System
- Storage Tank Level Metering System
- USLD Sampling System

Schematic of the ULSD Fuel Metering System is presented on Figure 1.

Figure 1: USLD Metering System Schematic



The Flow Metering System shall be capable of obtaining and interpreting readings and performing the adjustments, if required, to comply with the pertinent information concerning ULSD consumption and shall be installed, operated and maintained in accordance with the OMIL R 117-1. The Flow Metering System shall be part of the Facility's control and measurement installations.

1.2 Liquid to be Measured

Measuring systems that are addressed in Schedule 10 shall be used for ULSD as specified in Schedule 6 of the ECA.

The transfer point to the Project Company of the ULSD shall be when the USLD supply pipeline supplying USLD from the Bulk Storage located in the ULSD Bulk Storage crosses the Facility Site boundary.

1.3 ULSD Fuel Flow Metering System

1.3.1 ULSD Flow Meter Location

1. Upstream of the ULSD Storage Facilities: A flow meter shown on the above Figure 1 as FM1 shall be located in the ULSD supply line at the boundary of the Facility. Two sets of meters, primary and backup meters, must be supplied.
2. Downstream of the ULSD transfer pumps: A flow meter shown on the above Figure 1 as FM2 shall be located in the line supplying ULSD to GPA truck loading facility. Two sets of meters, primary and backup meters, must be supplied.

1.3.2 Required Meter Class

Turbine meters are subject to bearing wear, fouling, and sensitive to viscosity changes, Ultrasonic meters are sensitive to air pocket entrainment. Coriolis mass flow meters measures mass flow directly with no need to convert from volumetric flow using density. Coriolis mass flow meters have no moving parts and are resistant to fouling.

The following type of metering is required, and to be approved by GPA:

Coriolis mass flow meters with accuracy class and performance meeting the requirements of International Organization for Legal Metrology (OIML) R117-1. Accuracy class for meters shall be 0.3 each in accordance with OIML R 117-1 Section 2.4 Table 1.

1.3.3 Meter Accuracy

The metering system reading accuracies are to be within the tolerances required by OIML R 117-1 Section 2.7 for temperature, pressure, or density. Meters shall be calibrated according to applicable API standards at least every three years in accordance with the ECA Section 13.4 to meet the accuracy class requirements of OIML R117-1.

1.3.4 Data Logging and Transmittal

Mass flow of fuel shall be transmitted to a data log that indicates time and date of the measurement as well as ambient conditions. Each set of primary and backup meters shall be totalized with totalized outputs available for data logging and transmittal.

1.3.5 Security and Redundancy

Flow meters shall be supplied in a set of primary and backup meters for each meter location. Each party to the ECA shall have the right to have one representative present to witness all tests, meter calibration, and measurements.

1.4 ULSD Sampling

The Project Company shall take ULSD samples [minimum of one sample during each billing period if ULSD has been delivered] at the sampling points next to the locations of the flow meters FM1 and FM2 shown on Figure 1 to determine ULSD higher heating value, density, and other characteristics required to calculate ULSD consumption for the purposes of Fuel Charge and to determine ULSD

compliance with the ULSD quality requirements specified in Schedule 6. For avoidance of doubt, ULSD heating value for the purposes of calculating Fuel Charge will be determined based on the samples taken from sampling point 2 as shown on the above diagram. All measurements and tests for quality shall be made in accordance with applicable American Society for Testing and Materials (ASTM) test methods, as called for in Schedule 6. ULSD testing must be performed by a third party laboratory. GPA is responsible to ensure that the required testing facilities are locally available in Guam to determine ULSD compliance with the ULSD quality requirements specified in Schedule 6. The cost of testing of all samples at FM1 and heating value at sampling point 2 will be at Project Company's cost and testing of all samples at FM2 at GPA cost. The laboratory shall provide a copy of the results of the test to both the GPA and the Project Company. A quality assurance system shall be in place for any laboratory facility involved in testing of samples, meter accuracy and meter calibration. Notification of any defect of quality of the ULSD shall be made in writing immediately after such apparent defect is discovered.

1.5 Storage Tank Level Measurement System

Each of the storage tanks installed as part of ULSD Storage Facilities must be equipped with electronic level metering system with accuracy acceptable to both parties to the ECA. The level metering system for each storage tank shall include two sets of meters – primary and backup.

1.6 Storage Tank Drainage

At the bottom of the storage tank water and sludge will accumulate over time which need to be drained periodically by the Project Company. The amount of any such sludge and water shall be determined by measuring the tank level difference before and after the drainage procedure by the Storage Tank Level Measurement System. The drainage amount shall be deducted from the total mass flow calculations of ULSD consumption by the Facility as set out in clause 1.7 of this Schedule. The drainage of the tank shall be performed under witness of GPA's. The timing and coordination with respect to tank draining shall be agreed by the Joint Coordinating Committee and GPA shall always have the right to witness tank draining and be provided with reasonable prior notice thereof.

1.7 Calculating ULSD Consumption by the Facility

12.5 Calculating ULSD Consumption by the Facility

The actual monthly ULSD quantity supplied to the ULSD Storage Facilities for n-th billing period shall be calculated using the following formula:

$$TFC_n = TMF_{Fn} \times HHV_{SP2} / 10^6$$

$$TMF_{Fn} = USLD_{MFFM1n} - (FS_n - FS_{n-1}) - FD_n$$

Where

$$FS_n = H_n \times A \times DEN_{SP2}$$

$$FS_{n-1} = H_{n-1} \times A \times DEN_{SP2(n-1)}$$

$$FD_n = \triangle H \times A \times DEN_{SP2n}$$ and where

TFC_n - total ULSD quantity supplied to the ULSD Storage Facilities during the n-th billing period (in MMBtu)

FS_n - total quantity of ULSD in the USLD Storage Facilities as measured by the level metering system at the end the n-th billing period (kg)

FS_{n-1} - total quantity of ULSD in the USLD Storage Facilities as measured by the level metering system at the end of the (n-1)-th billing period (in kg)

FD_n - total quantity of Drainage of the USLD Storage Facilities as measured during the n-th billing period (in kg)

$USLD_{MFFM1n}$ - total quantity of ULSD as measured by the flow meter 1 during n-th billing period, kg

HHV_{SP2} – ULSD average higher heating value during the n-th billing period as determined at the sampling point 2, Btu/kg

H_n – ULSD level in the USLD Storage Facilities' storage tank(s) in the end of the n-th billing period, m

H_{n-1} – ULSD level in the USLD Storage Facilities' storage tank(s) in the end of the (n—1)-th billing period, m

$\triangle H$ – ULSD level difference in the USLD Storage Facilities' storage tank(s) when Storage Tank Drainage is performed

A – ULSD Storage Facilities' storage tank cross-section area, m^2

DEN_{SP2} - ULSD average density during the n-th billing period as determined at the sampling point 2, kg/m^3

$DEN_{SP2(n-1)}$ - ULSD average density during the (n-1)-th billing period as determined at the sampling point 2, kg/m^3

The actual monthly ULSD quantity taken by GPA from the ULSD Storage Facilities for n-th billing period shall be calculated using the following formula:

$$GPAF_{Tn} = USLD_{MFFM2n} \times HHV_{2n} / 10^6$$

where

$GPAF_{Tn}$ – ULSD quantity taken by GPA from the ULSD Storage Facilities by truck, MMBtu

$USLD_{MFFM2n}$ - total quantity of ULSD as measured by the flow meter 2 during n-th billing period, kg

HHV_{2n} - ULSD average higher heating value during the n-th billing period as determined at the sampling point 2, Btu/kg

2 Natural Gas Metering System and Natural Gas Settlement

The Natural Gas Metering System is used to determine the actual total quantity of Natural Gas (in MMBtu) consumed by the Facility during the billing period. The Natural Gas metering system will include the following components:

- Flow Metering System
- On-line Gas Analyzer System

2.1.1 Gas to be Measured

The Natural Gas Metering System that is addressed in this Schedule 10 shall be used for Natural Gas as specified in Schedule 7 of the ECA.

The transfer point to the Project Company of Natural Gas shall be when the NG Fuel Pipeline supplying Natural Gas to the Facility crosses the Facility Site boundary.

2.1.2 Natural Gas Flow Metering and Gas Analyzer System

2.1.2.1 Natural Gas Flow Meter and Gas Analyzer System Location

1 The Natural Gas flow meter shall be located within the Facility Site boundary near the location where the NG Fuel Pipeline crosses the Facility Site boundary. The primary meter must be supplied, installed, owned and maintained by GPA Project Company may install Natural Gas backup measurement equipment downstream of GPA's measurement equipment for Natural Gas. In such case, Project Company shall be responsible for installing and maintaining the Natural Gas backup measurement equipment.

2 The Natural Gas on-line analyzer system shall be installed near the Natural Gas flow meter location: The primary Natural Gas analyzer monitoring Natural Gas composition and heating value must be installed, owned and maintained by GPA.. Project Company may install a backup Natural Gas analyzer downstream of GPA's Natural Gas analyzer. In such case, Project Company shall be responsible for installing and maintaining the backup Natural Gas analyzer.

2.1.2.2 Required Meter Class and Accuracy

The required class and accuracy of the Natural Gas metering system will be determined and agreed by the Parties during the Project design stage.

2.1.2.3 Data Logging and Transmittal

Mass flow, composition, and heating value of Natural Gas shall be transmitted to a data log that indicates time and date of the measurement as well as ambient conditions. Each set of primary and backup meters and analyzers shall be totalized with totalized outputs available for data logging and transmittal.

2.1.3 Right to Witness

Each party to the ECA shall have the right to have one representative present to witness all tests, meter calibration, and measurements.

2.1.4 Natural Gas Settlement

The Natural Gas Fuel consumption by the Facility during the n-th billing period will be determined as follows:

$TFCn = NG_{MFn} \times NG_{HHVn}$, where

TFCn = Total Fuel consumed at the Facility in n-th billing period expressed in MMBtu

NG_{MFn} = Total mass flow of Natural Gas measured by the Natural Gas Metering System during the n-th billing period expressed in kg (or lbs)

NG_{HHVn} = Natural Gas average higher heating value measured by the Natural Gas analyzer during the n-th billing period expressed in Btu/kg (of Btu/lb)

SCHEDULE 11

Adjustment in case Facility Operation on Natural Gas does not Begin Until the Beginning of Year 4 from the Day when the Facility is Commissioned

In the event that the Facility begins operating on Natural Gas at a date that is later than the Day following the Day of the third anniversary of the date upon which the Facility is Commissioned, the Guaranteed Availability, Guaranteed Net Capacity, Guaranteed Heat Rate and O&M Charge should be adjusted according to the methods described in this Schedule.

For the purposes of this Schedule 11, "year" means a 12 month period from the Day upon which the Facility is Commissioned. For avoidance of doubt, deemed Commissioning is not considered to be the Day upon which the Facility is Commissioned for the purposes of this Schedule 11.

1. Guaranteed Availability ULSD

The Guaranteed Availability is one of the factors to compute the Capacity Damages set foth in Article 8.3 of the Energy Conversion Agreement. The maintenance schedule and the scheduled outage rate will vary depending on the available year of ULSD and therefore a correction of the Guaranteed Availability is required. The average Guaranteed Availability over the term according to NG application time shall be according to Table 1 depending on the date when the Facility begins operating on Natural Gas.

Table 1.1 Guaranteed Average Avalabilities Depending on the Year of Switch to Natual Gas

Year	Guaranteed Availability[1] [%]
Year 1	96.11
Year 2	96.11
Year 3	96.11
Year 4	95.83
Year 5	95.81
Year 6	95.79
Year 7	95.77
Year 8	95.71
Year 9	95.49
Year 10	95.47
Year 11	95.45
Year 12	95.39

2 Guaranteed Availability is the average Guaranteed Availability over the Term depending on the year during which the Facility begins operating on Natural Gas. For the purposes of Capacity Damages set forth in ECA Article 8.3 Availability must be considered for each contract year. Availabilities for each contract year for each case year of the Facility starting operating on Natual Gas are provided in tables 1.1.1 through 1.1.22 below.

Year 13	95.37
Year 14	95.10
Year 15	95.08
Year 16	95.05
Year 17	95.00
Year 18	94.98
Year 19	94.76
Year 20	94.74
Year 21	94.68
Year 22	94.66
Year 23	94.64
Year 24	94.36
Year 25	94.34

[Table 1: Guaranteed Availability ULSD]

1.1 **Guaranteed Annual Availability versus the year during which the Facility begins operating on Natural Gas**

1.1.1 Year 5 (ULSD year 1 to year 4, Natural Gas year 5 to year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	97.98
Year 6	97.16
Year 7	97.98
Year 8	93.05
Year 9	97.98
Year 10	97.16
Year 11	91.68
Year 12	97.98
Year 13	97.16
Year 14	97.98
Year 15	93.05

Year 16	97.98
Year 17	97.16
Year 18	91.68
Year 19	97.98
Year 20	97.16
Year 21	97.98
Year 22	93.05
Year 23	97.98
Year 24	97.16
Year 25	91.68
Average for 25 years	95.83

1.1.2 Year 6 (ULSD Year 1 to Year 5, Natural Gas Year 6 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	97.98
Year 7	93.05
Year 8	97.98
Year 9	97.16
Year 10	97.98
Year 11	91.68
Year 12	97.16
Year 13	97.98
Year 14	93.05
Year 15	97.98
Year 16	97.16
Year 17	97.98
Year 18	91.68
Year 19	97.16
Year 20	97.98

Year 21	93.05
Year 22	97.98
Year 23	97.16
Year 24	97.98
Year 25	91.68
Average for 25 years	95.81

1.1.3 Year 7 (ULSD Year 1 to Year 6, Natural Gas Year 7 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	97.98
Year 9	91.68
Year 10	97.98
Year 11	97.16
Year 12	97.98
Year 13	93.05
Year 14	97.16
Year 15	97.98
Year 16	91.68
Year 17	97.98
Year 18	97.16
Year 19	97.98
Year 20	93.05
Year 21	97.16
Year 22	97.98
Year 23	91.68
Year 24	97.98
Year 25	97.98

Average for 25 years	95.77

1.1.4 Year 8 (ULSD Year 1 to Year 7, Natural Gas Year 8 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	97.98
Year 9	91.68
Year 10	97.98
Year 11	97.16
Year 12	97.98
Year 13	93.05
Year 14	97.16
Year 15	97.98
Year 16	91.68
Year 17	97.98
Year 18	97.16
Year 19	97.98
Year 20	93.05
Year 21	97.16
Year 22	97.98
Year 23	91.68
Year 24	97.98
Year 25	97.98
Average for 25 years	95.77

1.1.5 Year 9 (ULSD Year 1 to Year 8, Natural Gas Year 9 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61

Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.98
Year 10	97.16
Year 11	97.98
Year 12	93.05
Year 13	97.98
Year 14	97.16
Year 15	91.68
Year 16	97.98
Year 17	97.16
Year 18	97.98
Year 19	93.05
Year 20	97.98
Year 21	97.16
Year 22	97.98
Year 23	91.68
Year 24	97.16
Year 25	97.98
Average for 25 years	95.71

1.1.6 Year 10 (ULSD Year 1 to Year 9, Natural Gas Year 10 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50

Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	97.16
Year 11	93.05
Year 12	97.98
Year 13	97.16
Year 14	97.98
Year 15	91.68
Year 16	97.98
Year 17	97.16
Year 18	93.05
Year 19	97.98
Year 20	97.16
Year 21	97.98
Year 22	91.68
Year 23	97.98
Year 24	97.16
Year 25	93.05
Average for 25 years	95.49

1.1.7 Year 11 (ULSD Year 1 to Year 10, Natural Gas Year 11 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	93.05

Year 12	97.16
Year 13	97.98
Year 14	91.68
Year 15	97.98
Year 16	97.16
Year 17	97.98
Year 18	93.05
Year 19	97.16
Year 20	97.98
Year 21	91.68
Year 22	97.98
Year 23	97.16
Year 24	97.98
Year 25	93.05
Average for 25 years	95.47

1.1.8 Year 12 (ULSD Year 1 to Year 11, Natural Gas Year 12 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	97.16
Year 13	91.68
Year 14	97.98
Year 15	97.16
Year 16	97.98

Year 17	93.05
Year 18	97.98
Year 19	97.16
Year 20	91.68
Year 21	97.98
Year 22	97.16
Year 23	97.98
Year 24	93.05
Year 25	97.98
Average for 25 years	95.45

1.1.9 Year 13 (ULSD Year 1 to Year 12, Natural Gas Year 13 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.68
Year 14	97.16
Year 15	97.98
Year 16	93.05
Year 17	97.98
Year 18	97.16
Year 19	97.98
Year 20	91.68
Year 21	97.16

Year 22	97.98
Year 23	93.05
Year 24	97.98
Year 25	97.16
Average for 25 years	95.39

1.1.10 Year 14 (ULSD Year 1 to Year 13, Natural Gas Year 14 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	97.16
Year 15	93.05
Year 16	97.98
Year 17	97.16
Year 18	97.98
Year 19	91.68
Year 20	97.98
Year 21	97.16
Year 22	93.05
Year 23	97.98
Year 24	97.16
Year 25	97.98
Average for 25 years	95.39

1.1.11 Year 15 (ULSD Year 1 to Year 14, Natural Gas Year 15 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61
Year 15	93.05
Year 16	97.16
Year 17	97.98
Year 18	91.68
Year 19	97.98
Year 20	97.16
Year 21	97.98
Year 22	93.05
Year 23	97.16
Year 24	97.98
Year 25	91.68
Average for 25 years	95.10

1.1.12 Year 16 (ULSD Year 1 to Year 15, Natural Gas Year 16 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61

Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61
Year 15	92.50
Year 16	97.16
Year 17	91.68
Year 18	97.98
Year 19	97.16
Year 20	97.98
Year 21	93.05
Year 22	97.98
Year 23	97.16
Year 24	91.68
Year 25	97.98
Average for 25 years	95.08

1.1.13 Year 17 (ULSD Year 1 to Year 16, Natural Gas Year 17 to Year 25)

Year, Contract Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13

Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61
Year 15	92.50
Year 16	96.61
Year 17	91.68
Year 18	97.98
Year 19	97.16
Year 20	93.05
Year 21	97.98
Year 22	97.16
Year 23	97.98
Year 24	91.68
Year 25	97.98
Average for 25 years	95.05

1.1.14 Year 18 (ULSD Year 1 to Year 17, Natural Gas Year 18 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13

Year 14	96.61
Year 15	92.50
Year 16	96.61
Year 17	91.13
Year 18	97.16
Year 19	97.98
Year 20	93.05
Year 21	97.16
Year 22	97.98
Year 23	91.68
Year 24	97.98
Year 25	97.16
Average for 25 years	95.00

1.1.15 Year 19 (ULSD Year 1 to Year 18, Natural Gas Year 19 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61
Year 15	92.50
Year 16	96.61
Year 17	91.13
Year 18	96.61

Year 19	93.05
Year 20	97.98
Year 21	97.16
Year 22	91.68
Year 23	97.98
Year 24	97.16
Year 25	97.98
Average for 25 years	95.98

1.1.16 Year 20 (ULSD Year 1 to Year 19, Natural Gas Year 20 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61
Year 15	92.50
Year 16	96.61
Year 17	91.13
Year 18	96.61
Year 19	92.50
Year 20	97.16
Year 21	97.98
Year 22	91.68
Year 23	97.16

Year 24	97.98
Year 25	93.05
Average for 25 years	94.76

1.1.17 Year 21 (ULSD Year 1 to Year 20, Natural Gas Year 21 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61
Year 15	92.50
Year 16	96.61
Year 17	91.13
Year 18	96.61
Year 19	92.50
Year 20	96.61
Year 21	91.68
Year 22	97.98
Year 23	97.16
Year 24	93.05
Year 25	97.98
Average for 25 years	94.74

1.1.18 Year 22 (ULSD Year 1 to Year 21, Natural Gas Year 22 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61
Year 15	92.50
Year 16	96.61
Year 17	91.13
Year 18	96.61
Year 19	92.50
Year 20	96.61
Year 21	91.13
Year 22	97.16
Year 23	97.98
Year 24	93.05
Year 25	97.16
Average for 25 years	94.68

1.1.19 Year 23 (ULSD Year 1 to Year 22, Natural Gas Year 23 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13

Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61
Year 15	92.50
Year 16	96.61
Year 17	91.13
Year 18	96.61
Year 19	92.50
Year 20	96.61
Year 21	91.13
Year 22	96.61
Year 23	93.05
Year 24	97.98
Year 25	97.16
Average for 25 years	94.66

1.1.20 Year 24 (ULSD Year 1 to Year 23, Natural Gas Year 24 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43

Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61
Year 15	92.50
Year 16	96.61
Year 17	91.13
Year 18	96.61
Year 19	92.50
Year 20	96.61
Year 21	91.13
Year 22	96.61
Year 23	92.50
Year 24	97.16
Year 25	97.98
Average for 25 years	94.64

1.1.21 Year 25 (ULSD Year 1 to Year 24, Natural Gas Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61

Year 15	92.50
Year 16	96.61
Year 17	91.13
Year 18	96.61
Year 19	92.50
Year 20	96.61
Year 21	91.13
Year 22	96.61
Year 23	92.50
Year 24	96.61
Year 25	91.68
Average for 25 years	94.36

1.1.22 Natural Gas is not available (ULSD Year 1 to Year 25)

Year	Guaranteed Annual Availability [%]
Year 1	96.61
Year 2	92.50
Year 3	96.61
Year 4	91.13
Year 5	96.61
Year 6	92.50
Year 7	96.61
Year 8	91.13
Year 9	97.43
Year 10	96.61
Year 11	92.50
Year 12	96.61
Year 13	91.13
Year 14	96.61
Year 15	92.50
Year 16	96.61
Year 17	91.13
Year 18	96.61
Year 19	92.50

Year 20	96.61
Year 21	91.13
Year 22	96.61
Year 23	92.50
Year 24	96.61
Year 25	91.13
Average for 25 years	94.34

2. Capacity ULSD

The Dependable Capacity is one of the factors to compute the Fixed Capacity Charge as per Schedule 4. Due to potential increased degradation due to ULSD operation countinuing beyond the date falling on the Day of the third anniversary of the date upon which the Facility is Commissioned, the Dependable Capacity requires correction. Table 2.1 stipulates the Capacity Degradation Factor for ULSD and Natural Gas operation depending on the year during which the Facility begins operating on Natural Gas. The Capacity Degradation Factor for ULSD will change every year after year 3 for as long as the Facility continues operating on ULSD. The Capacity Degradation Factor for Natural Gas will be applied from the date upon which the Facility starts operating on Natual Gas and will remain unchaged during the remaining Term.

Table 2.1 Capacity Degradation Factor

Period When Applied	Capacity Degradation Factor ULSD [CDF_{ULSD_n}]	Period when Applied	Capacity Degradation Factor NG [CDF_{NG_n}]
Year 1	1	Year 1 to end of term	1.00000
Year 2	1	Year 2 to end of term	1.00000
Year 3	1	Year 3 to end of term	1.00000
Year 4	1.0205	Year 4 to end of term	1.00000
Year 5	1.0154	Year 5 to end of term	1.00000
Year 6	1.0234	Year 6 to end of term	1.00000
Year 7	1.0227	Year 7 to end of term	1.00000
Year 8	1.0273	Year 8 to end of term	1.00000
Year 9	1.0230	Year 9 to end of term	1.00000
Year 10	1.0291	Year 10 to end of term	1.00000
Year 11	1.0293	Year 11 to end of term	1.00000
Year 12	1.0352	Year 12 to end of term	1.0032
Year 13	1.0289	Year 13 to end of term	1.0052
Year 14	1.0394	Year 14 to end of term	1.0073
Year 15	1.0410	Year 15 to end of term	1.0088
Year 16	1.0471	Year 16 to end of term	1.0147
Year 17	1.0308	Year 17 to end of term	1.0119
Year 18	1.0413	Year 18 to end of term	1.0091
Year 19	1.0429	Year 19 to end of term	1.0106
Year 20	1.0475	Year 20 to end of term	1.0151
Year 21	1.0501	Year 21 to end of term	1.0176
Year 22	1.0419	Year 22 to end of term	1.0097

Period When Applied	Capacity Degradation Factor ULSD [CDF_{ULSD_n}]	Period when Applied	Capacity Degradation Factor NG [CDF_{NG_n}]
Year 23	1.0462	Year 23 to end of term	1.0138
Year 24	1.0490	Year 24 to end of term	1.0166
Year 25	1.0520	Year 25 to end of term	1.0195

2.1 Correction of Dependable Capacity prior to availability of Natural Gas

During the period when the Facility is operating on ULSD starting from the date falling on the Day following the date of the third anniversary of the Day upon which the Facility is Commisioned and until the date upon which the Facility begins operating on Natural Gas, the Dependable Capacity will be corrected with the Capacity Degradation Factor ULSD [CDF_{ULSD_n}]. The Dependable Capacity shall be corrected at the beginning of each year after the third anniversary from the date upon which the Facility is Commissioned using the corresponding Capacity Degradation Factor ULSD from Table 2.1, with such degradation factor applied during the entire year except for the year during which the Facility switches to Natual Gas, in which case the Capacity Degradation Factor ULSD will be applied only for the part of the Contract Year during which the Facility operated on ULSD. The Dependable Capacity shall be corrected according to Clause 2.2 of this Schedule from the date when the Facility starts operating on Natural Gas for the remainder of the Term.

Equation:
$DCCF_n = CDF_{ULSD_n}$

Definitions:

$DCCF_n$: Dependable Capacity Correction Factor in n-th period as per Schedule 4

CDF_{ULSD_n}: Capacity Degradation Factor ULSD as per Table 2.1 of this Schedule in n-th period to correct the Dependable Capacity for prolonged ULSD operation prior the date when Facility begins operating on Natural Gas.

2.2 Correction of Dependable Capacity after availability of Natural Gas

From the date when the Facility begins operating on Natural Gas, the Dependable Capacity will be corrected with the Capacity Degradation Factor NG [CDF_{NG_n}]. The Capacity Degradation Factor NG [CDF_{NG_n}] corresponding to the Contract Year when the Facility begins operating on Natural Gas in the Table 2.1 shall be applicable and remain unchanged for the remainder of the Term.

Equation:
$DCCF_n = CDF_{NG_n}$

Definitions:

$DCCF_n$: Dependable Capacity Correction Factor in n-th period as per Schedule 4

CDF_{NG_n}: Capacity Degradation Factor NG from Table 2.1 corresponding to the year when the Facility begins operating on Natural Gas applicable to the n-th billing period starting from the date on which the Facility begins operating on Natural Gas. The Capacity Degradation Factor NG will remain be applicable and unchanged for the remainder of the Term.

3. Facility Heat Rate

The Guaranteed Heat Rate is one of the factors used to compute the Fuel Charge as per Schedule 4. Due to potential increased degradation during ULSD operation, the Heat Rate requires correction in case the start of operation on Natural Gas is delayed beyond the third anniversary from the Day upon which the Facility is Commissioned. Table 3.1 stipulates the Capacity Degradation Factors for ULSD and Natural Gas depending on the year during which the Facility begins operating on Natural Gas. The Heat Rate Degradation Factor for ULSD will change every year after year 3 for as long as the Facility continues operating on ULSD. The Heat Rate Degradation Factor for Natural Gas1 will be applied from the date upon which the Facility began operating on Natual Gas and until the date when the first Type C inspections after switching to Natural Gas are completed for all three gas turbine Units. The Heat Rate Degradation Factor for Natural Gas2 will be applied from the date upon which the first Type C inspections after switching to Natural Gas are completed for all the gas turbine Units and will remain unchaged for the remainder of the Term.

Table 3.1 Heat Rate Degradation Factors

Period When Applied	**Heat Rate Degradation Factor ULSD [$HRDF_{ULSD}$]**	**Period When Applied**	**Heat Rate[2] Degradation Factor NG[$HRDF_{NG}$]**	
			Until all three gas turbine units undergo Type C inspection [$HRDF_{NG1}$]	**After switch to NG after all three gas turbine units undergo Type C inspection until the end of the Term [$HRDF_{NG2}$]**
Year 1	1	Year 1	1	1
Year 2	1	Year 2	1	1
Year 3	1	Year 3	1	1
Year 4	1.0116	Year 4	1.0116	1.0058
Year 5	1.0085	Year 5	1.0085	1.0042
Year 6	1.0130	Year 6	1.0130	1.0065
Year 7	1.0138	Year 7	1.0138	1.0069
Year 8	1.0157	Year 8	1.0157	1.0078
Year 9	1.0121	Year 9	1.0121	1.0060
Year 10	1.0156	Year 10	1.0156	1.0078
Year 11	1.0156	Year 11	1.0156	1.0078
Year 12	1.0186	Year 12	1.0186	1.0093
Year 13	1.0128	Year 13	1.0128	1.0064
Year 14	1.0189	Year 14	1.0189	1.0094

Year 15	1.0187	Year 15	1.0187	1.0108
Year 16	1.0217	Year 16	1.0217	1.0073
Year 17	1.0147	Year 17	1.0147	1.0104
Year 18	1.0207	Year 18	1.0207	1.0103
Year 19	1.0205	Year 19	1.0205	1.0115
Year 20	1.0230	Year 20	1.0230	1.0111
Year 21	1.0239	Year 21	1.0239	1.0120
Year 22	1.0222	Year 22	1.0222	1.0111
Year 23	1.0243	Year 23	1.0243	1.0121
Year 24	1.0244	Year 24	1.0244	1.0122
Year 25	1.0258	Year 25	1.0258	1.0129

3.1 Correction of Guaranteed Heat Rate prior to availability of Natural Gas

During the period when theFacility is operating on ULSD starting from the date falling on the Day following the date of the third anniversary of the Day when the Facility is Commisioned until the date upon which the Facility begins operating on Natural Gas, the Guaranteed Heat Rate(s) included in Schedule 4 will be corrected with the Heat Rate Degradation Factor ULSD [$HRDF_{ULSD_n}$]. The Guaranteed Heat Rate(s) shall be corrected at the beginning of each year after the third anniversary from the date upon which the Facility is Commissioned using the corresponding Heat Rate Degradation Factor ULSD from Table 3.1, with such degradation factor applied during the entire year except for the year during which the Facility switches to Natual Gas, in which case the Capacity Degradation Factor ULSD will be applied only for the part of the Contract Year during which the Facility operated on ULSD. The Guaranteed Heat Rate shall be corrected according to Clause 3.2 of this Schedule from the date when the Facility starts operating on Natural Gas until the end of the Term.

Equation:

$GHRCF_n = HRDF_{ULSD_n}$

Definitions:

$GHRCF_m$: Guaranteed Heat Rate Correction Factor for the n-th billing period as per Schedule 4

$HRDF_{ULSD_n}$: Heat Rate Degradation Factor ULSD corresponding to the year during which the Facilty begins operating on Natural Gas as per Table 2.1 of this Schedule in n-th billing period to correct the Guaranteed Heat Rate for additional heat rate degradation in the event of the c Facility continuing to operate on ULSD after the date that falls on the Day of the third anniversary of the date upon which the Facility is Commissioned. The $HRDF_{HLSD}$ is applicable from the date following the third anniversary from the date upon which the Facility is Commissioned until the date when the Facility begins operating on Natural Gas.

3.2 Correction of Guaranteed Heat Rate after the Facilty begins operating on Natural Gas

a) From the date the Facility begins operating on Natural Gas, the Guaranteed Heat Rate will be corrected with the Heat Rate Degradation Factor ULSD [$HRDF_{NG1}$] corresponding to the year when the Facility begins operating on Natural Gas. The Heat Rate Degradation Factor ULSD [$HRDF_{NG1}$] shall remain unchaged and be applicable until the date when the Type C inspections are completed for all three gas turbine Units .
b) From the date when all three gas turbine Units have completed Type C inspections, the Guaranteed Heat Rate shall be corrected with the Heat Rate Degradation Factor $HRDF_{NG2}$ corresponding to the year during which the Facility begins operating on Natural Gas. The correction factor $HRDF_{NG2}$ shall remain unchanged and be applicable for the remaining Term.

Equation:

a) $GHRCF_n = HRDF_{NG1_n}$

b) $GHRCF_n = HRDF_{NG2_n}$

Definitions:

$GHRCF_m$: Guaranteed Heat Rate Correction Factor for the n-th billing period to be used in Schedule 4

$HRDF_{NG1_n}$: Heat Rate Degradation Factor NG1 as per Table 2.1 of this Schedule 11 corresponding to the year when the Facilty begins operating on Natural Gas applicable for n-th billing period to to correct the Guaranteed Heat Rate. Heat Rate Degradation Factor NG1 is used from the date when the Facility begins operating on Natural Gas and shall remain unchanged and be applicable until the date when Type C inspections are completed for all three gas turbine Units.

$HRDF_{NG2_n}$: Heat Rate Degradation Factor NG2 as per Table 2.1 of this Schedule 11 corresponding to the year when the Facility begins operating on Natural Gas for n-th period to correct the Guaranteed Heat Rate. Heat Rate Degradation Factor NG_2 [$HRDF_{NG2}$] shall be applied starting from the date when the Type C inspection is completed for all three gas turbine Units and remain unchanged and be applicable for the remaining Term.

4 O&M Charge

4.1 Fixed O&M Charge

The O&M Charge for ULSD operation specified in Schedule 4, Table A3 will be corrected to account for additional maintenance cost associated with the prolonged ULSD operation. The correction will be applied from the date following the Day of the third anniversary from the Day upon which the Facility is Commissioned and continue until the date that the Facility begins operation on Natural Gas. The Project Company will provide load data adjusted to Site Reference Conditions for each billing period for each gas turbine Unit to GPA for determination of the Correction Factor Load [CFL].

Equations:

$CFL_n = (CFL_{GT1_n} + CFL_{GT2_n} + CFL_{GT3_n})/3$

CFL_{GT} = [1.065] for gas turbine operation with an average load for the n-th period of payment between 96 and 100% based on the gas turbine capacity determined during the latest Dependable Capacity Test.

CFL_{GT} = [1.03] for gas turbine operation with an average load for the n-th period of payment between 91 and 95% based on the gas turbine capacity determined during the latest Dependable Capacity Test.

CFL_{GT} = [1.00] for gas turbine operation with an average load for the n-th period of payment equal to or less than 90% based on the gas turbine capacity determined during the latest Dependable Capacity Test.

Definition

CFL_n = Correction Factor Load based on the average of the Correction Factor Loads for the gas turbine units for the n-th period as per Schedule 4.

CFL_{GT1_n} = Correction Factor Load for gas turbine unit 1 based on its average load during the n-th period

CFL_{GT2_n} = Correction Factor Load for gas turbine unit 2 based on its average load during the n-th period

CFL_{GT3_n} = Correction Factor Load for gas turbine unit 3 based on its average load during the n-th period

The average load for a unit during the n-th billing period shall be calculated as (a) the sum of actual energy outputs of the Unit recorded during such n-th billing period in 30 minute intervals in kilowatt-hours and corrected to Site Reference Conditions divided by (b) the product of the Dependable Capacity and the total number of hours in n-th billing period.

4.2 End of the Term major overhaul

Pursuant to Article 17 of the ECA, the Project Company is obligated to perform a Final Major Overhaul on the gas turbines. The Final Major Overhaul shall be any A, B, or C Level inspection as defined by the manufacturer. Based on the baseline scenario which includes three years of ULSD operation followed by NG operation thereafter, the Final Major Overaul before Project Facilities Transfer will be a Level A inspection for all generation units.

A delay of NG supply may result in a change of the maintenance schedule according to the schedule stipulated in the Project Company's long term service agreement requiring a level B or C major overhaul as the Final Major Overhaul. Any reasonable and documented additional cost associated with the change from a level A to a level B or C major overhaul up to the amounts specified below shall be compensated by GPA.

In case a level B inspection is performed as the Final Major Overhaul GPA shall pay an amount up to but not exceeding [5,175,000 USD] per Unit to the Project Company subject to escalation stipulated in the Long Term Service Program.

In case a level C inspection is performed as the Final Major Overhaul GPA shall pay an amount up to but not exceeding [6,150,000 USD] per Unit to the Project Company subject to escalation stipulated in the Long Term Service Program.

Sponsors' Comments dated September 2, 2019 on
GPA's Comments dated August 26, 2019

LLA

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GUAM POWER AUTHORITY
LEASE

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LEASE AGREEMENT
BETWEEN
GUAM POWER AUTHORITY
AND

This LEASE AGREEMENT, is made and executed this day of 2019, by and between GUAM POWER AUTHORITY, (hereinafter referred to as "**GPA**"), a public corporation and autonomous instrumentality of the Government of Guam, and ***(COMPANY)*** (hereinafter referred to as the "**Project Company**"), a private corporation, duly organized and existing under the laws of Guam, duly registered to do business in Guam, with its local address at_____. (GPA and the Project Company may sometimes jointly be referred to herein as the "**Parties**".)

R E C I T A L S

WHEREAS, GPA holds the title for property;

WHEREAS, GPA, through its solicitation process **(MS BID GPA-034-18)** has entered into an Energy Conversion Agreement with the Project Company on (***Insert ECA Date***) (hereinafter referred to the "**ECA**") in relation to a 198MW power generation facility to be built owned and operated by Project Company on the Premises (as hereinafter defined); and

WHEREAS, GPA desires to lease the Premises to the Project Company and the Project Company desires to accept such lease upon and subject to terms and conditions set forth herein for the purposes of implementing the ECA.

NOW THEREFORE, in consideration of the mutual agreements herein contained and other good and valuable consideration, receipt and sufficiency of which are hereby acknowledged, the Parties hereto agree as follows:

ARTICLE 1: LEASE

GPA leases to the Project Company on the terms and conditions in this Lease Agreement the Premises set forth in Exhibit "**A**", Survey Maps & Legal Description, attached hereto and incorporated herein by this reference.

As used in this Lease Agreement, the term "**Premises**" refers to the real property described in Exhibit "**A**" on which the Project Facilities are to be installed (defined by the boundaries [plot designation or coordinates][1]), and to any personal property and improvements located on said real property on Commencement Date (as defined below).

Capitalized terms included but not defined in this Lease Agreement shall have the meanings set forth in the ECA. In the event of any inconsistency between any provisions of this Lease Agreement and those of the ECA, the provisions of the ECA shall prevail.

ARTICLE 2: TERM

The term of this Lease Agreement (the "**Term**") will commence on upon the date of signature of the ECA (the "**Commencement Date**") and shall terminate twenty five (25) Contract Years after the Commercial Operation Date (the "**Termination Date**"), provided, however, that the Term shall be extended or earlier terminated to match any extension or early termination of the ECA. In no event shall this Lease Agreement be terminated by GPA while the ECA is in effect.

[1] Sponsors to provide plot design or coordinates prior to signing the Lease Agreement.

ARTICLE 3: DELIVERY OF POSSESSION

Possession of the Premises will be delivered to Project Company on Commencement Date. If GPA, for any reason whatsoever, cannot deliver possession of the Premises to Project Company on Commencement Date, this Lease Agreement shall not be void or voidable. GPA shall be responsible for, and Project Company is entitled to, the full compensation for any loss, damage, cost, expense incurred due to any delays in the delivery of the Premises. Project Company is further entitled to the extension of time for its performance of obligations under the ECA for the time being delayed by GPA to deliver the Premises.

Project Company (together with its agents (including independent consultants), lenders, employees, contractors and subcontractors) shall have the right to enter unto or upon and exit the Premises at any time prior to the Commencement Date for the purpose of making necessary investigations and conducting site studies; provided, however, that Project Company shall not commence construction or other activity upon the Premises that alters or changes the Premises in any manner prior to the Commencement Date, except in relation to the carrying out of [site investigations, site grading, site studies, site surveys, road paying work and building foundation][2] by the Project Company or its Construction Contractor.

ARTICLE 4: RENT

Project Company will pay to GPA as rent, without deduction, setoff, notice, or demand, the annual sum of $100.00 (U.S. Dollars), which shall be paid as follows: [•].

Project Company shall be responsible for any and all of the costs related to compliance with its obligations set forth herein.

ARTICLE 5: USE OF PREMISES

The Premises will be used and occupied by Project Company only for the purpose of its planning, development, construction, commissioning, testing, operation, repair, and maintenance of the Project Facilities and all things reasonably incidental to the foregoing.

ARTICLE 6: CONDITION OF PREMISES

Subject to the provisions of the ECA, Project Company has inspected, and accepts the condition and state of the Premises. Project Company acknowledges that no representations, statements, or warranties, express or implied, have been made by or on behalf of GPA in respect to the condition of the Premises, including all facilities located thereon, or whether the intended use or occupation may be made of them.

ARTICLE 7: OWNERSHIP OF IMPROVEMENTS

All improvements erected or placed on the Premises after the Commencement Date by and on behalf of Project Company are and shall be the property of Project Company during the Term, subject to the terms and condition of this Lease Agreement. Upon the expiration or termination of the Lease Agreement, all such improvements shall become the property of GPA; provided, however, that the payment of any necessary costs and expenses are duly made by GPA as the concurrent condition.

ARTICLE 8: ALTERATIONS

Project Company will not make, or cause to be made any alterations, improvements, additions and changes in or to the Premises without the prior written consent of GPA unless such alterations,

[2] Note to GPA: Sponsors to provide works that may need to be done prior to Commencement Date.

improvements, additions and changes are part of the design, construction, commissioning, operation or maintenance of the Facility or the Electrical Connection Facilities pursuant to the ECA.

Project Company shall not undertake any activity that may affect a historic or archeological property, including excavation, construction, alteration, or repairs of the Premises, without the prior approval of the applicable Government Authority and in compliance with section 106 of the National Historic Preservation Act (16 U.S.C. § 470), and the Archeological Resources Protection Act of 1979 (16 U.S.C. §470aa). Buried cultural materials may be present on the Premises. If those materials are encountered, Project Company shall stop work immediately and notify GPA and the relevant Government Authority.

ARTICLE 9: ENTRY / ACCESS

GPA shall have the right to enter the Premises pursuant to the applicable terms of the ECA to inspect the Premises or the performance by Project Company of the terms and conditions of this Lease Agreement and the ECA. Any claims by the Project Company against GPA for damages arising from such entry shall be governed by the Government Claims Act (5 GCA Section 6101 et. seq.). Nothing in this Lease Agreement shall be deemed to prejudice the rights of the Project Company under any contract, other agreement or law including, but not limited to the Government Claims Act. All necessary keys to the buildings and Premises occupied by Project Company shall be made available to GPA upon request.

Project Company, its employees, vendors, and invitees will be granted reasonable access to the Premises under this Lease Agreement. Project Company, and their employees, vendors, and invitees, agree to adhere to local and federal regulations regarding installation security, ingress, egress, safety and sanitation.

ARTICLE 10: ASSIGNMENT AND SUBLETTING

Subject to Article 13 of this Lease Agreement and Section 22.11 of the ECA, Project Company shall neither transfer, assign, nor sublet this Lease Agreement or any interest in it, or any property on the Premises, or grant any interest, privilege, or license whatsoever in connection with this Lease Agreement without the prior written consent of GPA.

ARTICLE 11: COMPLIANCE WITH LAW - WASTE AND NUISANCE PROHIBITED

During the Term of this Lease Agreement, Project Company shall observe and comply with applicable Law affecting the Premises, the equipment and any improvements by Project Company in and on the Premises, or any part of the Premises, and of all governmental departments, agencies, bureaus and officials.

Project Company shall not commit, or suffer to be committed, any waste on the Premises, or any nuisance unless related to the design, construction, commissioning, operation and maintenance of the Facility and the Electrical Connection Facilities in compliance with Prudent Utility Practices.

ARTICLE 12: ABANDONMENT OF PREMISES

Project Company shall not vacate or abandon the Premises at any time during the term of this Lease Agreement. If Project Company abandons, vacates, or surrenders the Premises or is dispossessed by process of law, or otherwise, any personal property belonging to Project Company and left on the Premises shall be deemed to be abandoned.

ARTICLE 13: PROJECT FINANCING

GPA acknowledges and accepts that the Project Company plans to obtain third party debt financing from Lenders to construct the Facility and hereby consents to customary lender mortgage and rights to step-in and assume the rights and obligations of the Project Company under this Lease Agreement as set forth in the Lender's Direct Agreement.

ARTICLE 14: LIABILITY FOR LIENS ON PREMISES

[Subject to Article 13, Project Company shall not permit any lien, charge, or encumbrance to be filed against the title of GPA with respect to the Premises including, but not limited to, by reason of work, labor, services or materials supplied to Project Company or anyone holding the Premises or any part of the Premises by, through or under Project Company. As to any and all alterations, additions, improvements, repairs and work installed or performed by Project Company on the Premises, or labor performed or material furnished in connection therewith, neither GPA nor the Premises shall under any circumstances be liable for the payment of any expense incurred or for the value of any work done or material furnished, but rather, all alterations, additions, improvements, and repairs, and labor and material, shall be made, furnished, and performed at the expense of Project Company unless specified otherwise in the ECA. Project Company shall be solely responsible to contractors, laborers, and material suppliers furnishing and performing the labor and material unless specified otherwise in the ECA.

If any lien, charge, or order for the payment of money shall hereafter be filed against the title or other estate of GPA in the Premises or any buildings or improvements on the Premises, or against GPA, whether or not the lien, charge, or order is valid or enforceable, Project Company shall, at the expense of Project Company cause the lien to be cancelled and discharged of record or bonded within thirty (30) days after the notice to Project Company of the filing of such item.]

ARTICLE 15: REPAIRS, UTILITIES AND TAXES TO BE LIABILITY OF PROJECT COMPANY

[Project Company shall maintain, or cause to be maintained, the Premises in reasonable order and condition in light of the use of the Premises and the condition of the Premises immediately prior to the Commencement Date.

Project Company, shall, at all times during the Term, at the expense of Project Company, keep and maintain in thorough repair and good, safe, and substantial order and condition, having regard to normal wear and tear, all buildings and improvements, and all building service equipment, on the land portion of the Premises at the commencement of the Term hereof and thereafter erected on the Premises, or forming part of the Premises, and promptly make all necessary repairs, both inside and outside, structural and non-structural, extraordinary and ordinary, whether or not the repairs were necessitated by wear, tear, obsolescence, or defects, latent or otherwise.

Project Company shall use reasonable precaution to prevent waste, damage, or injury, and shall at the expense of Project Company, keep, replace, and maintain in thorough repair, good order, and safe condition, and free from rubbish, and other obstructions or encumbrances, the areas in front of and adjacent to the Premises.

GPA shall in no event be required to make any alterations, additions, improvements, replacements, renewals or repairs of any kind, nature, or description, whatsoever during the term of this Lease Agreement, nor shall GPA be required to furnish Project Company any utilities or services of any kind whatsoever during the term unless specified otherwise in the ECA.]

Project Company shall be responsible for obtaining utilities and services for the Premises unless specified otherwise in the ECA. Project Company shall have the right, subject to Article 8, to install utilities, or make improvements to existing utilities on the Premises, including but without limitation,

the installation of emergency power generators, that may be necessary for the operation of the Project Facilities.

Project Company shall pay to the proper authority when and as the same become due and payable all taxes, assessments, and similar charges that, at any time during the Term of this Lease Agreement may be imposed on the Premises.

ARTICLE 16: LIABILITY ON DESTRUCTION OF PREMISES

If, during the Term of this Lease Agreement, buildings, improvements, or the building service equipment in and on the Premises at the commencement of the term] or thereafter erected on or in the Premises shall be destroyed or damaged in whole or in part by fire or other cause, Project Company shall give to GPA notice thereof. [Project Company shall, in accordance with its obligations under the ECA and to the extent such costs are covered by insurance policies obtained by the Project Company as required by the ECA, promptly repair, replace, and rebuild the destroyed buildings, improvements, or equipment on the premises, at least to the extent of the value and as nearly as possible to the character thereof at the commencement of the term and thereafter erected on the Premises.] In no event shall GPA be called on to repair, replace, or rebuild any buildings, improvements, or equipment, or to pay any of the expenses thereof, unless such destruction is caused by the negligent act or omission or intentional act of GPA, its agents, or employees.

ARTICLE 17: LIABILITY FOR INJURY OR DAMAGE UNDER LEASE AGREEMENT

Project Company is and shall be in exclusive control and possession of the Premises as provided in this Lease Agreement, and in no event shall GPA be liable for any injury or damage to any property or to any person happening on or about the Premises, or for any injury or damage to the Premises, nor to any property of Project Company, or of any other person contained in or on the Premises, except to the extent caused by the negligent act or omission or intentional act of GPA, its agents, or employees.

ARTICLE 18: LIABILITY FOR INSURANCE FOR LEASE

During the Term of this Lease Agreement, Project Company, at the expense of Project Company, shall be responsible to ensure that there is effective insurance covering Project Company's use of the Premises and operations allowed under this Lease Agreement, as provided for and in accordance with Article 14 of the ECA.

ARTICLE 19: ENVIRONMENTAL PROTECTION

19.1. Compliance with Law. Project Company shall comply, at its sole cost and expense, with the Laws that are applicable to Project Company's activities on the Premises. Project Company shall be financially responsible for environmental contamination of the Premises which occurs during the term of this Lease Agreement, unless otherwise specified in the ECA.

19.2. Permits. Project Company shall be solely responsible for obtaining at its cost and expense any Governmental Authorizations required for its operations under this Lease Agreement as set forth in the ECA.

19.3. Indemnification. Project Company shall, to the maximum limit provided for under the relevant insurance coverage under Article 14 of the ECA, indemnify and hold harmless GPA, and defend GPA against, any damages, costs, expenses, liabilities, fines, or penalties resulting from releases, discharges, emissions, spills, storage, treatment, disposal, or any other acts or omissions by Project Company, its officers, agents, employees, or contractors, or licensees, or the invitees of any of them, giving rise to GPA liability, civil or criminal, or responsibility under environmental Laws, except to the extent caused by the negligent act or omission or intentional act of GPA, its agents , or employees. This paragraph shall survive the termination of this Lease Agreement, and Project Company's obligations

under this paragraph shall apply whenever GPA incurs costs or liabilities for Project Company's actions of the types described in this paragraph.

19.4. Inspection. GPA's rights under this Lease Agreement specifically include the right for GPA or its officials to inspect upon reasonable notice (as set forth in the ECA) the Premises for compliance with environmental, safety, and occupational health Laws, whether or not GPA is responsible for enforcing them. Those inspections may be made without prejudice to the right of duly constituted enforcement officials to make them. GPA will give Project Company twenty- four (24) hours prior notice of its intention to enter the Premises unless it determines the entry is required for imminent safety, environmental, operations, or security purposes. Any claims by Project Company against GPA for damages arising from such entry shall be governed by the Government Claims Act.

19.5. Environmental Liability of Project Company. Notwithstanding any other provision of this Lease Agreement, Project Company does not assume any liability or responsibility for environmental impacts and damage caused by the prior property owner's use of toxic or hazardous wastes, substances, or materials on any portion of the Premises unless such liability or responsibility is provided for in the ECA. Project Company has no obligation under this Lease Agreement to undertake the defense of any claim or action, whether in existence now or brought in the future, solely arising out of the use or release of any toxic or hazardous wastes, substances, or materials on or from any part of the area, including the Premises, which occurred prior to the Commencement Date.

This Paragraph 19.5 shall survive the expiration or termination of this Lease Agreement.

19.6. Response or Remedial Actions. Project Company agrees to comply with the provisions of any health or safety plan in effect or any hazardous substance remediation or response agreement with environmental regulatory authorities during the course of any of the above described response or remedial actions. Any inspection, survey, investigation, or other response or remedial action will, to the extent practicable, be coordinated with representatives designated by Project Company. Any claims by Project Company or subcontractor against GPA for damages arising from such actions shall be governed by the Government Claims Act.

19.7. Storage of Hazardous Wastes. Project Company must comply with all applicable Laws relating to occupational safety and health, the handling and storage of hazardous materials, and the proper generation, handling, accumulation, treatment, storage, disposal, and transportation of hazardous wastes. Project Company shall not treat, store, transport, or dispose of hazardous waste unless Project Company is in possession of any required permit issued to it under the Resource Conservation and Recovery Act, as amended (RCRA). Project Company shall not treat, store, transport, or dispose of any hazardous waste under, pursuant to, or in reliance upon any permit issued to GPA. Project Company shall be liable for the cost of proper disposal of any hazardous waste generated by its approved subcontractors in the event of failure of the subcontractors to dispose properly of those wastes.

19.8. Environmental Records. Project Company must maintain and make available to GPA all records, inspection logs, and manifests that track the generation, handling, storage, treatment, and disposal of hazardous waste relevant to the Premises, as well as all other environmental records required to be maintained by Project Company in connection with its use and activities on the Premises by applicable Laws. GPA reserves the right to inspect the Premises and Project Company's records for compliance with applicable Laws relating to the generation, handling, storage, treatment, and disposal of hazardous waste, as well as to the discharge or release of hazardous substances. Violations will be reported by GPA to appropriate regulatory agencies, as required by applicable law. Project Company shall be liable for the payment of any fines and penalties that may accrue as a result of the actions of Project Company.

19.9. Spill Plans. If hazardous waste, fuel, chemicals, or other regulated hazardous substances will be present on the Premises, Project Company shall prepare a completed and approved plan prior to Commercial Operation Date on the Premises for responding to hazardous waste, fuel, and

other chemical spills. The plan shall comply with all applicable requirements and shall be updated from time to time as may be required to comply with changes in Site conditions or applicable Laws, and where required, shall be approved by the Government Authority having regulatory jurisdiction over the plan. The plan shall be independent of GPA spill prevention and response plans. Project Company shall not rely on use of GPA's personnel or equipment in execution of its plan. Project Company shall file a copy of the approved plan and approved amendments thereto with the within fifteen (15) days of approval. Notwithstanding the foregoing, should GPA provide any personnel or equipment, whether for initial fire response or spill containment or otherwise on request of Project Company, or because Project Company was not, in the sole opinion of GPA, conducting timely cleanup actions as required of Project Company under applicable laws and regulations, Project Company agrees to reimburse GPA for its costs in accordance with all applicable Laws.

19.10. RCRA Compliance. Project Company shall comply with the hazardous waste permit requirements under the RCRA or its state equivalent and any other applicable hazardous waste Laws pertaining to Project Company's use or activities on the Premises. Project Company must provide at its own expense hazardous waste storage facilities that comply with all applicable Laws that it may need for storage. GPA hazardous waste storage facilities will not be available to Project Company. Any violation of the requirements of this Paragraph shall be deemed a material breach of this Lease Agreement.

19.11. Discharge of Fill. Project Company shall not discharge, or allow the discharge of, any dredged or fill material into any waters or wetlands on the Premises except in compliance with the express written consent of the applicable Governmental Authority with jurisdiction over such matters.

19.12. Pesticides. Prior to the storage, mixing, or application of any pesticide, as that term is defined under the Federal Insecticide, Fungicide, and Rodenticide Act, Project Company shall prepare a plan for storage, mixing, and application of pesticides (Pesticide Management Plan). The Pesticide Management Plan shall be sufficient to meet all applicable Federal, state, and local pesticide requirements. Project Company shall store, mix, and apply all pesticides within the Premises only in strict compliance with the Pesticide Management Plan. The pesticides will only be applied by a licensed applicator.

19.13. National Pollutant Discharge Elimination System (NPDES) Permit. Project Company shall comply with all requirements of the Federal Water Pollution Control Act, as amended, the NPDES, and any applicable State or local requirements. If Project Company discharges wastewater to a publicly owned treatment works, Project Company must submit an application for its discharge prior to the start of this Lease Agreement. Project Company shall be responsible for meeting all applicable wastewater discharge permit standards. Project Company shall not discharge wastewater except under the authority of any NPDES permit, pretreatment permit, or any other permit issued for the Project. Project Company shall not install or use any septic tank facility.

19.14. Environmental Access. GPA, U.S. EPA/Guam EPA, and the government of Guam, and their respective officers, agents, employees, contractors, and subcontractors have the right, upon reasonable notice to Project Company to enter upon the Premises, to conduct investigations and surveys, including, where necessary, drilling, soil and water sampling, test pitting, and testing soil borings, if applicable.

ARTICLE 20: INDEMNIFICATION

GPA shall not be liable for any loss, injury, death, or damage to persons or property that at any time may be suffered or sustained by Project Company or by any person whosoever may at any time be using or occupying or visiting the Premises or be in, on or about the Premises, whether the loss, injury, death, or damage shall be caused by or in any way result from or arise out of any act, omission, or negligence of Project Company or of any occupation, visitor, or user of any portion of the Premises, or shall result from or be caused by any other matter or thing whether of the same kind as or of a different

kind than the matters of things above set forth. Project Company shall indemnify and hold harmless GPA against any and all claims, liabilities, losses, or damage whatsoever on account of any such loss, injury, death, or damage. Project Company waives all claims against GPA for damages to the buildings and improvements that are now on or hereafter placed or built on the Premises and to the property of Project Company in, on, or about the Premises, and for injuries to persons or property in or about the Premises, from any cause arising at any time. As to Project Company's obligations to GPA under this Article, the two preceding sentences shall not apply to loss, injury, death, or damage arising by reason of the negligent act or omission or misconduct of GPA, its agents, or employees.

ARTICLE 21: PROHIBITION OF VOLUNTARY ASSIGNMENT – EFFECT OF BANKRUPTCY OR INSOLVENCY

Neither this Lease Agreement nor the Premises nor any interest of GPA under this Lease Agreement in the Premises or in the building of improvements of the Premises shall be subject to involuntary assignment, transfer, sale, or to assignment, transfer or sale by operation of law in any manner whatsoever; any attempt at involuntary assignment, transfer, or sale shall be void and of no effect.

Without limiting the generality of the provisions of the preceding paragraph of this Article 21, Project Company agrees that termination of the ECA shall result in automatic termination of this Lease and all rights of Project Company under this Lease Agreement in and to the Premises and also all rights of any and all persons claiming under Project Company.

ARTICLE 22: PROJECT COMPANY EVENT OF DEFAULT AND REMEDIES ON DEFAULT

22.1. Project Company Event of Default. GPA may, at its option and without limiting GPA in the exercise of any other right or remedy it may have on account of a default or breach by Project Company, exercise the rights and remedies specified in Article 4.5 of the ECA upon the occurrence of the following ("**Project Company Event of Default**"):

(a) Project Company defaults in the payment of any money agreed to be paid by Project Company to GPA for rent or for any other purpose under this Lease Agreement, and if such default continues for fifteen (15) Business Days after written notice to Project Company by GPA;

(b) the Premises are used for an unlawful purpose;

(c) the Premises are left vacant, unoccupied, or deserted for a period of thirty (30) days or more (unless caused by circumstances beyond the reasonable control of Project Company) and such circumstance continues for thirty (30) days after written notice to Project Company by GPA; and

(d) Project Company defaults in the performance of its material obligations under this Lease Agreement and such default continues for sixty (60) days after written notice to Project Company by GPA.

GPA shall deliver to the Agent a copy of any notice given under this Article 22.

22.2. Remedies. Upon the termination of the ECA due to a Project Company Event of Default pursuant to Article 4.5 of the ECA, GPA may exercise any of the following rights:

(a) immediately reenter and, at GPA's election, remove all persons and property from the Premises, store the personal property in a public warehouse or elsewhere at the cost of, for the account of, and at the risk of Project Company. In the event of any such reentry

by GPA, GPA may make any repairs, additions, or improvements in, to or upon the Premises which may be necessary or convenient;

(b) collect by suit or otherwise each installment of rent or other sum as it becomes due hereunder, or enforce, by suit or otherwise, any other term or provision hereof on the part of Project Company required to be kept or performed, it being specifically agreed that all unpaid installments of rent other sums shall bear interest at the highest legal rate from the due date thereof until paid; or

(c) terminate this Lease Agreement, in which event Project Company agrees to immediately surrender possession of the Premises and any improvements thereon.

22.3. No Waiver of Default. GPA's failure to take advantage of any default or breach of covenant on the part of the Project Company shall not be, or be construed as, a waiver thereof, nor shall any custom or practice which may arise between the Parties in the course of administering this Lease Agreement be construed to waive or to lessen the right of GPA to insist upon the performance by Project Company of any term, covenant, or condition hereof, or to exercise any rights given on account of any such default. A waiver of a particular breach, or default, shall not be deemed to be a waiver of the same or any other subsequent breach or default. The acceptance of rent hereunder shall not be, or be construed to be, a waiver or any term, covenant, or condition of this Lease Agreement.

22.4. Project Company's Waiver of Statute of Limitations. Project Company does further waive the benefit of any statute of limitations to which it might be entitled.

22.5. Remedies Cumulative. The rights, powers, elections, and remedies of GPA contained in this Lease Agreement shall be construed as cumulative and no one of them is or shall be considered exclusive of the other or exclusive of any rights or remedies allowed by law, and the exercise of one or more rights, powers, elections, or remedies shall not impair GPA's right to exercise any other.

ARTICLE 23: GPA EVENT OF DEFAULT

The Project Company may, at its option and without limiting Project Company in the exercise of any other right or remedy it may have on account of a default or breach by GPA, exercise the rights and remedies specified in Section 4.5 of the ECA if GPA defaults in the performance of its material obligations under this Lease Agreement and such default continues for sixty (60) days after written notice to GPA by Project Company ("**GPA Event of Default**").

ARTICLE 24: TERMINATION OF LEASE AGREEMENT UPON MUTUAL AGREEMENT

This Lease Agreement may be terminated upon the written mutual agreement of GPA and Project Company.

ARTICLE 25: SURRENDER OF PREMISES

Upon the voluntary or other termination of this Lease Agreement or any early termination of the Term from whatever cause, Project Company shall peaceably and quietly surrender and deliver up to GPA the Premises, including all buildings, alterations, rebuilding, replacements, and changes, additions, and improvements, constructed, erected, added, or placed on the Premises by Project Company, with all building service equipment in or appurtenant to the Premises, in as good condition, repair, and as clean as at the commencement of the term, and as any new buildings, structures, replacements, additions, or improvements constructed, erected, added, or placed on the Premises by Project Company were when completed, excepting the existence of the Project Facilities and the Electrical Connection Facilities and taking into account reasonable wear and tear and the intended use of the Premises for electricity generation in accordance with Prudent Utility Practices.

ARTICLE 26: NOTICES

All notices and demands that may be required or permitted by either party to the other will be in writing. All notices and demands shall be sent by telefax or mail, postage prepaid, addressed to:

To: *(Post Office Address)*
GUAM POWER AUTHORITY
General Manager
P.O. Box 2977 Hagatña, Guam 96932

Or

(Physical Address)
GUAM POWER AUTHORITY

General Manager
Gloria B. Nelson Public Service Bldg 688, Route 15-Suite 100
Mangilao, Guam 96913-6203

To: **(*PROJECT COMPANY Address*)**

ARTICLE 27: PARTIES BOUND

The covenants, agreements, terms, provisions and conditions contained in this Lease Agreement shall apply to and bind the successors, executors, administrators, and assigns of the Parties.

ARTICLE 28: RELATIONSHIP OF PARTIES

Nothing contained in this Lease Agreement shall be deemed or construed by the Parties or by any third person to create the relationship of principal and agent or of partnership or of joint venture or of any association between GPA and Project Company.

ARTICLE 29: DISPUTE RESOLUTION

29.1. Disputes. In the event that a dispute arises under this Lease Agreement, the Parties shall attempt in good faith to settle such dispute by mutual discussions within thirty (30) days after the date that the disputing Party gives notice of the dispute to the other Party which may include referring the dispute to the Joint Coordinating Committee pursuant to the ECA for a specified time period, subject to mutual agreement of the Parties.

In the event that the Parties do not reach agreement on the dispute within forty-five (45) days after the date that either Party gives notice of the dispute pursuant to the preceding paragraph, or such longer period as they may agree in writing, then either Party may commence resolution of the dispute in accordance with Article 29.3 or, subject to mutual agreement of the Parties in writing, submit the dispute to mediation pursuant to Article 29.2.

29.2. Mediation

(a) In the event that the Parties mutually agree pursuant to pursuant to Article 29.1 to submit a dispute to mediation, then such dispute shall be submitted to mediation in accordance with the rules of the American Arbitration Association, subject to the conditions and limitations of this paragraph. This agreement to mediate is authorized under 5 GCA §5427 (b) and 2 GAR §9103 (a)(1). The Parties shall each pay one-half of the mediation expenses.

(b) In the event the dispute is not resolved through mediation within ninety (90) days from the date on which either party gave notice of the dispute pursuant to Article 29.1, either Party may commence resolution of the dispute in accordance with Article 29.3.

(c) Any mediation shall be conducted in English.

(d) The place of mediation shall be Guam.

29.3. Arbitration

(a) Any Dispute arising out of or in connection with this Agreement and not resolved following the procedures described in Article 29.1 and Article 29.2 shall be finally settled by arbitration under the Rules of Arbitration of the American Arbitration Association ("**AAA Rules**").

(b) Any arbitration shall be conducted in English, and unless otherwise agreed by the Parties, the number of arbitrators shall be three (3). The arbitrators shall be appointed in accordance with the AAA Rules

(c) The place of arbitration shall be Los Angeles, CA, USA.

(d) The arbitration tribunal may consolidate an arbitration arising out of or relating to this Agreement with any arbitration arising out of or relating to the ECA if the subject matter of the disputes arises out of or relates to essentially the same facts or transactions. Such consolidated arbitration shall be determined by the arbitration tribunal appointed for the arbitration proceeding that was commenced first in time.

29.4. Performance of Obligations. Unless otherwise provided in this Lease Agreement, during the conduct of Dispute resolution the Parties shall continue to perform their respective obligations under this Lease Agreement.

29.5. Consent to Jurisdiction. Each Party hereby consents to the jurisdiction of the District Courts of Guam for any action filed by the other Party pursuant to this Lease Agreement.

29.6. Waiver of Jury Trial. Each Party waives any right to trial by jury of any claim or action under or in connection with this Agreement, regardless of the legal theory. This waiver of right to trial by jury is given knowingly and voluntarily by each Party hereto.

ARTICLE 30: GOVERNING LAW

This Lease Agreement will be governed by and construed in accordance with the laws of the Territory Guam and the applicable laws of the United States of America.

ARTICLE 31: NO WAIVER

The failure of either party to this Lease Agreement to insist on the performance of any of its terms and conditions, or the waiver of any breach of any of the terms and conditions of this Lease Agreement, shall not be construed as thereafter waiving any such terms and conditions, but they shall continue and remain in full force and effect as if no such forbearance or waiver had occurred.

ARTICLE 32: ATTORNEYS' FEE

If either party commences an action against the other in connection with this Lease Agreement, the prevailing party will be entitled to recover costs of suit and reasonable attorneys' fees.

ARTICLE 33: EFFECT OF PARTIAL INVALIDITY

The invalidity of any part of this Lease Agreement will not and shall not be deemed to affect the validity of any other part. In the event that any provision of this Lease Agreement is held to be invalid, the Parties agree that the remaining provisions shall be deemed to be in full force and effect as if they had been executed by both Parties subsequent to the expungement of the invalid provision.

ARTICLE 34: ENTIRE AGREEMENT

This Lease Agreement, the ECA, the Lenders Direct Agreement [insert other agreements as applicable] set forth all the agreements between GPA and Project Company concerning the Premises, and there are no agreements, either oral or written, other than as set forth in the aforementioned agreements.

ARTICLE 35: MODIFICATION OF LEASE AGREEMENT

Any modification of this Lease Agreement or additional obligation assumed by either party in connection with this Lease Agreement shall be binding only if evidenced by a document in writing signed by each party or an authorized representative of each party.

ARTICLE 36: COUNTERPARTS

This Lease Agreement may be executed in any number of counterparts, each which shall be deemed to be an original, but all of which together shall constitute but one and the same instrument.

ARTICLE 37: FURTHER ASSURANCES

The Parties agree to execute whatever papers and documents and assurances may be necessary to effectuate the terms of this Lease Agreement and take such further action required by law or as GPA or Project Company may from time to time reasonably request in order to carry out more effectively the intent and purpose of this Lease Agreement and to establish and protect the rights and remedies created in favor of GPA or Project Company.

ARTICLE 38: PARAGRAPH HEADINGS

The titles to the paragraphs of this Lease Agreement are solely for the convenience of the Parties and shall not be used to explain, modify, simply, or aid in the interpretation of the provisions of this Lease Agreement.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the Parties hereto have caused this Lease Agreement to be executed on the dates provided below to be effective as of the day and year first above written.

WITNESS:

By: **D. GRAHAM BOTHA**
GPA LEGAL COUNSEL
GUAM POWER AUTHORITY

Date: _____

GUAM POWER AUTHORITY

By: **JOHN M. BENAVENTE, P.E.**
GENERAL MANAGER
GUAM POWER AUTHORITY

Date: _____

APPROVED BY THE CONSOLIDATED COMMISSION ON UTILITIES:

By: _____
JOSEPH T. DUENAS
CHAIRMAN

CONSOLIDATED COMMISSION ON UTILITIES

Date: _____

WITNESS:

By: _____
WITNESS NAME
Title
Division
Company

Date: _____

Project Company

By: _____
LESSEE SIGNATORY
Title
Division
Company

Date: _____

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Dos Amantes Planning Area

Draft: 27/08/2019

DRAFT

THE GUAM POWER AUTHORITY

[PROJECT COMPANY]

and

[SECURITY AGENT]

ECA/LLA DIRECT AGREEMENT:
180 MW OF NEW GENERATION CAPACITY PROJECT

[This document is subject to the Lenders' review and comments]

Draft: 27/08/2019

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Draft: 27/08/2019
THIS DIRECT AGREEMENT is made on [……]

BETWEEN:

(I) **THE GUAM POWER AUTHORITY** (the ***Buyer);***

(2) **[PROJECT COMPANY],** a company organized and existing under the laws of Guam (the ***Borrower); and***

(3) **[SECURITY AGENT]** (in its capacity as the Security Agent under the Financing Documents) (the ***Security Agent).***

each, a *Party*.

WHEREAS:

(A) the Borrower and the Buyer have entered into (i) an Energy Conversion Agreement dated [……] for the sale and purchase of electric power capacity and output generated by the Facility (the ***Energy Conversion Agreement***) and (ii) a Lease Agreement dated [……] providing the Borrower with a site on which to build, operate, and maintain the Facility (the ***Lease Agreement*** and, together with the Energy Conversion Agreement, the ***Assigned Agreements);***

(B) the Lenders have agreed to make certain financing available to the Project; and

(C) it is a condition precedent to the financing of the Project by the Lenders that the Buyer enter into a direct agreement with the Security Agent,

IT IS HEREBY AGREED as follows:

1 INTERPRETATION

(a) Capitalized terms not otherwise defined herein shall have the meaning given to them in the Energy Conversion Agreement.

(b) In this Agreement:

Additional Obligor means any of (a) the Security Agent; (b) any liquidator, receiver or similar official appointed under the security documents; (c) a company Controlled by any of the Lenders and authorized to do business in Guam; or (d) an Eligible Person that assumes the Borrower's rights under the Assigned Agreements and undertakes to discharge the Assumed Liabilities pursuant to Clause 7(a) provided that the Borrower shall not be an Additional Obligor;

Affiliate means, in respect of a person, any person which Controls (directly or indirectly) that person and any other person Controlled (directly or indirectly) by such first mentioned person, including, where a person is a company, the ultimate holding company of such person and any holding company of such person and any subsidiary (direct or indirect) of such holding company;

Agreement means this Direct Agreement, including the preamble and all schedules hereto;

Assigned Agreements has the meaning given to it in Recital (A);

Assumed Liabilities means, in relation to the Assigned Agreements, the aggregate of:

(i) the Relevant Liabilities; and

(ii) those liabilities and obligations of the Borrower under the Assigned Agreements which arise between the Step-In Date and the Step-Out Date;

Borrower has the meaning given to it in the Preamble;

Business Day means any day (including partial days) on which banks are authorized or required by law to be open for business in Frankfurt, Guam, Tokyo, London, New York, Seoul and Washington D.C.;

Buyer has the meaning given to it in the Preamble;

Controls means, in respect of a person by another, that other (whether alone or with others and whether directly or indirectly and whether by the ownership of share capital, the possession of voting power, contract or otherwise):

(i) has the power to appoint and/or remove all or the majority of the members of the board of directors or other governing body of that person or of any other person which controls that person;

(ii) controls or has the power to control the affairs and policies of that person or of any other person which controls that person;

(iii) is the parent undertaking of that person or of any other person which controls that person; or

(iv) possesses or is, or will at a future date be, entitled to acquire:

(A) fifty-one per cent (51%) or more of the share capital or issued share capital of, or of the voting power in, that person or any other person which controls that person; or

(B) such part of the issued share capital of that person or any other person which controls that person as would, if the whole of the income of such person were in fact distributed, entitle him to receive fifty-one per cent (51%) or more of the amount so distributed; or

(C) such rights as would, in the event of the result of that person or any other person which controls that person or in any other circumstances, entitle him to receive fifty-one per cent (51%) or more of the assets of such person which would then be available for distribution, and, for those purposes, there shall be attributed to any person the rights or powers of any nominee of his and the rights and powers of any one or more persons which he, or he and associates of his, controls and of any one or more associates of his, and ***Control*** and ***Controlled*** shall be construed accordingly.

Dispute means any dispute or disagreement of any kind whatsoever between Buyer and Borrower in connection with or arising out of this Agreement or either Assigned Agreement;

Eligible Person means any person to whom the Buyer has consented, provided that the only criteria which the Buyer will be entitled to use in deciding whether to withhold consent are that persons (A) legal capacity; (B) financial standing and resources shall in no event be less than that of Borrower, or in the event of any guarantee being offered in support, the financial standing and resources of any guarantor to perform the Borrower's obligations under the Assigned Agreements, and (C) technical qualification and experience to perform the Borrower's obligations under the Assigned Agreements;

Event of Default shall have the meaning given to it in the LLA and ECA;

Event of Default Notice means a notice from the Security Agent to the Buyer certifying that an Event of Default has occurred (such certification to be treated (as between the Security Agent and the Buyer) as conclusive evidence of the occurrence of an Event of Default);

Financing Documents means the common terms agreement, the loan agreements and all other related agreements dated on or about the date of this Agreement between, amongst others, the Borrower, the Security Agent and the Lenders in relation to the financing of the Project or any loan agreements, notes, bonds, hedging agreements and other documents relating to the financing (including refinancing) of the Project;

Guam means the unincorporated and organized territory of the United States of America known as Guam;

Lenders means the banks and other financial institutions that are parties to the Financing Documents from time to time and 'Lender' means any one of them;

Novation Notice means a notice given by the Security Agent to the Buyer under Clause 10(b);

Energy Conversion Agreement has the meaning given to it in Recital (A);

Pre-Novation Liabilities means, in relation to the Assigned Agreements, each of the liabilities and obligations of the Borrower notified to the Security Agent in accordance with Clause 10(d);

Pre-Novation Payment Obligations means, in relation to the Energy Conversion Agreement, the amounts due and payable by the Borrower to the Buyer under the Energy Conversion Agreement notified to the Security Agent in accordance with Clauses l0(d)(i) and 10(d)(ii);

Protected Assets has the meaning given to it in Clause 19;

Relevant Liabilities means each of the liabilities and obligations of the Borrower notified to the Security Agent in accordance with Clause 6 (*Relevant Liabilities*);

Security Agent has the meaning given to it in the Preamble;

Step-In Date means the date on which the Security Agent takes any action under Clause 7(a);

Step-In Notice has the meaning given to it in Clause 7(b);

Step-In Period means the period from the Step-In Date up to and including the earlier of

(i) the corresponding Step-Out Date;

(ii) the date of any transfer under Clause 10 *(Novation);* and

the date of termination of the Energy Conversion Agreement by the Buyer in accordance with this Agreement and the Energy Conversion Agreement;

Step-Out Date means the date of release and cancellation under Clause 9 (*Step-Out*);

Substitute means an Eligible Person who will take novation of the Assigned Agreements, as notified by the Security Agent pursuant to Clause I 0(a);

Suspension Period has the meaning given to it in Clause 5(b);

Termination Action has the meaning given to it in Clause 5(b); and

Termination Notice has the meaning given to it in Clause 5(b).

(c) Unless the context of this Agreement otherwise requires:

(i) the headings of Clauses to this Agreement are for convenience only and shall be ignored in construing this Agreement;

(ii) the singular includes the plural and vice versa;

(iii) words of any gender include each other gender;

(iv) references to Clauses and Schedules are references to Clauses and Schedules of this Agreement;

(v) all periods of time and dates shall be based on, and computed according to, the Gregorian calendar;

(vi) "person" includes a corporation or other legal entity; and

(vii) the terms "hereof", "herein", "hereunder" and similar words refer to this entire Agreement and not to any particular Clause, Appendix or any other subdivision of this Agreement.

2 CONSENT

(a) The Borrower hereby gives notice of, and the Buyer hereby acknowledges notice of, and consents to, the assignment by way of security of the Borrower's rights under the Assigned Agreements in favor of the Security Agent acting on behalf of each of the

Lenders, as principals, under the Financing Documents.

(b) The Buyer confirms that it has not received notice of any other assignment of the Borrower's rights under the Assigned Agreements.

(c) The Buyer agrees that, unless and until it receives notice to the contrary from the Security Agent, and notwithstanding any request or direction from the Borrower to the contrary, all amounts payable to the Borrower under or in connection with the Assigned Agreements will be paid in to the relevant Borrower's bank account which is notified by the Security Agent to the Buyer from time to time. Payments by the Buyer shall be free and clear of, and without any deduction for or on account of, any set-off or any counterclaim save only where the right of set-off or counterclaim is made pursuant to the terms of the Energy Conversion Agreement or (as the case may be) the Lease Agreement.

(d) The Buyer acknowledges and agrees that, in addition to an assignment by way of security of the Borrower's rights under the Assigned Agreements, the Financing Documents shall provide for the creation of security over the other interests and assets of the Borrower in the Project in favor of the Lenders, including assignments by way of security over the Project Agreements and a pledge of shares in the Borrower.

(e) The Buyer undertakes to observe and perform the obligations expressed to be assumed by it in the Assigned Agreements in accordance with the terms thereof.

(f) The Buyer undertakes, after the giving of an Event of Default Notice, to accept as valid any notices or demands given or made by the Security Agent under or pursuant to the Assigned Agreements in place of the Borrower.

(g) After the giving of an Event of Default Notice, the Buyer undertakes to accept in accordance with the terms of this Agreement performance of any of the obligations of the Borrower under the Assigned Agreements, which is procured by or on behalf of the Security Agent as performance by the Borrower.

(h) The Buyer undertakes not to seek to claim that any Notice of Intent to Terminate given or other action taken by the Borrower or the Security Agent under a Project Agreement is invalid merely by virtue of the insolvency or bankruptcy of the Borrower.

(i) The Buyer agrees and accepts that, subject to the terms of this Agreement, none of the Security Agent or the Lenders shall have any obligations under the Project Agreements.

(j) The Buyer hereby consents pursuant to Article 23.11 of the Energy Conversion Agreement and Article [10] of the Lease Agreement to the assignment by way of security of all of the Borrower's rights, title and interest in such agreements in favor of the Security Agent acting on behalf of each of the Lenders, as principals, under the Financing Documents.

(k) Nothing in this Agreement or the arrangements contemplated thereby shall (i) increase the liabilities of the Buyer under the Assigned Agreements or, (ii) except to the extent expressly provided herein, affect the rights of the Buyer under the Assigned Agreements.

3 ACKNOWLEDGMENT OF UNDERTAKINGS OF THE BORROWER

The Buyer acknowledges that the Borrower has agreed, pursuant to the Financing Documents, that the Borrower shall not, without the prior consent of the Security Agent, agree to:

(a) any material amendment to; or

(b) the termination, cancellation, replacement or abandonment of,

either Assigned Agreement. In furtherance of the foregoing, the Buyer shall not agree to any material amendment, termination or cancellation of either Assigned Agreement proposed by the Borrower unless the Security Agent shall have notified the Buyer of the Security Agent's prior written consent to such amendment, termination or cancellation.

4 CONFIDENTIALITY

4.1 Each Party shall treat as confidential and shall not, without obtaining the prior written approval of the other Parties, disclose to any person the provisions of this Agreement or any information supplied or made available for examination or otherwise disclosed hereunder to such Party by any other Party.

4.2 Notwithstanding the provisions of Clause 4.1, information may be disclosed without the other Parties consent:

(a) by a Party to its directors, officers, employees, agents and technical and professional advisors and any Affiliate of such Party who reasonably require such information in the course of their duties and responsibilities in relation to this Agreement;

(b) to the extent required by law or by any applicable governmental or other regulatory authority or by policies affecting public institutions;

(c) for the purposes of dispute resolution or the enforcement of rights and obligations under this Agreement;

(d) to the extent such information has become generally available to the public other than as a result of a breach by the disclosing Party of its obligations under this Clause 4 or under the Assigned Agreements;

(e) by the Security Agent or a Lender to any person with whom it is proposing to enter, or has entered into, any kind of transfer or participation in relation to the financing of the Project as contemplated in the Financing Documents; and

(f) to any proposed Additional Obligor or Substitute,

in each such case, provided that, other than in regard to paragraphs (b), (c) and (d) above, the person to whom such disclosure is made agrees to keep the information confidential and restrict its use in terms of this Clause 4.

4.3 Any information disclosed in accordance with this Clause 4 shall only be used for a purpose or purposes incidental to or arising out of this Agreement, and not for any other purpose.

Draft: 27/08/2019

5 NO ACTION WITHOUT NOTICE

(a) The Buyer shall notify the Security Agent of a default by the Borrower under either of the Assigned Agreements where such default entitles the Buyer to terminate or exercise any other remedy under either Assigned Agreement.

(b) The Buyer undertakes that it will not, without the prior consent of the Security Agent, terminate, cancel, suspend performance or treat as repudiated either Assigned Agreement or take any action to instigate a liquidation, receivership or administration of the Borrower or exercise any other remedy under either Assigned Agreement (each a ***Termination Action***) without giving to the Security Agent at least [ninety (90)] days' prior notice (and in the case of a failure to achieve Commercial Operation Date by the Required Commercial Operation Date (a ***Delayed COD***), [two hundred and ten (210)] days' prior notice) from the date of the notice given pursuant to Article 5.5 of the Energy Conversion Agreement (a ***Termination Notice***) stating:

(i) the intended date of the Termination Action; and

(ii) the grounds for the Termination Action,

Such [90]-day notice period (or [210-day] notice period in the case of a Delayed COD), together with any such extended period under Clauses (c) and (d) below, is referred to herein as the ***Suspension Period,***

(c) If the Security Agent, any Additional Obligor, any Eligible Person or any Substitute, is prohibited by any court order or bankruptcy or insolvency proceedings from curing the unperformed obligations of the Borrower that are the subject of the Termination Notice or from commencing or prosecuting foreclosure proceedings, such Suspension Period shall be extended by the period of such prohibition.

(d) For any default that cannot by its nature be cured by the payment of money, the Buyer undertakes that it will not, without the prior consent of the Security Agent, take any Termination Action if, and for so long as the Security Agent, any Additional Obligor, any Eligible Person or any Substitute, shall have commenced to remedy the breach or default within [60] days (or [180] days in the case of a Delayed COD) of the Termination Notice and is using all [reasonable endeavours] (including implementation of any remedial program) to remedy such breach or default so long as such breach or default is cured within a period of [120] days (or [360] days in the case of a Delayed COD) from the date of the Termination Notice.

(e) Unless the Security Agent gives to the Buyer the Security Agent's consent to a Termination Action in respect of which a Termination Notice has been given pursuant to Clause 5(b), the Security Agent shall be deemed to have not consented to such Termination Action and the Suspension Period shall continue until its expiry.

(f) During a Suspension Period, the right of the Buyer under either of the Assigned Agreements to take any Termination Action shall be suspended and the Buyer shall comply with the terms and conditions set forth in the Assigned Agreements.

6 RELEVANT LIABILITIES

(a) The Buyer shall, within twenty-one (21) days after the date of any Termination Notice or the

date of receipt of any Event of Default Notice, submit to the Security Agent a statement in conformity with the requirements of Clause 10(d) and, subject to Clause 6(b), only such liabilities and obligations as referenced in Clause 10(d) shall be considered Relevant Liabilities.

(b) No Additional Obligor or Substitute shall be liable for any additional sum, monetary claim, or breach relating to the period prior to the statement unless specified in the statement.

7 STEP-IN RIGHTS

(a) At any time:

(i) following the giving of an Event of Default Notice; or

(ii) during the Suspension Period,

the Security Agent may procure that an Additional Obligor, jointly and severally with the Borrower:

(A) assumes all of the Borrower's rights under the Assigned Agreements; and

(B) assumes all Assumed Liabilities.

(b) The Security Agent shall give the Buyer at least twelve (12) days' notice (a Step-In Notice) of any proposed step-in under Clause 7(a) provided that the delivery of the notice on any of the final twelve (12) days of the Suspension Period shall delay the termination of the Suspension Period until the expiration of the twelve (12) day notice period, together with details of the identity of the proposed Additional Obligor. The Security Agent shall provide the Buyer with information as necessary to establish that the proposed Additional Obligor is an Eligible Person,

(c) If the Buyer does not consent to a proposed Additional Obligor pursuant to its right under Clause (c) of the definition of Eligible Person:

(i) the Buyer shall notify the Security Agent setting out its reasons;

(ii) any such failure to consent will be without prejudice to the right of the Security Agent to serve a further Step-In Notice or Step-In Notices; and

(iii) the Suspension Period shall be extended by a number of days equal to the number of days from and including the date of the Step-In Notice, up to and including the date on which the Buyer notifies the Security Agent of its reasons in reasonable detail for not consenting to that Additional Obligor.

(d) If the Buyer fails to give notice to the Security Agent of the reasons that it does not consent to an Additional Obligor under Clause 7(c) within sixteen (16) days from the date of receipt by the Buyer of the Step-In Notice, it shall be deemed to have consented to the Additional Obligor on the expiry of that 16 day period.

(e) Following the issuance of a Termination Notice, the Security Agent may provide notification that the grounds for such Termination Notice are cured if those grounds have

been cured, remedied, or otherwise redressed to the reasonable satisfaction of the Buyer within the Suspension Period, after which the Buyer shall not proceed with any Termination Action based on those grounds.

8 STEP-IN PERIOD

(a) Without prejudice to Clause 5 (No Action Without Notice), the Buyer shall not take any Termination Action during the Step-In Period on the grounds:

(i) that the Security Agent has taken any action under Clause 7 (Step-In Rights); or

(ii) specified in the relevant Termination Notice unless the relevant breach of the applicable Assigned Agreement has not been cured or remedied:

(A) [in respect of any outstanding amount due and payable by the Borrower to GPA prior to the Step-In Date];

(B) in respect of any other breach, within the [sixty (60)] days following the Step-In Date,

provided that:

(x) if the Security Agent, any Additional Obligor, any Eligible Person or any Substitute, is prohibited by any court order or bankruptcy or insolvency proceedings from curing the unperformed obligations of the Borrower that are the subject of the Termination Notice, or from commencing or prosecuting foreclosure proceedings, the Buyer undertakes that it will not, without the prior consent of the Security Agent, take any Termination Action during the period of such prohibition; or

(y) for any default that cannot by its nature be cured by the payment of money, the Buyer undertakes that it will not, without the prior consent of the Security Agent, take any Termination Action if, and for so long as the Security Agent, any Additional Obligor, any Eligible Person or any Substitute, shall have commenced to remedy the breach or default within [60] days (or [180] days in the case of a Delayed COD) of the Termination Notice and is using all reasonable endeavors (including implementation of any remedial program) to remedy such breach or default so long as such breach or default is cured within a period of 120-days (or [360] days in the case of a Delayed COD) from the Termination Notice.

(b) During the Step-In Period, the Buyer shall deal in all matters concerning the Assigned Agreements with the Additional Obligor and not the Borrower, provided that any notices shall be sent to both the Borrower and the Additional Obligor.

(c) During any Step-In Period:

(i) any failure by an Additional Obligor to discharge the Assumed Liabilities under the Assigned Agreements shall be deemed to be a failure by the Borrower to discharge such liabilities for the purposes of the Assigned Agreements; and

(ii) any reference in the Assigned Agreements to a "Project Company Event of Default" by the Borrower shall be construed as including any act or omission of, or

circumstance affecting, the Additional Obligor which would have been such a "Project Company Event of Default" had such act, omission or circumstance been done or omitted to be done by, or affected, the Borrower.

9 STEP-OUT

(a) The Security Agent shall give not less than fourteen (14) days' and not more than twenty-eight (28) days' prior notice of the Step-Out Date to the Borrower and the Buyer.
s

(b) Subject to Clauses 9(c) and l0(c)(i), from and after the Step-Out Date, the Additional Obligor shall be released from any obligations to the Buyer under or in connection with the Assigned Agreements and the rights of the Additional Obligor against the Buyer shall be cancelled.

(c) The Borrower shall remain liable for all of its obligations under the Assigned Agreements notwithstanding the occurrence of the Step-Out Date.

10 NOVATION

(a) Subject to Clause 10(e) at any time:

(i) following the giving of an Event of Default Notice and provided that the relevant Event of Default is continuing at such time (as to which notice by the Security Agent that such Event of Default is continuing will be sufficient evidence);

(ii) during any Suspension Period; or

(iii) during any Step-In Period,

the Security Agent may, on not less than twenty-eight (28) days' prior notice to the Buyer, specifying the proposed date of transfer, procure the transfer of the Borrower's and the Additional Obligor's rights, obligations and liabilities under the Assigned Agreements pursuant to Clause 10(b) to a Substitute.

(b) The transfer of the Borrower's and any Additional Obligor's rights, obligations and liabilities under the Assigned Agreements to a Substitute, in accordance with Clause 10(a) of this Agreement, shall be effected by a novation notice substantially in the form set out in Appendix I (a Novation Notice). The Borrower hereby appoints the Security Agent irrevocably and by way of security as its attorney for the purposes of executing the Novation Notice.

(c) Subject to paragraphs (e) and (f) of this Clause 10 (Novation), if a novation and transfer is effected pursuant to Clause 10(b) then, with effect from such novation and transfer:

(i) the Security Agent, any Additional Obligor and the Borrower shall be released from all obligations and liabilities under or in connection with the Assigned Agreements, whether arising before, on or after the date of transfer including, without limitation, any Assumed Liabilities accruing prior to the Step-Out Date that have not been discharged; and

(ii) any right of the Buyer to terminate that may have arisen prior to the date of transfer

under either of the Assigned Agreements or otherwise will be extinguished and of no further effect.

(d) The Buyer shall within twenty-one (21) days after the date of any Novation Notice, submit to the Security Agent a statement of:

(i) all amounts due and payable by the Borrower to the Buyer under the Assigned Agreements which are unpaid as of the date of the statement:

(ii) the nature and (where capable of being quantified) amount of any sum which will become due and payable by the Borrower to the Buyer under the Assigned Agreements during the period from the date of the statement up to the proposed date of transfer specified in the Novation Notice;

(iii) all other existing breaches by the Borrower of the Borrower's obligations under the Assigned Agreements (other than those referred to in paragraph (i) of this Clause 10(d)) as at the date of the statement; and

(iv) all obligations of the Borrower under the Assigned Agreements (other than those referred to in sub-clause (ii) above) which will be required under the terms of the Assigned Agreements to be performed during the period from the date of the statement to the proposed date of transfer specified in the Novation Notice.

(e) The Substitute shall have up to the [sixty] [(60)] days (or [one hundred eighty (180)] days in the case of a Delay in COD) from the date of the agreement effecting the novation pursuant to Clause 10(a), during which period it must remedy all acts of default by the Borrower in respect of Pre-Novation Liabilities remaining unremedied or uncured, provided that:

(i) if the Security Agent, any Additional Obligor, any Eligible Person or any Substitute, is prohibited by any court order or bankruptcy or insolvency proceedings from remedying all acts of default (other than a payment default) by the Borrower in respect of Pre-Novation Liabilities, or from commencing or prosecuting foreclosure proceedings, such [60]-day period shall be extended by the period of such prohibition; or

(ii) for any acts of default (other than a payment default) by the Borrower in respect of Pre-Novation Liabilities that cannot by their nature be cured by the payment of money, and for so long as the Security Agent, any Additional Obligor, any Eligible Person or any Substitute, shall have commenced to remedy the breach or default within [sixty (60)] days from the date of the agreement effecting the novation pursuant to Clause 10(a), such [60]-day period shall be extended for an additional period of [60] days (or [180] days in the case of a Delayed COD) so long as the Security Agent, any Eligible Person or any Substitute is using all [reasonable endeavors] (including implementation of any remedial program) to remedy such breach or default,

failing which the Buyer shall be entitled to take Termination Action in respect of Pre-Novation Liabilities.

11 TRANSFERS BY PARTIES

(a) The Buyer undertakes that it will not assign, transfer, novate or dispose of any of its rights and/or obligations, or any interest therein, under the Assigned Agreements or this Agreement to any person unless:

(i) the Security Agent agrees in writing to such assignment, transfer, novation or disposal; and

(ii) such person accedes to this Agreement in place of the Buyer.

(b) If a successor to the Security Agent is to be appointed (whether as a result of resignation or replacement or otherwise) under the terms of the Financing Documents, the Security Agent shall give to the Buyer at least fourteen (14) days' notice of such appointment taking effect and the new or replacement Security Agent will execute an accession agreement in substantially in the form set out in Appendix 2, agreeing to be bound by the terms of this Agreement.

12 MISCELLANEOUS

(a) The Buyer and the Borrower shall, at the Borrower's expense, take whatever action the Security Agent, an Additional Obligor, an Eligible Person or Substitute taking a transfer in accordance with Clause 10(a), may require for perfecting any transfer or release under Clauses 7 (Step-In Rights), 9 (Step-Out) and 10 (Novation) including, without limitation, the execution of any transfer or assignment and the giving of any notice, order or direction and the making of any registration that, in each case, the Security Agent, Additional Obligor or Eligible Person may request.

(b) This Agreement shall be binding on the parties, their respective successors and any permitted assignee or transferee of all or some of a party's rights and obligations under this Agreement.

(c) This Agreement may be executed in any number of counterparts, and by the different parties on separate counterparts, each of which when executed and delivered shall be an original but all of which together constitute one and the same instrument.

(d) Nothing in this Agreement or the arrangements contemplated hereby shall prejudice the rights of any of the Lenders under the Financing Documents.

(e) [This Agreement shall terminate (without prejudice to any outstanding obligations or liabilities as at the date of termination) on the date upon which the Borrower's obligations and liabilities to the Lenders under the Financing Documents have been finally discharged and the Lenders have no commitment to lend, which such date as of the date of this Agreement is anticipated to be [ ] years after the date of Financial Closing as determined under the Financing Documents.]

(f) This Agreement embodies the entire agreement between the Parties relating to the subject matter hereof and supersedes all prior commitments, agreements, representations, and understandings, whether oral or written, relating to the subject matter hereof; and may not be contradicted or varied by evidence of prior, contemporaneous, or subsequent oral agreements or discussions of the Parties hereto.

13 REPRESENTATIONS AND WARRANTIES

The Buyer makes the following representations and warranties:

(a) it has the right, power and authority to enter into this Agreement and to perform all material obligations hereunder;

(b) the execution, delivery and performance of this Agreement by the Buyer will have been duly authorized by all necessary action of the Buyer;

(c) that (i) each of the Assigned Agreements is in full force and effect and has not been amended or varied as of the date hereof (ii) the Buyer's obligations under the Assigned Agreements and under this Agreement are legal, valid and binding and enforceable in accordance with their terms, and (iii) there are no outstanding breaches or defaults by the Buyer under any Assigned Agreement;

(d) that the rights under the Assigned Agreements are assignable by way of security and that this Agreement constitutes all approvals and consents necessary for such assignments; and

(e) that this Agreement constitutes all approvals and consents necessary for such assignments referred to under Clause 2(j).

14 INDEMNITY

For so long as this Agreement shall remain in effect, the Buyer shall indemnify the Lenders, the Security Agent, any Additional Obligor and any Substitute, and the Lenders' and any Additional Obligor's or Substitute's officers, directors, shareholders and employees in the same manner, and to the same extent it indemnifies the Borrower and the Borrower's officers, directors, shareholders and employees under Article 16 of the Energy Conversion Agreement or Article [ ] of the Lease Agreement.

15 SEVERABILITY

If, at any time, any provision of this Agreement is or becomes illegal, invalid or unenforceable in any respect under the law of any jurisdiction, that will not affect:

(a) the legality, validity or enforceability in that jurisdiction of any other provision of this Agreement; or

(b) the legality, validity or enforceability in other jurisdictions of that or any other provision of this Agreement.

16 NOTICES

16.1 Giving of notices

All notices or other communications under or in connection with this Agreement must be given in writing and, unless otherwise stated may be made by letter or facsimile. Any such notice will be deemed to be given as follows:

(a) if by letter, when delivered personally or on actual receipt;

(b) if by facsimile, when received in legible form.

However, a notice given in accordance with the above but received on a day other than a Business Day or after business hours in the place of receipt will only be deemed to be given on the next Business Day in that place.

16.2 Addresses for notices

(a) The address, and facsimile number of each Party for all notices under or in connection with this Agreement are as set out below:

The Buyer:

Address:
Facsimile #:
For the attention of:

The Borrower:

Address:
Facsimile number:
For the attention of:

The Security Agent:

Address:
Facsimile number:
For the attention of:

or such other address or facsimile number as a Party may notify to the other Parties by not less than seven (7) days' notice.

(b) All notices from or to the Borrower pursuant to this Agreement must at the same time be copied to the Security Agent and all notices from or to the Buyer in relation to this Agreement or either Assigned Agreement must at the same time be copied to the Borrower and the Security Agent.

17 GOVERNING LAW

This Agreement and the rights and obligations hereunder shall be interpreted, construed and governed by the laws of Guam.

18 MEDIATION [Based on agreement on ECA language and mediation language]

19 NOT USED

Draft: 27/08/2019

IN WITNESS WHEREOF this Agreement has been executed and delivered on the date which first appears on the first page hereof and, as agreed by the parties hereto, shall be effective on such date upon the countersignature of the Security Agent.

EXECUTED by the Guam Power Authority

acting by:

In the presence of:

Witness signature:

Name:

Address:

EXECUTED by [PROJECT COMPANY]

acting by:

In the presence of:

Witness signature:

Name:

Address:

EXECUTED by [SECURITY AGENT]

acting by:

In the presence of

Witness signature:

Name:

Address:

Draft: 27/08/2019

20 APPENDIX 1 - FORM OF NOVATION NOTICE

TO: Guam Power Authority

NOVATION NOTICE

Relating to the [Energy Conversion Agreement] [Lease Agreement] between the Guam Power Authority (the ***Buyer)*** and [Project Company] (the ***Borrower),*** dated as of [ ] (the ***[Energy Conversion Agreement] [Lease Agreement]).***

Terms defined in the Direct Agreement dated [……] between the Buyer, the Borrower and the Security Agent (the ***Direct Agreement)*** shall, subject to any contrary indication, have the same meaning herein.

The Security Agent requests that the Buyer accept and procure the transfer to the Substitute of all of the rights, title and interest of and all of the obligations of the Borrower under the [Energy Conversion Agreement] [Lease Agreement] and the Direct Agreement by countersigning and delivering this Novation Notice to the Borrower at its address for the service of notices specified in the Direct Agreement.

This Novation Notice is delivered to the Buyer pursuant to and for the purposes of Clause 10 *(Novation)* of the Direct Agreement so as to take effect in accordance with the terms thereof on the day after delivery of the Novation Notice to the Borrower or on such later date as may be determined in accordance with the terms thereof.

The Substitute warrants that it is has received a copy of the [Energy Conversion Agreement] [Lease Agreement], together with such information as it has required in connection with this transaction and that it has not relied and will not hereafter rely on the Security Agent to check or enquire on its behalf into the legality, validity, effectiveness, adequacy, accuracy or completeness of any such information and further agrees that it has not relied and will not rely on the Security Agent in relation to its entering into this Novation Notice and the [Energy Conversion Agreement] [Lease Agreement].

The Substitute hereby undertakes with the Buyer that it will perform in accordance with the terms thereof all obligations of the Borrower which by the terms of the [Energy Conversion Agreement] [Lease Agreement] and the Direct Agreement will be assumed by it after delivery of this Novation Notice to the Borrower.

The Security Agent makes no representation or warranty and assumes no responsibility with respect to the legality, validity, effectiveness, adequacy or enforceability of the [Energy Conversion Agreement] [Lease Agreement] or any document relating thereto and assumes no responsibility for the performance and observance by any party of any of its obligations under the [Energy Conversion Agreement] [Lease Agreement] or any document relating thereto and any and all such conditions and warranties whether expressed or implied by law or otherwise are

hereby excluded.

The Novation Notice and the rights and obligations of the parties hereunder shall be governed by and construed in accordance with the laws of Guam.

By:

For and on behalf of the Security Agent

Date:

[SUBSTITUTE]

By:

Date:

Draft: 27/08/2019

21 APPENDIX 2 - FORM OF ACCESSION AGREEMENT

THIS AGREEMENT is made and entered into as of [ ] and is supplemental to, and should be read and construed as one document with, the Direct Agreement (the ***Direct Agreement),*** dated [……..] between [ ] and [ ] as the same may from time to time be amended, novated, restated or supplemented.

Words and expressions used in the Direct Agreement have the same meaning when used herein,

Pursuant to Clause 11(b) of the Direct Agreement, due notice having been given to the Buyer by [ ] in its capacity as Security Agent, the undersigned *[name]* of *[address]* (the ***Replacement Security Agent****)* hereby agrees with each other person (including but not limited to the Buyer) who is or may become a party to the Direct Agreement that with effect from the date hereof the Replacement Security Agent will become a party to, and be bound by, and benefit from and be subject to, the Direct Agreement, and that all references to the Security Agent in the Direct Agreement shall be and be intended as a reference to the Replacement Security Agent.

The address for notices to the Replacement Security Agent for the purpose of Clause 16 ***(Notices)*** of the Direct Agreement is:

Address:

Fax No,:

For the attention of [...]

This Agreement shall be governed by and construed in accordance with the laws of Guam,

SIGNED on behalf of the Replacement Security Agent the [ ] day of [ ].

By:

New Combined Cycle Power Plant

MANAGEMENT'S BRIEFING AND RECOMMENDATION

John M. Benavente, P.E.
General Manager

August 22, 2019

Briefing Outline

1. Purpose of New Power Plant
   - USEPA Regulations Non-Compliance
   - Replace Aged Plants
   - Meet Load Growth
   - Integrate More Renewables
2. Procurement Process of New Plant
   - Chronology
   - Final Results
   - Timeline
3. Characteristics of Ukudu New Plant
4. Rate Impact
5. USEPA Consent Decree
6. Summary & Recommendation

Purpose of New Power Plant

Key Purposes of the New Plant

COMPLY WITH USEPA REGULATIONS

- USEPA's RICE-MACT and EGU-MACT regulations became effective in 2013 and 2015 respectively. All base load plants are non-compliant. Penalties accrued to date are in the hundreds of millions.

REPLACE AGED CABRAS STEAM PLANTS

- The Cabras steam plant, commissioned in 1974, is nearing the end of its useful life and is a source of significant USEPA non-compliance penalties.

MEET LOAD GROWTH

- To meet load growth in order to avoid rolling load shedding again. There would be challenges meeting load growth over the next three years but doable. However without new capacity beyond 2022, load shedding would again impact ratepayers.

INCREASE RENEWABLES INTEGRATION

- The existing units are not able to operate well with intermittent renewables. Plant needed in order to achieve higher Renewable Portfolio Standards.

Chronology of Key Events

August 2010	USEPA Promulgated Rule
August 2012	GPA Files for Exemption to Rule
January 2013	USEPA Denies Additional Exemptions from Clean Air Act
April 2013	GPA and Consultants meet with USEPA Region IX
November 2014	GPA, PUC representative and their consultant meet with USEPA Region IX. USEPA issues GPA January 30, 2015 deadline to submit compliance schedule.

OPTION 1	Retire Slow Speed Diesels (SSD)
OPTION 2	Convert SSD to ULSD and Install Catalyst
OPTION 3	Convert to Low Sulfur RFO, Install Scrubbers and Catalyst
OPTION 4	Convert SSD to LNG

Alternatives for Compliance

vetted 2014

The Cabras 1&2 and MEC 8&9 baseload plants are noncompliant and require fuel conversion to Ultra Low Sulfur Diesel to comply with air emission regulations.

These plants require additional investments to address existing and future air and water USEPA regulations.

GPA is facing significant penalties from USEPA if compliance plan is not implemented.

The new plant will be compliant and is more economical compared to conversion for compliance, life extension and operating costs of the Cabras 1&2 units.

	CONVERT EXISTING PLANTS	INVEST IN NEW PLANT	
clean emission investments	$460M	$600M	*fuel-efficient, compliant generators*
additional O&M	$15M		
	$475M	**$600M**	

Potential Penalties Accrued to Date

RICE-MACT and EGU-MACT Non-Compliance

12-Aug-19

	Compliance Date	Days Penalty	$/Day Penalty	Total
EGU MACT				
Cabras 1	16-Apr-15	1578	$37,500	$59,175,000
Cabras 2	16-Apr-15	1578	$37,500	$59,175,000
			Subtotal	**$118,350,000**
RICE MACT				
MEC 8	13-May-13	2280	$37,500	$85,500,000
MEC 9	13-May-13	2280	$37,500	$85,500,000
Cabras 3 (Thru 8/31/15)	13-May-13	838	$37,500	$31,425,000
Cabras 4 (Thru 8/31/15)	13-May-13	838	$37,500	$31,425,000
			Subtotal	**$233,850,000**
			Total Penalties	**$352,200,000**

Resolution 2014-48

October 2014

CCU Passes Resolution 2014-48, authorizing GPA to:

- Petition the PUC to commence procurement of 120 MW of Combined Cycle (CC) capacity at Harmon with the option for an additional 60 MW
- Determine an Acquisition Strategy and a Procurement Strategy including proposed statutory changes, within 120 days
- Continue to increase and integrate renewable energy
- Continue to evaluate and implement Demand Side Management (DSM)
- Evaluate Demand Response options
- Evaluate additional battery storage options
- Evaluate options for retention of emergency units
- Continue to evaluate conversion to LNG

Resolution 2014-48

October 2014

Conclusions supporting CCU Resolution 2014-48:

GPA, CCU and PUC must step up all efforts in order for GPA to be in a position to minimize impacts to ratepayers when fuel oil prices rise again. We have no control on commodity prices, but we have control on how much and what type of fuel we burn to minimize rate impacts.

The dual fired combined cycle units provides GPA fuel firing diversity it needs to provide reliable service while minimizing the impacts of volatile fuel oil pricing.

GPA should investigate how to reduce ULSD premium cost. Historically premium cost has been substantial due to low volume usage. It appears a premium cost of about $3/bbl. is possible when volumes increase to 2M bbl.

When RFO commodity price is below $50/bbl., operating a combined cycle plant on ULSD provides the least cost.

When the RFO commodity price rise above $50/bbl., the LNG options become the least cost. The savings become substantial and in most cases over $1B at an RFO commodity price of $100/bbl., which was what GPA experienced between 2010 to 2014.

Fuel Conversion

Changing fuel from RFO to ULSD and LNG is in the best interest of ratepayers.

	Ultra-Low Sulfur Diesel (USLD)	Liquefied Natural Gas (LNG)
Meets USEPA Requirements	✓	✓
Supply Adequate for Guam Requirements	✓	✓
Transportation to Guam*	✓	✓
Industry Movement**		✓

* Shipment costs dependent on applicability of Jones Act

** Natural gas is dominant fuel choice for US power companies, as coal and other “dirty” fuel sources are abandoned due to changes in USEPA regulations

Proposed Compliance Schedule

January 2015

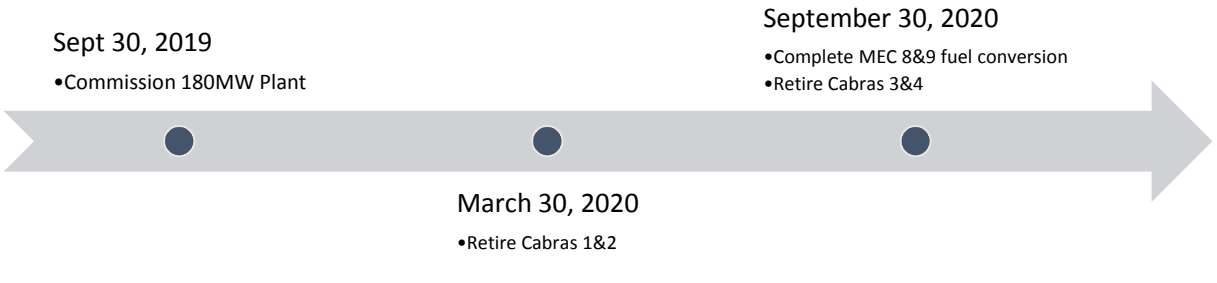
GPA Submits Proposed Compliance Schedule to USEPA:

Construct 180MW of combined cycle units and commission units fired on ULSD and/or LNG no later than September 30, 2019.

Retire Cabras 1&2 Steam Plant six months after the commissioning of the combined cycle plant, but no later than March 30, 2020.

Convert MEC 8&9 units to ULSD and/or LNG within one year after the commissioning of the 180MW combined cycle plant, but no later than September 30, 2020.

Retire the Cabras 3&4 Slow Speed Plant within one year after the commissioning of the 180MW combined Cycle Plant, but no later than September 30, 2020.



Aged Plants

Power Supply Update

Authority Plants would be 24 - 48 years old by 2023

Overview

- GPA has approximately 398 MW of available generation capacity
- Cabras1 & 2 de-rated to 55 MW each
- GPA's peak demand in 2019 was 256 MW
- GPA's primary generating units are 100% fueled by fuel oil, except for 25.3 MW of renewables

Ownership / Operation

- As IPP contracts expired GPA's ownership of power resources has increased
- The Power Purchase Agreement model is being used for renewable resources and the Independent Power Producer model is being used for the new combined cycle project

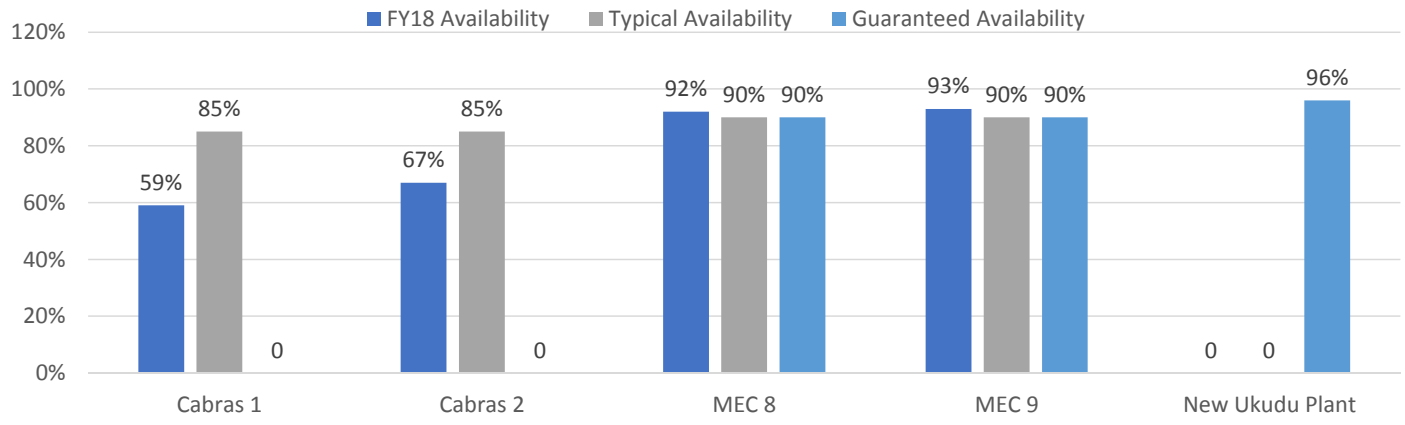
Primary Generating Units

	Unit	Year Installed	Owner	Operator	Capacity Available (MW)
Baseload	Cabras Unit 1	1974	Authority	TEMES/Authority	55.0
	Cabras Unit 2	1975	Authority	TEMES/Authority	55.0
	MEC - Piti Unit 8 [1]	1999	Authority	MEC	44.2
	MEC - Piti Unit 9 [1]	1999	Authority	MEC	44.2
Intermediate	Macheche - CT	1993	Authority	Authority	20.0
	Yigo – CT	1993	Authority	Authority	20.0
	Piti Unit 7	1997	Authority	Authority	40.0
	Dededo CT Plant	1993	Authority	Authority	40.0
	Aggreko [2]	2016	Aggreko	Aggreko	40.0
Peaking	Diesel Units (10 units)	1993	Authority	Authority	40.0
				Subtotal:	**398.4**
Renewable	Dandan Solar Project	2015	GPS Solar	GPS Solar	25.0
	Wind Turbine	2016	Authority	Authority	0.3
				Total:	**423.7**

1. *BOT expired in January 2019; ownership reverted to GPA.*
2. *Current lease expires in 2020; ownership reverts to GPA.*

System Reliability & Plant Life Extension

CABRAS 1 & 2	CABRAS 3 & 4	NEW BASELOAD
Degraded Due to Age >45 years old	79 MW loss (2015 fire)	High Reliability
Plant Life Extension Requires Significant Capital Investment	Negatively Affected System Reliability	Significant Fuel Efficiency
Inadequate Capacity for Future Growth		Savings from Fuel Efficiency will Minimize Impact of Conversion to More Expensive but Clean Fuel
Not Compatible with Renewables Systems		Compatible with Renewable Systems



Meeting Load Growth

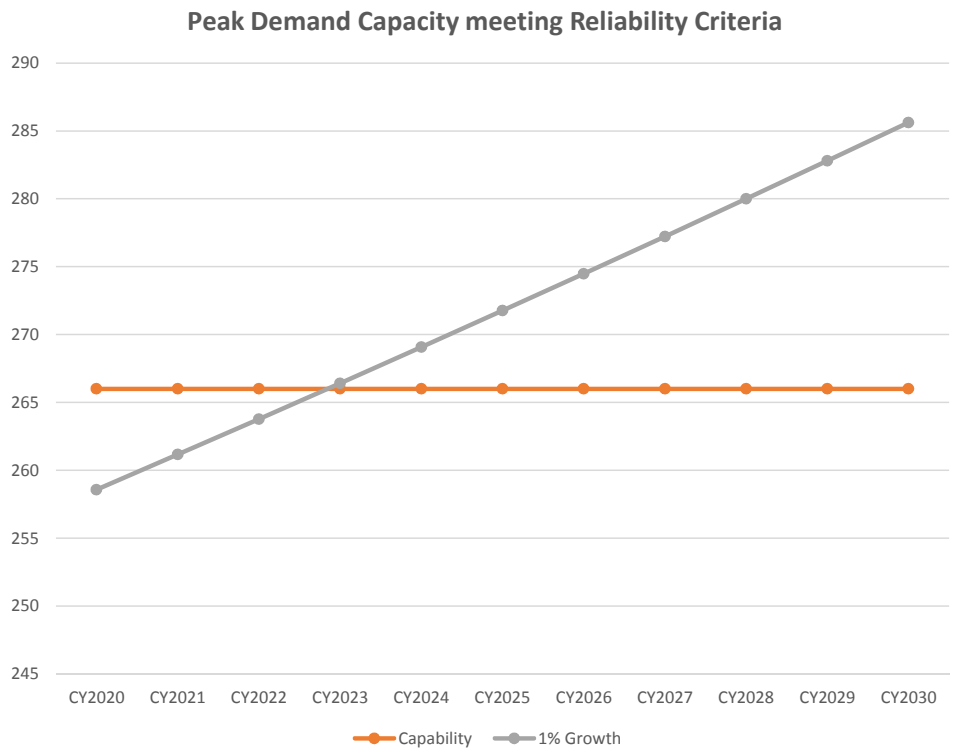
Growth Forecast at Current Capacity

Load Growth Above 1% Overcomes Existing Capacity by 2023

Description	MW
TOTAL FIRM CAPACITY	398

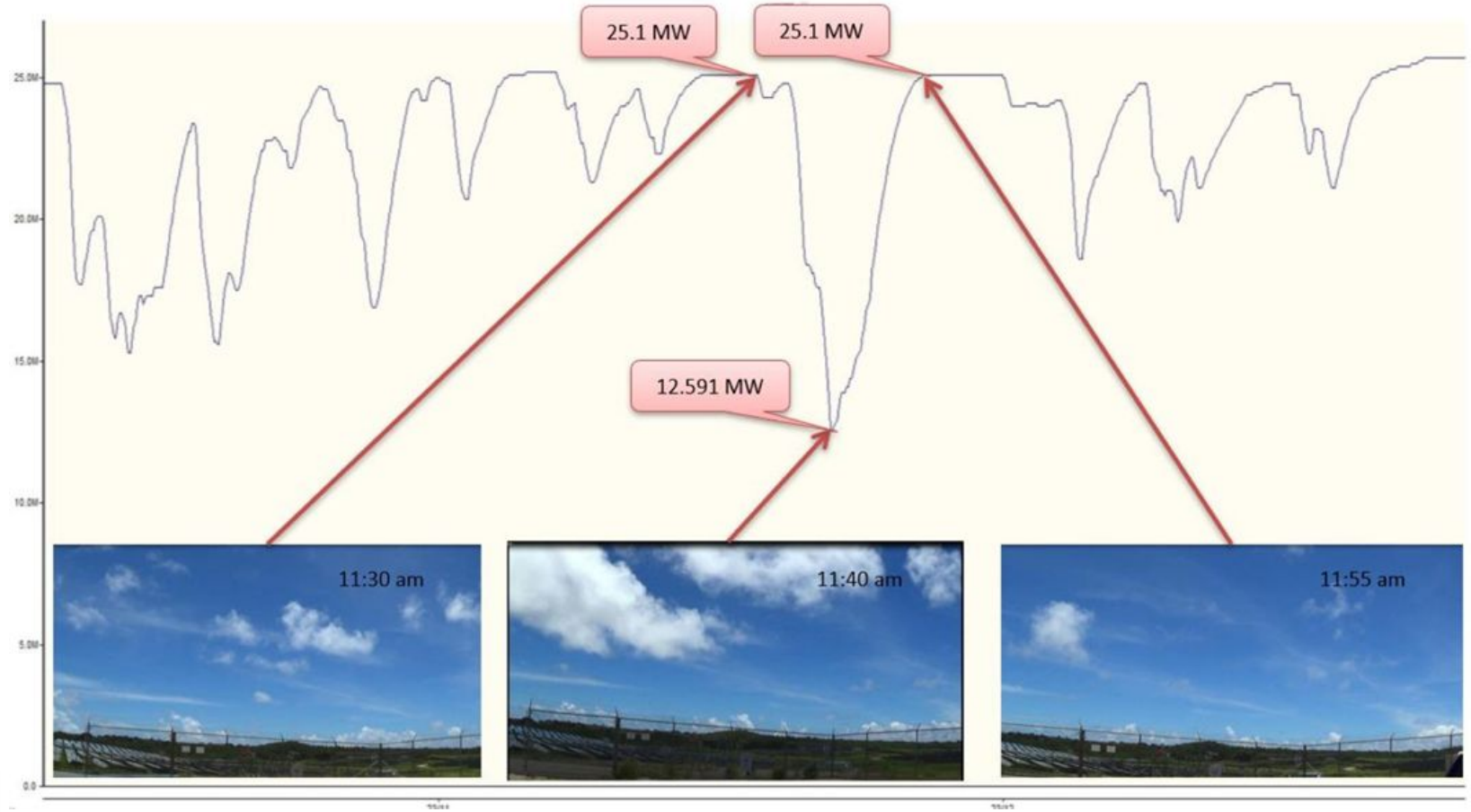
Less Largest Unit	55
Less 2nd Largest Unit	55
Less 50% of 3rd Largest Unit	22
Total Reserve Requirement	**132**

Available Capacity For Peak Demand	**266**
2019 Highest Peak Demand	256
Available Growth Capacity	**10**



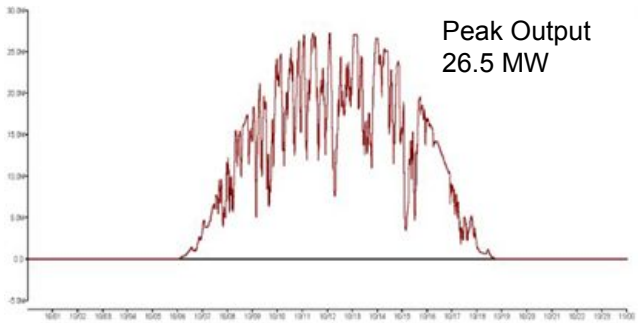
Integrate More Renewables

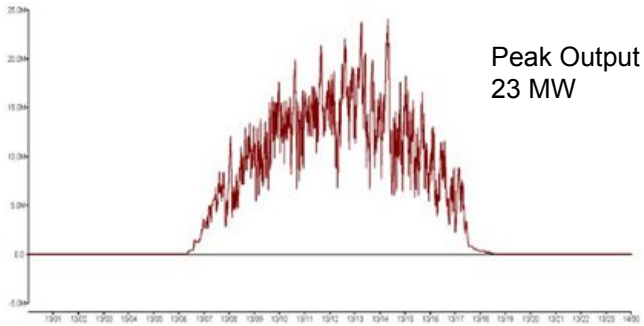
Intermittency of Solar PV Production

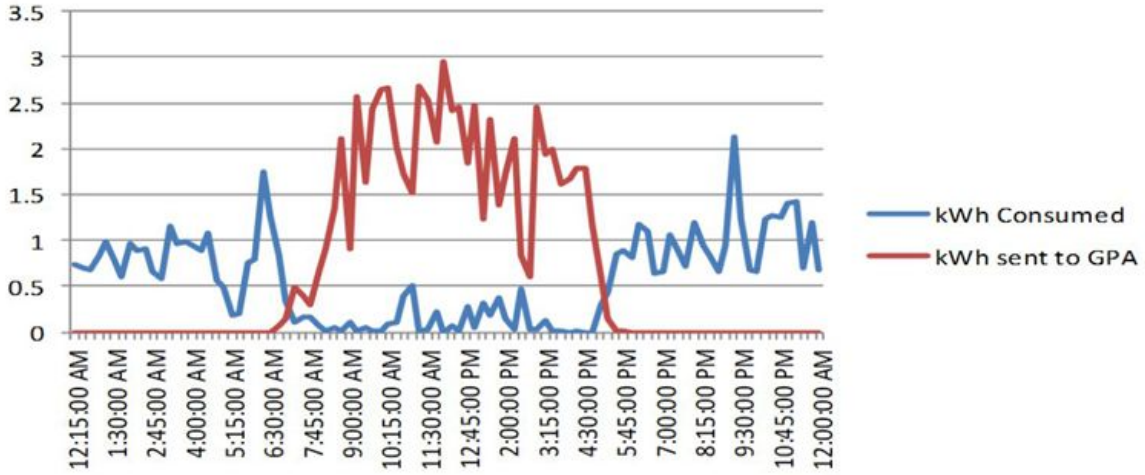


Intermittency of Solar PV Production

Typical PV Output

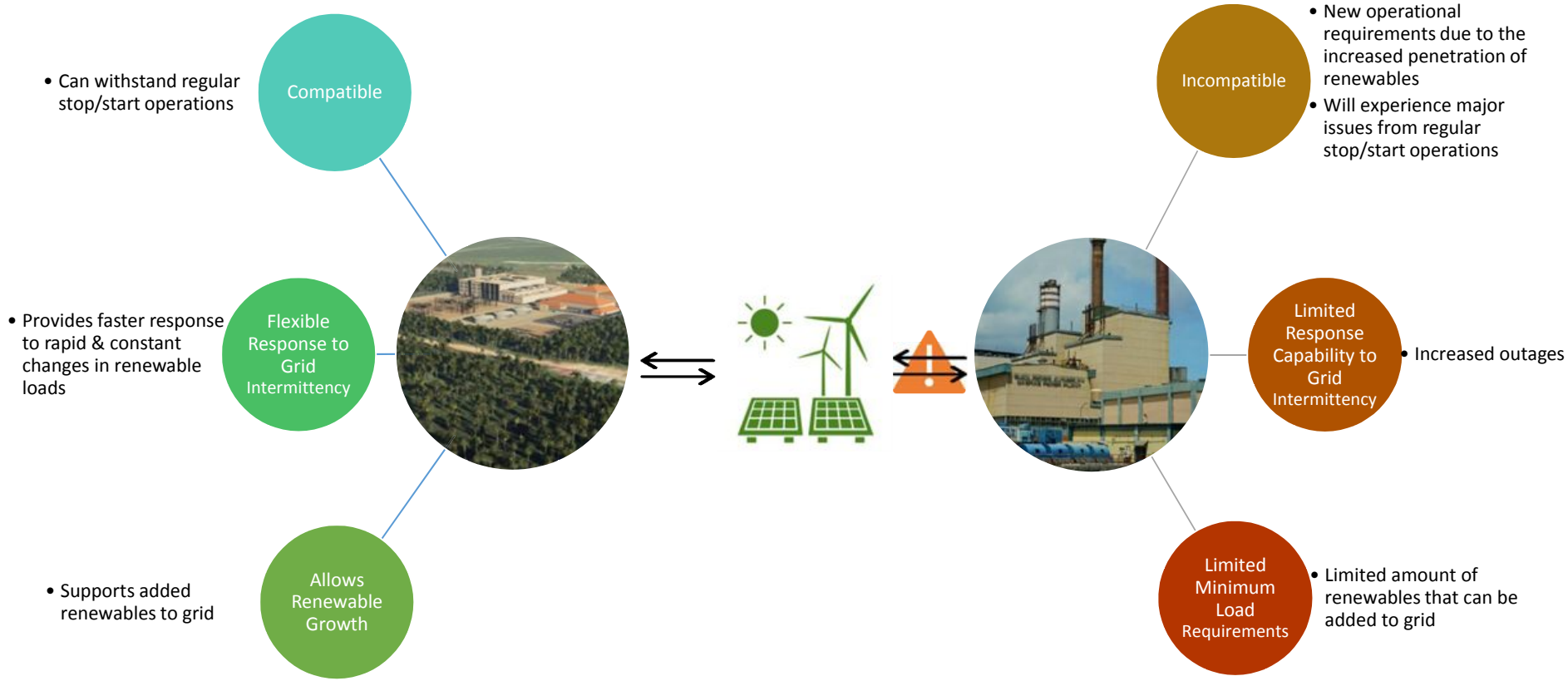






14-Jun-16		
PV System KW Size		24.70
GPA kWh 12am to 7am		22.56
GPA kWh 7am to 6pm		7.44
GPA kWh 6pm to 12am	***Evening Peak***	**24.67**
NEM kWh 7am to 6pm		69.35
Net GPA kWh		-14.68

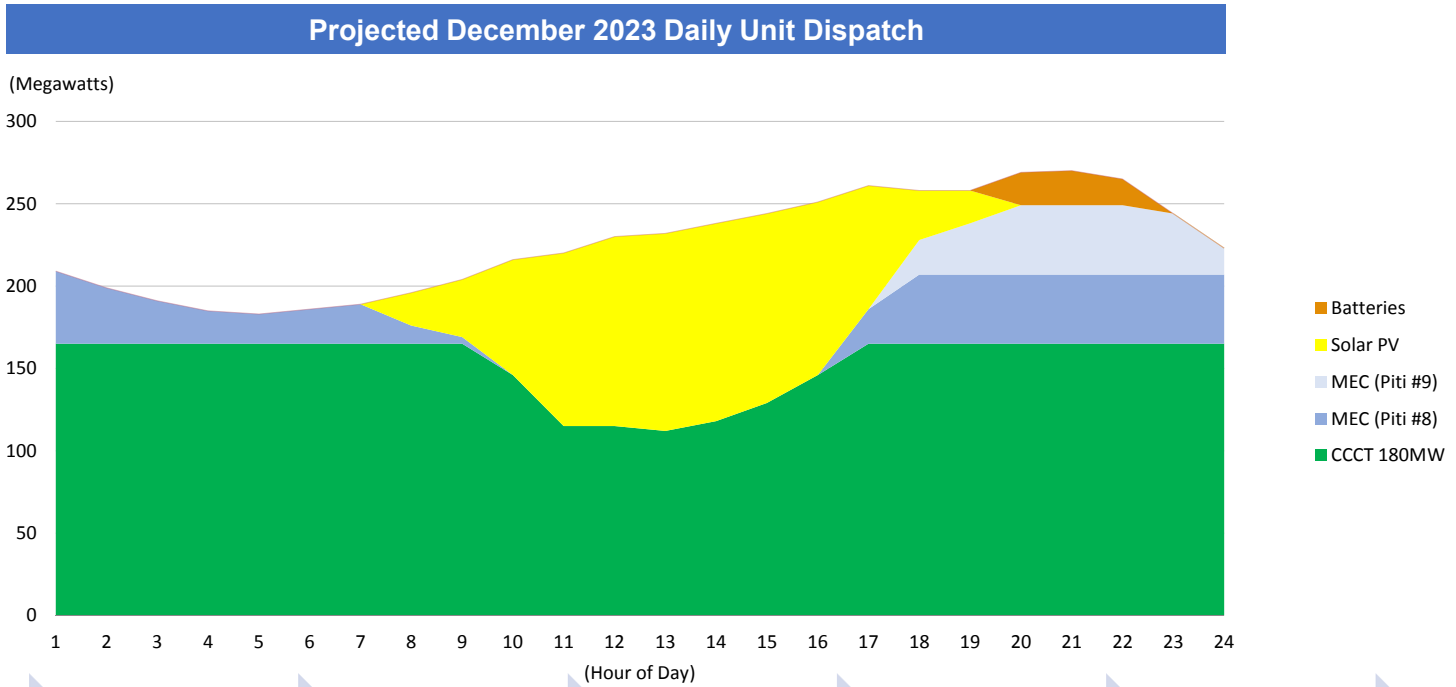
Renewables Integration



Future Energy Supply

New combined cycle units and expanded renewable portfolio will supply over 75% of GPA energy supply

GPA is on track to achieve 25% of energy from renewables in 2022



- 2015: •25 MW •Ph I Solar PV
- 2019: •22 MW •Customer Renewables
- 2019: •40 MW •Battery Storage
- 2022: •120 MW •Ph II Solar PV
- 2022: •180 MW •New CC Plant
- 2023: •40 MW •Ph III Solar PV
- Renewables Integration Study

Procurement Process of New Power Plant

- Chronology
- Final Results
- Project Timeline

Chronology of New Power Plant Approval

December 2008	PUC approves Integrated Resource Plan (IRP), and best strategies for the type, amount and timing of new resource acquisitions to meet future load. Requires GPA to investigate the economics of fuel diversity of liquefied natural gas (LNG) among other conditions
July 2013	GPA files the 2013 IRP to the PUC. IRP to address system reliability, compliance with USEPA new emission regulations, and renewable energy integration.
November 2013	CCU authorizes retirement of Tanguisson Power Plant, implementing new generation units by 2016 and new fuel supply by 2019 (Resolution 2013-50)
October 2014	CCU authorizes GPA to petition PUC for approval of new dual fired combined cycle plant, utility-scale renewables and Demand Side Management (DSM) programs

Chronology of New Power Plant Approval

January 2015	PUC defers approval of new combined cycle plant pending submittal of additional information, but to proceed with other provisions of the IRP, such as renewables and DSM
March 2015	CCU authorizes GPA to petition PUC for consulting services for implementing USEPA compliance plan. Consulting services provides resources for procurement, contracting, construction and commissioning support for combined cycle plant.
August 2015	GPA loses 79 MW of base load capacity due to explosion and fire at Cabras 3&4. GPA's strategy moved from a planning to a procurement approach.
December 2015	PUC orders GPA to update the Integrated Resource Plan in consideration of the Cabras 3&4 loss and capacity shortfall

Chronology of New Power Plant Approval

May 2016	GPA files updated IRP to PUC
	CCU authorizes GPA to petition PUC to acquire 180 MW dual fired combine cycle plant (Resolution 2016-36)
October 2016	PUC authorizes the acquisition of 180 MW combined cycle plant based upon the Independent Power Producer (IPP) model as a Build-Operate-Transfer (BOT) procurement

New Combined Cycle Units

GPA is progressing with its proposed combined cycle units.

Three proponents submitted price proposals on June 3, 2019.

Lowest bidder determined June 10, 2019.

Energy Conversion Agreement (ECA) negotiations completed August 16, 2019.

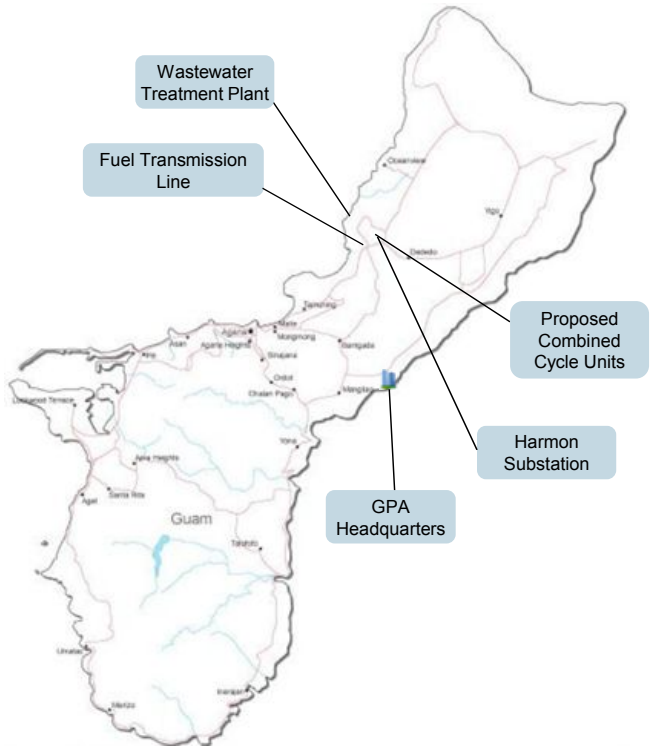
Combined Cycle Project

- Proposed combined cycle generation of 180 MW
- Dual fuel capabilities: ultra-low sulfur diesel (ULSD) and liquefied natural gas
- Site located in close proximity to key transmission line, Harmon substation and GWA wastewater plant
- MEC Units to be converted to ULSD Firing upon commissioning of new plant
- Cabras 1 & 2 to be retired within 3 months after new plant commissioning
- All GPA plants compliant with USEPA Regulations by December 31, 2022

Timing

Milestone	Date
GPUC Order Docket 15-05 filed	Jan 2016
GPUC Order Docket 15-05 approved	Oct 2016
GPA hired Stanley Consultants, Inc. to assist in creation and evaluation of bids	2017
Land acquired	2018
GPUC approved procurement parameters	2018
Bid award	Oct 2019
Construction	2019 - 2022

Location



Site Infrastructure



Impact on System Reliability & Resiliency

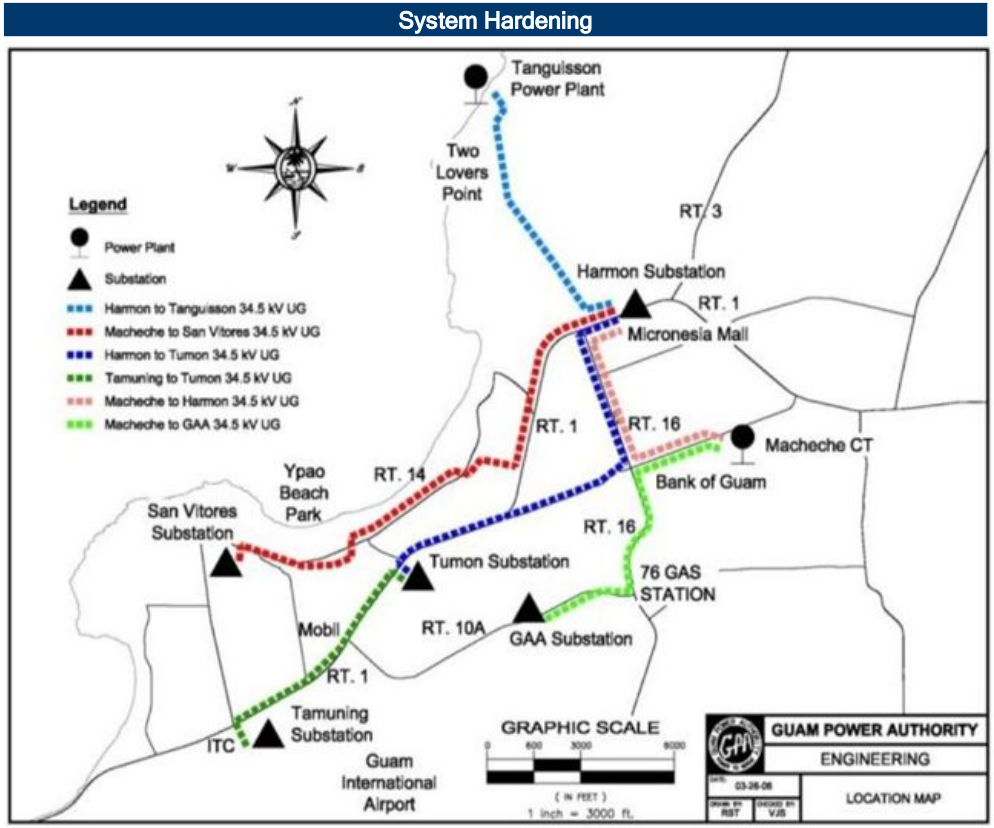
- **Substantially improves system reliability and reduces line losses**
- **Allows for significant loads to be served through storms**

Vital power transmission lines that connect system to key components of Guam's economy including Tumon hotel row, Harmon, Tamuning, Hospital, and the Airport are currently underground

60% of system load is served through these underground transmission infrastructure

GPA continues to harden its overhead system by replacing wood poles with concrete (over 87% hardened to date)

GPA continues its village underground hybrid system which places secondary lines underground (20% completed)

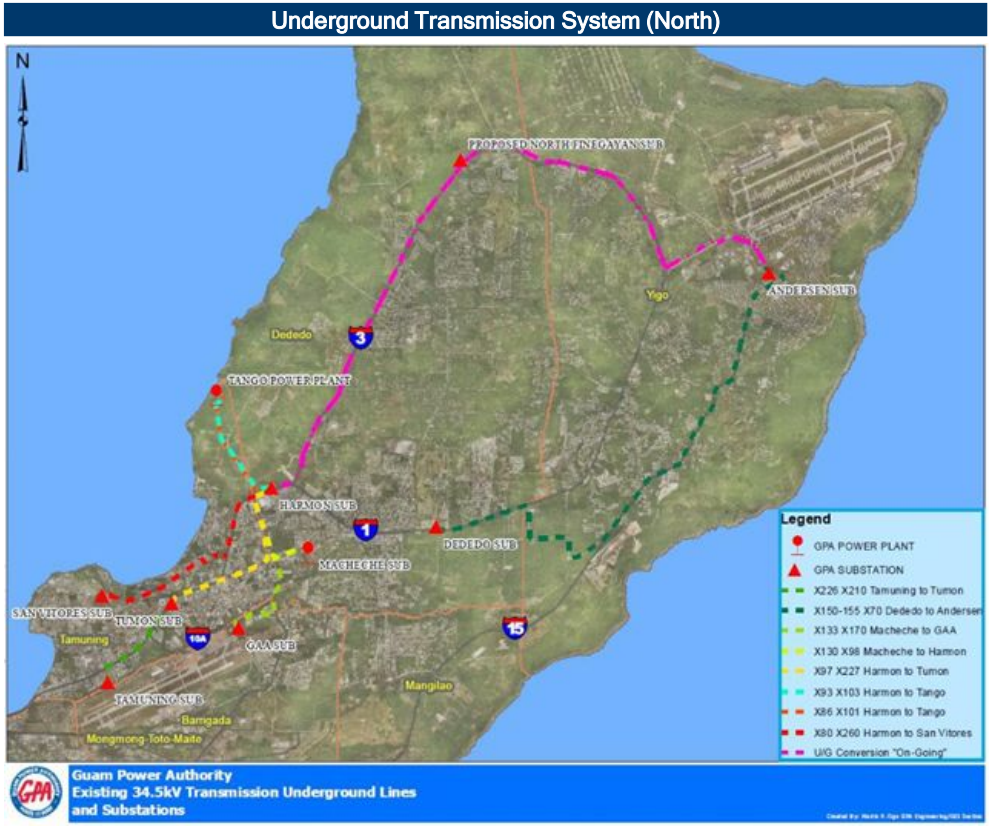


Impact on System Reliability & Resiliency

- **Substantially improves system reliability and reduces line losses**
- **Allows for significant loads to be served through storms**

Andersen Air Force Base and new Marine Base to be served through new underground transmission line under construction by Navy. This line ties in to an existing underground between Anderson Air Force Base and the 40MW Dededo Combustion Turbine Plant.

A future underground transmission line between Dededo Substation and the Harmon Substation will loop the load centers of the north.



Combined Cycle Plant
Bid Characteristics and Results

Multi-Step Invitation For Bid - Key Points

Technology

- Neutral, allowing reciprocating engines and renewable energy proposals

Size

- 180 MW ± 10% : Levelized bids due to variety of Technologies and Unit Sizes

Location

- Near Harmon substation
- Property purchased by GPA and rezoned for power plant construction and operation

Model

- Independent Power Producer (IPP), Build-Operate-Transfer (BOT) for 25 years plus additional 5-year option (30 years total)

Bid Preparation

- Four (4) months bid development time allowed for selected pre-qualified proponents

Technical Proposal Requirements

- ✓ 180 MW ± 10%
- ✓ Dual fuel capable with ULSD initially
- ✓ Fully dispatchable base load
- ✓ Project Company will complete a Grid Study [steady state and dynamics modeling using Positive Sequence Load Flow (PSLF) software]
- ✓ Transient response [5% within 1 second; 10% within 2 seconds. 25 MW per minute regulation]
- ✓ Capable of providing the full Dependable Capacity at any given time regardless of the weather conditions
- ✓ Construction shall comply with Guam wind rating and seismic zone requirements
- ✓ Meet GPA Reliability Standards
- ✓ Project Company will provide environmental permitting
- ✓ Synchronous condenser capability
- ✓ The loss of a single generating unit should not cause loss of capacity of more than 45MW
- ✓ Rights of way for fuel pipeline and 115 KV transmission interconnection from to the Harmon substation provided by GPA
- ✓ Natural gas pipeline (FERC compliant) installed into same right of way as ULSD pipeline and protected while not in use
- ✓ HV transmission line and pipeline transferred to GPA after COD

Technical Proposal Requirements - continued

- ✓ Noise level at the site boundary shall not exceed 3 dB above existing noise level
- ✓ Utilize GWA grey water for makeup – if cooling tower is required
- ✓ Discharge to GWA or Zero Liquid Discharge system
- ✓ Potable water supplied from GWA; sea water makeup not allowed
- ✓ 7-day on-site water storage
- ✓ 30-day on-site fuel storage
- ✓ Transfer facility for loading and unloading fuel delivery trucks (for resiliency)
- ✓ Buffer zone around plant
- ✓ Utilize only part of provided property (~25 acres for plant)
- ✓ Architectural requirements:
  - ✓ *Low-rise buildings unless taller required for equipment enclosure*
  - ✓ *Building designs approved by GPA*
  - ✓ *Style, colors and finishes compatible with Guam's island heritage*
  - ✓ *Exterior colors and finishes blend in with surrounding*

Proponent Proposal Requirements

- ✓ Maximum debt to equity ratio of 80% to 20%
- ✓ Minimum 35% total equity required of lead developer
- ✓ Financing capacity plan
- ✓ Provide separate technical and commercial proposals in two separate envelopes
- ✓ Proposal security required ($3M bid bond)
- ✓ One original and five copies
- ✓ Complete Section D Forms
- ✓ Responsive test Section B, Appendix A

Successful Proponent Requirements

- ✓ Hiring opportunities for GPA employees who may be impacted by impending retirement of Cabras 1&2
- ✓ Construction security of $63.8M at financial closing (released 3 months after COD Section B 7.3 and ECA Section 9.6)
- ✓ Transfer Security of approximately $15M – to replace Operational Security and released 1 year after transfer
- ✓ Liquidated damages
  - ✓ Delay in achieving COD
  - ✓ Failure to meet Contracted Capacity
  - ✓ Excessive outages
- ✓ Reliability test 7 days with 72 hours at maximum dependable capacity
- ✓ Annual dependable capacity test
- ✓ Maintenance and testing prior to transfer in the end of the Term
- ✓ Progress meetings
- ✓ Schedule updates
- ✓ OSHA safety conformance
- ✓ Monthly reports

MS-IFB Responses

TECHNICAL PROPOSALS	
Proposals Received (Qualified Proponents)	Evaluation Criteria
Osaka Gas Co., Ltd. Powerflex LLC (c/o Wartsila Development & Financial Services) Hanwha Energy Corporation Korea Electric Power Corporation	Financial Capacity Experience Qualifications Technical Proposal

MS-IFB Evaluation & Results

COMMERCIAL EVALUATION

Evaluation Key Points

Economic evaluation based on:

- Net Present Value incorporating all costs over the 25-year period
- Fixed Capacity Cost
- Fixed Operation and Maintenance Cost
- Variable Operation and Maintenance Cost
- Fuel Cost

Evaluation Results

Rank based on NPV (high to low)	NPV Cost
Powerflex (Wartsila)	$4,019,294,000
Hanwha Energy	$3,199,004,000
Korea Electric Power	$3,121,230,000

Conclusion

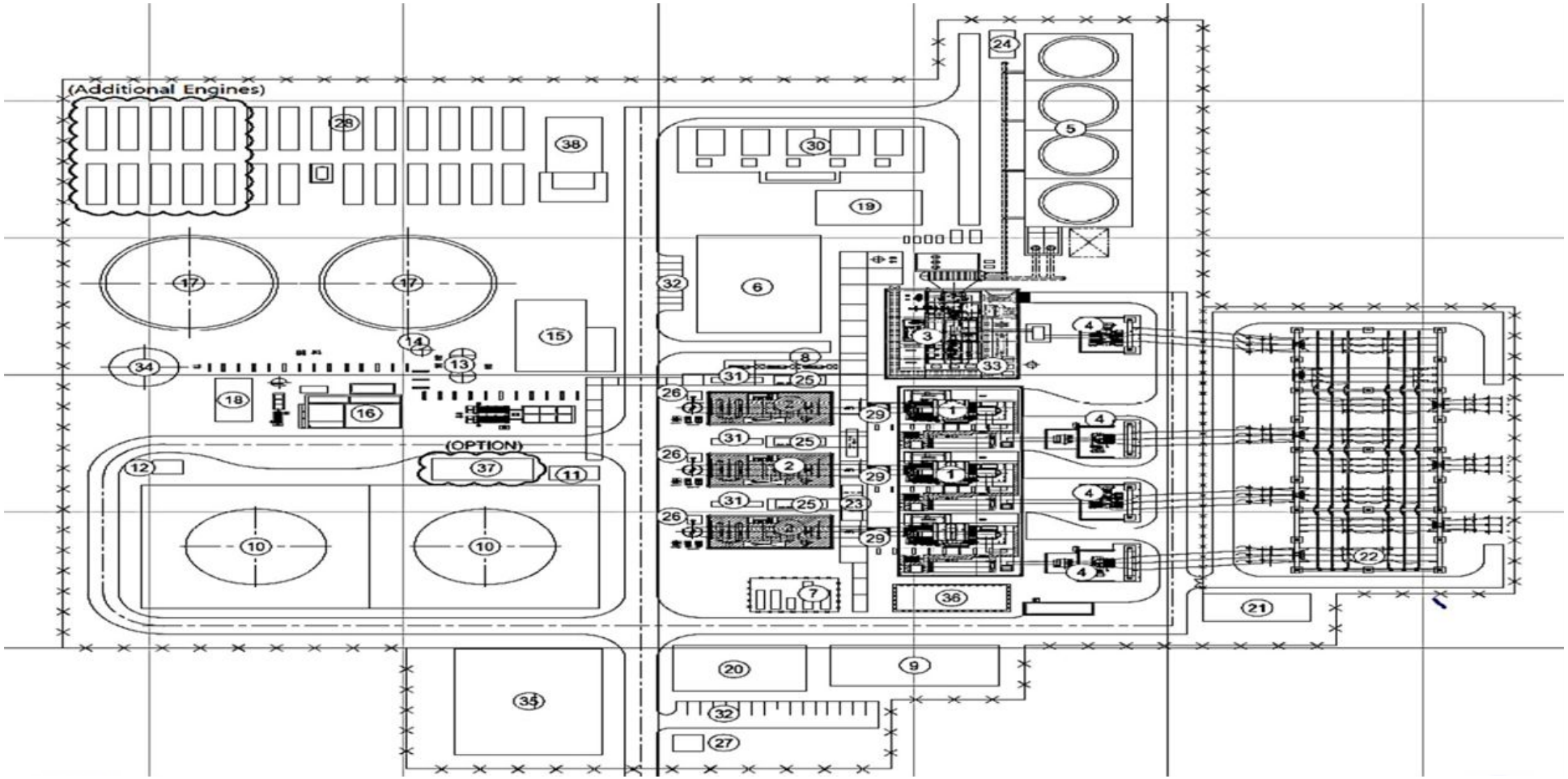
Korea Electric Power Company (KEPCO)

✓ Lowest NPV Cost

KEPCO Key Technical Points

- Combined Cycle Unit
  - Three (3) Siemens ST 800 45 MW combustion turbines with individual Heat Recovery Steam Generator (HRSG) feeding steam to a 63 MW Siemens steam turbine
- 198 MW Total Firm Capacity
- SCR and CO catalyst pollution controls in the HRSGs
- 25 MW Battery Energy Storage System (BESS) to offset single unit loss
- Additional diesel units and CT capacity beyond rating totaling 64 MW to offset the loss of single largest unit
  - Single unit loss will total 66 MW
  - Offset by BESS and diesels
- Combustion Turbine provide quick start
- Regular on/off capability
- 6663 Btu/kWh heat rate on ULSD at 100% load in Combined Cycle makes the plant one of most efficient in the world.

NEW UKUDU POWER PLANT LAYOUT



Rate Impact

Projection Summary – Existing System ($000)

Fiscal Year	Net Energy Sent Out	Production Fuel Costs	Generation Operation and Maintenance Expense	Debt Service Payments	Operating Expense	Total Expense Including DS
2019						
2020	1,756,633	$ 261,786	$ 35,706	$ 47,737	$ 297,492	$ 345,228
2021	1,803,316	$ 281,536	$ 36,492	$ 47,736	$ 318,028	$ 365,764
2022	1,820,163	$ 295,429	$ 37,295	$ 47,824	$ 332,723	$ 380,547
2023	**1,836,945**	**$ 277,972**	**$ 38,115**	**$ 48,004**	**$ 316,087**	**$ 364,091**
2024	1,855,423	$ 279,008	$ 38,954	$ 47,993	$ 317,962	$ 365,954
2025	1,874,814	$ 295,027	$ 39,811	$ 47,997	$ 334,837	$ 382,834
2026	1,876,545	$ 307,234	$ 40,686	$ 47,998	$ 347,920	$ 395,918
2027	1,895,286	$ 324,949	$ 41,581	$ 47,998	$ 366,531	$ 414,529
2028	1,906,812	$ 340,869	$ 42,496	$ 48,004	$ 383,365	$ 431,369
2029	1,923,684	$ 360,187	$ 43,431	$ 48,006	$ 403,619	$ 451,625
2030	1,943,895	$ 379,180	$ 44,387	$ 48,002	$ 423,567	$ 471,568
2031	1,954,166	$ 396,770	$ 45,363	$ 42,242	$ 442,133	$ 484,375
2032	1,944,530	$ 408,413	$ 46,361	$ 42,241	$ 454,774	$ 497,014
2033	1,959,215	$ 429,339	$ 47,381	$ 42,240	$ 476,720	$ 518,960
2034	1,971,878	$ 450,712	$ 48,423	$ 42,242	$ 499,136	$ 541,377
2035	1,987,719	$ 475,315	$ 49,489	$ 16,531	$ 524,804	$ 541,335
2036	1,981,674	$ 491,913	$ 50,578	$ 22,720	$ 542,491	$ 565,211
2037	1,993,164	$ 515,269	$ 51,690	$ 22,729	$ 566,959	$ 589,688
2038	1,997,321	$ 537,519	$ 52,827	$ 22,724	$ 590,346	$ 613,070
2039	2,009,529	$ 573,811	$ 53,990	$ 22,724	$ 627,800	$ 650,524
2040	2,014,527	$ 600,208	$ 55,177	$ 22,723	$ 655,386	$ 678,108
2041	2,053,505	$ 640,254	$ 56,391	$ 5,085	$ 696,645	$ 701,731
2042	2,069,216	$ 670,281	$ 57,632	$ 5,084	$ 727,913	$ 732,997
2043	2,075,591	$ 695,692	$ 58,900	$ 5,083	$ 754,592	$ 759,675
2044	2,082,030	$ 723,162	$ 60,196	$ 5,087	$ 783,358	$ 788,445
2045	2,098,860	$ 754,845	$ 61,520	$ -	$ 816,365	$ 816,365

Projection Summary – New Generation ($000)

Fiscal Year	Net Energy Sent Out	Production Fuel Costs	Generation Operation and Maintenance Expense[1]	Debt Service Payments[2]	Operating Expense	Total Expense Including DS
2020	1,756,633	$ 265,226	$ 35,706	$ 47,737	$ 300,932	$ 348,669
2021	1,803,316	$ 281,536	$ 36,492	$ 47,736	$ 318,028	$ 365,764
2022	1,820,163	$ 295,429	$ 37,295	$ 22,775	$ 332,723	$ 355,498
2023	**1,836,945**	**$ 220,972**	**$ 77,007**	**$ 28,583**	**$ 297,979**	**$ 326,562**
2024	1,855,423	$ 222,363	$ 78,624	$ 28,578	$ 300,988	$ 329,565
2025	1,874,814	$ 233,606	$ 78,889	$ 28,578	$ 312,495	$ 341,073
2026	1,876,545	$ 199,605	$ 69,611	$ 28,579	$ 269,216	$ 297,795
2027	1,895,286	$ 209,983	$ 69,874	$ 28,583	$ 279,857	$ 308,440
2028	1,906,812	$ 218,133	$ 70,152	$ 28,585	$ 288,285	$ 316,870
2029	1,923,684	$ 227,388	$ 70,399	$ 28,585	$ 297,787	$ 326,372
2030	1,943,895	$ 238,102	$ 70,640	$ 28,581	$ 308,742	$ 337,323
2031	1,954,166	$ 248,133	$ 71,047	$ 40,482	$ 319,179	$ 359,662
2032	1,944,530	$ 255,255	$ 72,776	$ 40,479	$ 328,030	$ 368,509
2033	1,959,215	$ 267,290	$ 77,177	$ 40,479	$ 344,467	$ 384,946
2034	1,971,878	$ 279,446	$ 82,000	$ 40,480	$ 361,446	$ 401,927
2035	1,987,719	$ 293,450	$ 87,285	$ 40,480	$ 380,735	$ 421,215
2036	1,981,674	$ 303,257	$ 92,072	$ 40,481	$ 395,329	$ 435,810
2037	1,993,164	$ 317,198	$ 92,341	$ 40,480	$ 409,539	$ 450,019
2038	1,997,321	$ 330,517	$ 92,616	$ 40,483	$ 423,133	$ 463,616
2039	2,009,529	$ 348,424	$ 92,905	$ 40,482	$ 441,328	$ 481,811
2040	2,014,527	$ 363,565	$ 93,200	$ 8,720	$ 456,764	$ 465,484
2041	2,053,505	$ 386,244	$ 93,513	$ 7,141	$ 479,757	$ 486,898
2042	2,069,216	$ 404,092	$ 93,816	$ 5,484	$ 497,908	$ 503,392
2043	2,075,591	$ 419,725	$ 94,120	$ 3,744	$ 513,845	$ 517,589
2044	2,082,030	$ 437,388	$ 94,432	$ 1,917	$ 531,819	$ 533,737
2045	2,098,860	$ 456,039	$ 94,759	$ -	$ 550,798	$ 550,798

1 – Gross
2 – Includes refunding of 2012 Bonds

Projection Summary – New Generation ($000) ULSD

Fiscal Year	Production Fuel Costs	Generation Operation and Maintenance Expense[1]	Debt Service Payments[2]	Production Fuel and Operating Expense Total	Total Expense Including DS
2020					
2021					
2022	**$ -**	**$ -**	**$ (25,049)**	**$ -**	**$ (25,049)**
2023	$ (57,000)	$ 38,892	$ (19,421)	$ (18,108)	$ (37,528)
2024	$ (56,645)	$ 39,671	$ (19,415)	$ (16,974)	$ (36,389)
2025	$ (61,421)	$ 39,079	$ (19,419)	$ (22,342)	$ (41,761)
2026	$ (64,204)	$ 38,457	$ (19,420)	$ (25,747)	$ (45,166)
2027	$ (69,074)	$ 37,826	$ (19,416)	$ (31,248)	$ (50,664)
2028	$ (74,512)	$ 37,189	$ (19,419)	$ (37,322)	$ (56,741)
2029	$ (81,873)	$ 36,503	$ (19,422)	$ (45,370)	$ (64,791)
2030	$ (87,640)	$ 35,790	$ (19,421)	$ (51,850)	$ (71,271)
2031	$ (92,469)	$ 35,221	$ (1,760)	$ (57,248)	$ (59,008)
2032	$ (94,516)	$ 35,952	$ (1,762)	$ (58,564)	$ (60,326)
2033	$ (100,383)	$ 39,333	$ (1,761)	$ (61,050)	$ (62,811)
2034	$ (106,369)	$ 43,115	$ (1,761)	$ (63,255)	$ (65,016)
2035	$ (113,411)	$ 47,336	$ 23,949	$ (66,075)	$ (42,126)
2036	$ (116,908)	$ 51,034	$ 17,761	$ (65,874)	$ (48,113)
2037	$ (123,036)	$ 50,191	$ 17,751	$ (72,845)	$ (55,094)
2038	$ (128,427)	$ 49,328	$ 17,759	$ (79,099)	$ (61,340)
2039	$ (142,704)	$ 48,456	$ 17,758	$ (94,249)	$ (76,491)
2040	$ (149,642)	$ 47,564	$ (14,003)	$ (102,078)	$ (116,081)
2041	$ (162,740)	$ 46,664	$ 2,056	$ (116,076)	$ (114,020)
2042	$ (170,993)	$ 45,728	$ 400	$ (125,265)	$ (124,865)
2043	$ (177,088)	$ 44,764	$ (1,339)	$ (132,324)	$ (133,663)
2044	$ (183,189)	$ 43,780	$ (3,170)	$ (139,409)	$ (142,579)
2045	$ (192,083)	$ 42,783	$ -	$ (149,300)	$ (149,300)

1 – Net of MEC cost reduction, CT savings, Aggreko, and insurance
2 – Includes refunding of 2012 Bonds

Projection Summary – New Generation ($000) LNG

Fiscal Year	Net Energy Sent Out	Production Fuel Costs	Generation Operation and Maintenance Expense[1]	Debt Service Payments[2]	Operating Expense	Total Expense Including DS
2020	1,756,633	$ 265,226	$ 35,706	$ 47,737	$ 300,932	$ 348,669
2021	1,803,316	$ 281,536	$ 36,492	$ 47,736	$ 318,028	$ 365,764
2022	1,820,163	$ 295,429	$ 37,295	$ 22,775	$ 332,723	$ 355,498
2023	1,836,945	$ 220,972	$ 77,007	$ 28,583	$ 297,979	$ 326,562
2024	1,855,423	$ 222,363	$ 78,624	$ 28,578	$ 300,988	$ 329,565
2025	1,874,814	$ 233,606	$ 78,889	$ 28,578	$ 312,495	$ 341,073
2026	**1,876,545**	**$ 199,605**	**$ 69,611**	**$ 28,579**	**$ 269,216**	**$ 297,795**
2027	1,895,286	$ 209,983	$ 69,874	$ 28,583	$ 279,857	$ 308,440
2028	1,906,812	$ 218,133	$ 70,152	$ 28,585	$ 288,285	$ 316,870
2029	1,923,684	$ 227,388	$ 70,399	$ 28,585	$ 297,787	$ 326,372
2030	1,943,895	$ 238,102	$ 70,640	$ 28,581	$ 308,742	$ 337,323
2031	1,954,166	$ 248,133	$ 71,047	$ 40,482	$ 319,179	$ 359,662
2032	1,944,530	$ 255,255	$ 72,776	$ 40,479	$ 328,030	$ 368,509
2033	1,959,215	$ 267,290	$ 77,177	$ 40,479	$ 344,467	$ 384,946
2034	1,971,878	$ 279,446	$ 82,000	$ 40,480	$ 361,446	$ 401,927
2035	1,987,719	$ 293,450	$ 87,285	$ 40,480	$ 380,735	$ 421,215
2036	1,981,674	$ 303,257	$ 92,072	$ 40,481	$ 395,329	$ 435,810
2037	1,993,164	$ 317,198	$ 92,341	$ 40,480	$ 409,539	$ 450,019
2038	1,997,321	$ 330,517	$ 92,616	$ 40,483	$ 423,133	$ 463,616
2039	2,009,529	$ 348,424	$ 92,905	$ 40,482	$ 441,328	$ 481,811
2040	2,014,527	$ 363,565	$ 93,200	$ 8,720	$ 456,764	$ 465,484
2041	2,053,505	$ 386,244	$ 93,513	$ 7,141	$ 479,757	$ 486,898
2042	2,069,216	$ 404,092	$ 93,816	$ 5,484	$ 497,908	$ 503,392
2043	2,075,591	$ 419,725	$ 94,120	$ 3,744	$ 513,845	$ 517,589
2044	2,082,030	$ 437,388	$ 94,432	$ 1,917	$ 531,819	$ 533,737
2045	2,098,860	$ 456,039	$ 94,759	$ -	$ 550,798	$ 550,798

1 – Net of MEC cost reduction, CT savings, Aggreko, and insurance
2 – Includes refunding of 2012 Bonds

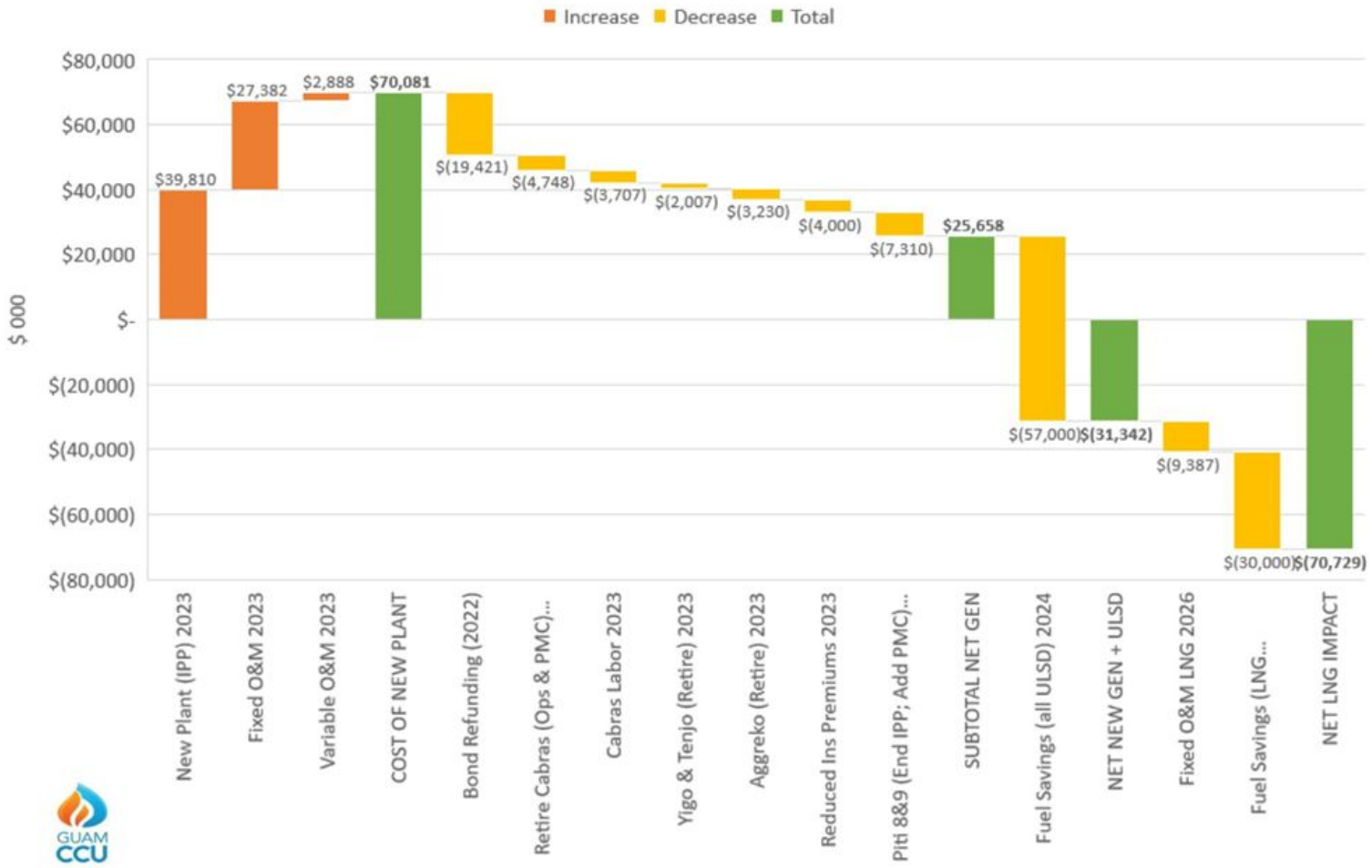
Projection Summary – New Generation ($000) LNG

Fiscal Year	Production Fuel Costs	Generation Operation and Maintenance Expense[1]	Debt Service Payments[2]	Production Fuel and Operating Expense Total	Total Expense Including DS
2020			$ -		
2021					
2022	$ -	$ -	$ (25,049)	$ -	$ (25,049)
2023	$ (57,000)	$ 38,892	$ (19,421)	$ (18,108)	$ (37,528)
2024	$ (56,645)	$ 39,671	$ (19,415)	$ (16,974)	$ (36,389)
2025	$ (61,421)	$ 39,079	$ (19,419)	$ (22,342)	$ (41,761)
2026	**$ (107,628)**	**$ 28,925**	**$ (19,420)**	**$ (78,704)**	**$ (98,123)**
2027	$ (114,967)	$ 28,293	$ (19,416)	$ (86,674)	$ (106,089)
2028	$ (122,736)	$ 27,656	$ (19,419)	$ (95,081)	$ (114,499)
2029	$ (132,799)	$ 26,968	$ (19,422)	$ (105,831)	$ (125,253)
2030	$ (141,078)	$ 26,254	$ (19,421)	$ (114,825)	$ (134,246)
2031	$ (148,638)	$ 25,684	$ (1,760)	$ (122,954)	$ (124,713)
2032	$ (153,158)	$ 26,415	$ (1,762)	$ (126,743)	$ (128,505)
2033	$ (162,049)	$ 29,796	$ (1,761)	$ (132,253)	$ (134,015)
2034	$ (171,266)	$ 33,576	$ (1,761)	$ (137,689)	$ (139,450)
2035	$ (181,866)	$ 37,796	$ 23,949	$ (144,069)	$ (120,120)
2036	$ (188,656)	$ 41,494	$ 17,761	$ (147,162)	$ (129,401)
2037	$ (198,071)	$ 40,651	$ 17,751	$ (157,420)	$ (139,669)
2038	$ (207,001)	$ 39,788	$ 17,759	$ (167,213)	$ (149,454)
2039	$ (225,387)	$ 38,915	$ 17,758	$ (186,472)	$ (168,714)
2040	$ (236,644)	$ 38,022	$ (14,003)	$ (198,622)	$ (212,625)
2041	$ (254,010)	$ 37,121	$ 2,056	$ (216,889)	$ (214,833)
2042	$ (266,190)	$ 36,185	$ 400	$ (230,005)	$ (229,606)
2043	$ (275,967)	$ 35,221	$ (1,339)	$ (240,747)	$ (242,086)
2044	$ (285,775)	$ 34,236	$ (3,170)	$ (251,539)	$ (254,708)
2045	$ (298,806)	$ 33,239	$ -	$ (265,567)	$ (265,567)

Key Rate Factors

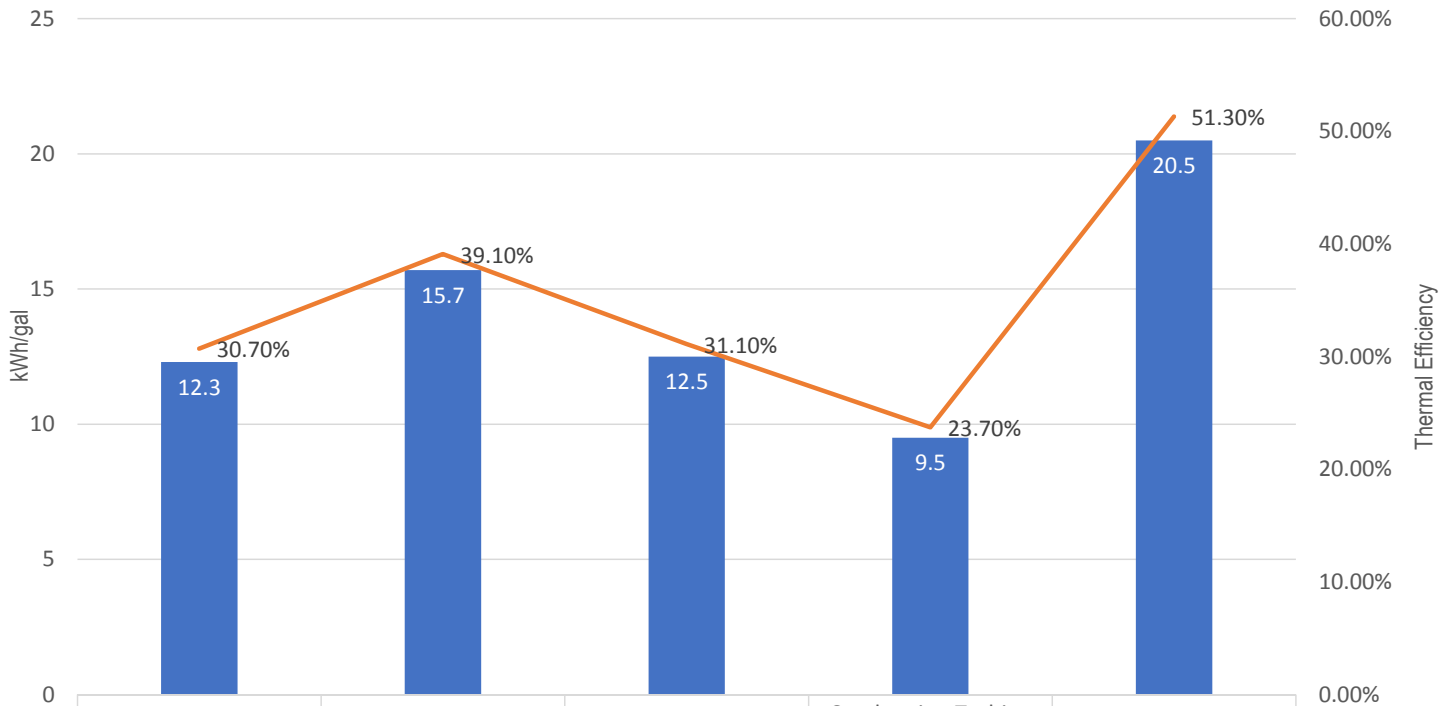
- There would be a net savings on rate payers total bill
- Substantial fuel savings due to efficiency of new Ukudu plant
  - New plant production offset existing intermediate and peaker production cost
  - New plant more efficient than MEC units
  - Renewables integrated in 2023
  - Storage tanks rentals reduced due to single fuel
- Increased fixed capacity and O&M payments of new Ukudu plant offset by fuel cost reduction due to plants high efficiency
- Reduction in cost in FY 2023 due to:
  - Cabras 1&2 retirement
  - Aggreko contract expiration
  - MEC operating cost reduced due to lower load factor
  - Some peakers candidates for retirement
- Refinancing of 2012 bonds will levelized payments in 2022
- Base rate increased but LEAC decreased resulting in Total Bill Savings

Cost Reduction Strategy



New Plant (IPP) 2023	$ 39,810
Fixed O&M 2023	27,382
Variable O&M 2023	2,888
COST OF NEW PLANT	**70,081**
Bond Refunding (2022)	(19,421)
Retirement Cabras (Ops & PMC) 2023	(4,748)
Cabras Labor 2023	(3,707)
Yigo & Tenjo (Retirement) 2023	(2,007)
Aggreko (Retirement) 2023	(3,230)
Reduced Ins Premiums 2023	(4,000)
Piti 8&9 (End IPP; Add PMC) 2024	(7,310)
SUBTOTAL NET GEN	**25,658**
Fuel Savings (all ULSD) 2024	(57,000)
NET NEW GEN + ULSD	**(31,342)**
Fixed O&M LNG 2026	(9,387)
Fuel Savings (LNG Incremental) 2027	(30,000)
NET LNG IMPACT	**$ (70,729)**

Comparison of Plant Efficiencies



	Cabras Steam Plant 132MW	MEC Slow Speed Engine Plant 88MW	Medium Speed Plants Average 80MW	Combustion Turbine Plants Average 120MW	New Ukudu Plant 198MW
NET kWh/gal ULSD	12.3	15.7	12.5	9.5	20.5
Net Thermal Efficiency	30.70%	39.10%	31.10%	23.70%	51.30%

Targeted Cost Reductions

All existing generation plants will be evaluated over the next 2-years for potential retirement or change in operations in 2023 due to the new power plant and the magnitude of military buildup growth.

Description	KW		Amount
Yigo CT KW Retired	20,000	$	478,465
Tenjo Diesel KW Retired	26,000	$	2,695,441
Aggreko Re-Distributed with ATS		$	11,243,703
MEC Under PMC/GPA Employee Model		$	10,770,445
TOTALS	46,000	$	25,188,054

Generation Plant Transfers Resulting in Cost Reductions

Transfer of IPP generating units reduced GPA costs following the expiration of their capital leases

- In late 1990s, GPA entered into capital lease transactions for new generation
  - Approximately 128MW of capacity
    - MEC 8: 44MW Baseload
    - MEC 9: 44MW Baseload
    - PITI 7: 40MW Intermediate
- Aggreko 40MW Temporary Lease to Own Power Contract began January 2016 and expires Jan 2021 with ownership to GPA. Annual cost about $13M

PITI 7

- GPA paid $6 million per year as part of capital lease, which expired in 2017
- GPA now spends less than $1 million to operate and maintain the plant



MEC 8 and 9

- In January 2019, GPA took ownership of the MEC units 8 and 9
- GPA paid about $30 million per year for the capital lease
- GPA paying $15 million annually to MEC to continue to operate and recapitalize plant up to January 2024



Load Growth Capacity with New Plant

Description	Quantity	MW	Total MW Capacity
Ukudu Combustion Turbines	3	45	135
Ukudu Steam Turbine	1	63	63
MEC 8	1	44	44
MEC 9	1	44	44
		Total Baseload Capacity	**286**
GPA Standby Generators			
Dededo CT 1	1	20	20
Dededo CT 2	1	20	20
Macheche CT	1	20	20
Yigo CT	1	20	20
Piti 7 CT	1	40	40
Tenjo Diesels	6	4	24
Talofofo Diesels	2	4	8
Manenggon Diesels	2	4	8
Aggreko Diesels	38	1.1	40
		Total Peakers/Reserves	**200**
		TOTAL FIRM CAPACITY	**486**
Largest Unit			45
2nd Largest Unit			45
3rd Largest Unit			45
		Total Reserve Requirement	**135**
Peak Demand Capacity			351
2019 Peak Demand			256
		AVAILABLE GROWTH CAPACITY	**95**

Load Growth Accommodated with New Plant



USEPA Consent Decree

USEPA Compliance Schedule

- **New power plant is central to compliance with USEPA regulations.**
- Negotiations with USEPA continues and indications are that a Consent Decree is imminent soon.
- GPA has provided USEPA a workable updated compliance timeline to insure the electrical grid reliability is maintained while the new combined cycle plant is constructed.
- Retiring 264MW of its 352MW base load capacity within a 7 year period is a complex and challenging task to achieve as proposed in the plan submitted in Jan 2015.
- The retirement of 264MW of base load and the conversion of 88MW to clean ULSD fuel will result in the substantial reduction of pollutants above what the 2013 and 2015 USEPA regulations targeted. Additionally, retirements will result in the discontinuance of thermal effluent discharges into ocean waters further improving the environment.
- CCU and PUC have been aggressively implementing renewable energy and demand side management programs resulting in additional benefits to the environment.

Summary & Recommendations

Summary

- **The New Power Plant is critical to the future of the power system and we need to proceed in commissioning the plant by October 2022:**
  - New power plant is central to compliance with USEPA regulations of 2013 and 2014. Non-compliance has resulted in accrued potential penalties in the hundreds of millions.
  - GPA plants are aged and will be between 24 to 48 years old by 2023.
  - Load growth beyond 2022 will result in load shedding unless new capacity is added.
  - Integration of more renewables beyond 2022 without the new plant is unlikely and will limit the grid's ability to increase Guam's Renewable Portfolio Standard.
- **The new plant is much more reliable than the existing units.** Its characteristics and location will substantially improve the reliability of the system.
  - Its location, in northern Guam, near large and critical load centers having **underground transmission lines reduces line losses and improves operation during and recovery after storms.**
- **The new plant is much more efficient than existing units.**
  - Reduction of GPA's annual fuel consumption by about 35 million gallons.
- **The new plant improves the sustainability and resilience of the island.**
  - Tertiary-treated wastewater is used for cooling, substantially reducing demand on aquifer.
  - Eliminates sea water usage to cool generators thereby protecting our ocean environment.
  - Complies with USEPA regulations by burning clean fuel and much less fuel thereby reducing the island's carbon footprint and its impact on climate change.
- **The new plant utilizing ULSD provides the opportunity for a net reduction in cost by 2023.**
  - The fuel savings pay for the cost of the new plant.
  - The dual-fuel new plant can also burn natural gas and provides GPA the opportunity to reduce energy cost more if LNG is integrated into the system mix.

Recommendations

- GPA is requesting the CCU and the PUC to approve the Energy Conversion Agreement with KEPCO for the New Combined Cycle Plant and its supporting schedules and documents:
  - Energy Conversion Agreement (ECA)
  - ECA Schedules & Supporting Documents
    - Schedule 1 Functional Specifications
    - Schedule 2 Technical Limits and Contracted Characteristics
    - Schedule 3 GPA Provided Items
    - Schedule 4 Commissioning and Testing
    - Schedule 5 Determination of Tariff
    - Schedule 6 Metering System
    - Schedule 7 ULSD Specifications
    - Schedule 8 Not Used
    - Schedule 9 LNG Specifications
    - Schedule 10 Transfer Price
    - Schedule 11 Performance Bond
    - Schedule 12 ULSD Metering and Fuel Settlement
    - Schedule 13 Not Used
    - Schedule 14 Adjustment In case Natural Gas is available after Year 3
    - Real Property Lease Agreement
    - Lender's Direct Agreement

Project Milestones

CCU APPROVAL	August 2019
PUC APPROVAL	September 2019
Sign Contract	October 2019
Permitting & Financial Close	June 2020
Commercial Operations Date	October 2022



Guam Power Authority

Review of New Generating Rate Impacts

Presentation

August 18, 2019

Mark Beauchamp, President

Utility Financial Solutions, LLC

Phone: 616-403-5450

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International consulting firm providing cost of service, financial plans and financial services to utilities

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Combined Cycle & New Solar Generating Units

- Identified fuel expenses under the following:
  - Combined cycle generating unit
  - Current power supply portfolio (Included new solar)
- Projected changes in capacity and operational and debt service restructuring
- Compared changes in costs with new generating unit
- Identified impacts on average residential customer (All other changes excluded)



Projected Change in Costs from New Generation

Fiscal Year	Production Fuel Costs	Generation Operation and Maintenance Expense	Debt Service Payments	Total Expense Including DS
2023	$ (57,000)	$ 38,892	$ (19,421)	$ (37,528)
2024	$ (56,645)	$ 39,671	$ (19,415)	$ (36,389)
2025	$ (61,421)	$ 39,079	$ (19,419)	$ (41,761)
2026	$ (107,628)	$ 28,925	$ (19,420)	$ (98,123)
2027	$ (114,967)	$ 28,293	$ (19,416)	$ (106,089)
2028	$ (122,736)	$ 27,656	$ (19,419)	$ (114,499)
2029	$ (132,799)	$ 26,968	$ (19,422)	$ (125,253)
2030	$ (141,078)	$ 26,254	$ (19,421)	$ (134,246)
2031	$ (148,638)	$ 25,684	$ (1,760)	$ (124,713)
2032	$ (153,158)	$ 26,415	$ (1,762)	$ (128,505)
2033	$ (162,049)	$ 29,796	$ (1,761)	$ (134,015)
2034	$ (171,266)	$ 33,576	$ (1,761)	$ (139,450)
2035	$ (181,866)	$ 37,796	$ 23,949	$ (120,120)
2036	$ (188,656)	$ 41,494	$ 17,761	$ (129,401)
2037	$ (198,071)	$ 40,651	$ 17,751	$ (139,669)
2038	$ (207,001)	$ 39,788	$ 17,759	$ (149,454)
2039	$ (225,387)	$ 38,915	$ 17,758	$ (168,714)
2040	$ (236,644)	$ 38,022	$ 17,757	$ (180,865)
2041	$ (254,010)	$ 37,121	$ 35,396	$ (181,493)
2042	$ (266,190)	$ 36,185	$ 35,395	$ (194,611)
2043	$ (275,967)	$ 35,221	$ 35,396	$ (205,351)
2044	$ (285,775)	$ 34,236	$ 35,396	$ (216,143)
2045	$ (298,806)	$ 33,239	$ -	$ (265,567)

- Fuel Cost Decreasing by $50 - $60 million between 2023 – 2025
- LNG anticipated 2026, savings increase an additional $40 - $45 million
- Savings partially off set by $40 million in additional operating expenses
- Debt service restructuring increases customer savings by $19 million between 2023 - 2030



Residential Rate Impacts

Change in Fuel Costs

Year	LEAC Projection (Cents per kWh)		
	Projected Fuel Costs - Current	Projected Fuel Costs - New Generating Unit	Monthly Dollar Savings
2023	***$ 0.151***	***$ 0.120***	***$ 29.48***
2024	0.150	0.120	*29.00*
2025	0.157	0.125	*31.12*
2026	***0.164***	***0.106***	***54.49***
2027	0.171	0.111	*57.63*
2028	0.179	0.114	*61.15*
2029	0.187	0.118	*65.58*
2030	0.195	0.122	*68.95*

Base Rate Adjustment
Average Residential Customer

Year	Change in Base Rates - Percent	Average Monthly Base Rate Charges	Monthly Dollar Change
2022		91.26	
2023	11.8%	102.06	10.80
2024	-	102.06	10.80
2025	-	102.06	10.80
2026	-	102.06	10.80
2027	-	102.06	10.80
2028	-	102.06	10.80
2029	-	102.06	10.80
2030	-	102.06	10.80

Net Residential Rate Impacts

Year	Current	New Generating	Dollar Change	Percent Change
2023	***$ 235.01***	***$ 216.34***	***$ (18.68)***	**-7.95%**
2024	***$ 244.91***	***$ 215.91***	(29.00)	**-11.84%**
2025	***$ 251.55***	***$ 220.43***	(31.12)	**-12.37%**
2026	***$ 257.59***	***$ 203.11***	**(54.49)**	**-21.15%**
2027	***$ 264.94***	***$ 207.31***	(57.63)	**-21.75%**
2028	***$ 271.88***	***$ 210.73***	(61.15)	**-22.49%**
2029	***$ 279.93***	***$ 214.35***	(65.58)	**-23.43%**
2030	***$ 287.37***	***$ 218.42***	(68.95)	**-23.99%**

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

Special Board Meeting
CCU Conference Room, Gloria B. Nelson Public Service Building
10:00 a.m., September 4, 2019

AGENDA

1. CALL TO ORDER

2. COMMUNICATIONS
   - 2.1 Public Comments (2 min. per person)

3. GPA
   - 3.1 Resolution 2019-12 Approval of FY2019 Budget

4. ANNOUNCEMENTS
   - 4.1 Next CCU Meetings: Sept 17 – GWA Work Session; Sept 19 – GPA Work Session; CCU Regular Meeting – Sept. 24

5. EXECUTIVE SESSION
   - 5.1 GWA Litigation / Atty. Kelly Clark: Northern Wastewater Treatment Plant Litigation
   - 5.2 GWA Litigation / Atty. Kelly Clark: Litigation Filed by GovGuam for PFAS Damages

6. ADJOURNMENT

Proposed 2020 Budget

Pro-Forma Statement of Operations ('000)	2019 Adopted Budget	2019 Projected Budget	2020 Proposed Budget
Revenue			
Sale of Electricity			
Base Revenue	$ 165,002	163,103	$ 163,763
Fuel Revenue	272,011	243,783	270,418
Miscellaneous	2,020	3,020	2,160
Provision for Bad Debt	(1,098)	(1,098)	(1,091)
Total Revenue	**437,935**	**408,808**	**435,250**
Production Cost			
Production Fuel	272,011	243,783	270,418
IPP Cost	16,168	16,152	14,953
Total Production Cost	**288,179**	**259,935**	**285,372**
Operating Expenditures	**76,865**	**69,374**	**76,988**
Earnings Before Depreciation & Amortization	**72,891**	**79,499**	**72,890**
Depreciation & Amortization	**42,016**	**37,749**	**42,518**
Earnings from Operations	**30,875**	**41,750**	**30,372**
Non-Operating Revenues (Expense)			
Interest/Other Income (Expense	(22,872)	(24,984)	(24,110)
Change in Net Position	**$ 8,003**	**$ 16,766**	**$ 6,262**

Proposed 2020 Budget (continued)

Operating Expenses Budget - Highlight

High System Reliability

- Reduce outage due to vegetation
  - Vegetation Management- $497k
  - Village Management Program - $230k
- Provide wider coverage of security - $1.3 million
- Improve Business Risk
  - Fire Alarm/ Gas Suppression Maintenance - $250k
  - USDA Snake Controls - $219k
- Improve Environmental Concerns
  - EPA Emission Testing - $200k
  - Used Oil Disposal - $250k
  - Oxidation Catalyst - $200k
  - Batteries & Waste - $100k
- Monotube Refurbishment (T&D) - $100k
- New generation
  - LNG Feasibility Study - $250k

Proposed 2020 Budget (continued)

Operating Expenses Budget - Highlight

Commitment to Workforce

- Train new generation of employees – 20 new apprentice - $1.2 million
- Move employees to 20th market percentile - $500k

Superior Customer Service

- Improve process efficiency
  - Process improvement
    - Update SOP and remove unnecessary steps and documents
- One utility – GPWA
- Customer Bill Printing Services and newsletters - $375k
- DSM Program - $300k

Optimize the use of Technology

- Data Circuit Lines (PSCC) - $230k
- Robotics Process Automation (RPA) - $87k

Proposed 2020 Budget (continued)

Debt Service (Interest & Principal Combined) '000	2018	2019	2020 Proposed
2010 Senior Lien	$ 2,000	$ -	$ -
2012 Revenue Bond	17,086	31,467	35,232
2014 Revenue Bond	5,083	5,084	5,087
2017 Revenue Bond	5,915	7,607	7,418
	$ 30,084	$ 44,158	$ 47,737

Debt Service Coverage Ratio	2019 Projected	2020 Proposed
Debt Service Coverage Ratio (Bond Method)	1.90	1.56
Debt Service Coverage Ratio (S&P Method) (Bond DSCR - 1.3)	1.57	1.37

Proposed 2020 Budget (continued)

Capital Projects	2018 Adopted	2019 Adopted	2020 Proposed
Carry Over	$ 3,500,000	$ 6,176,661	$ 7,686,882
General Plant	13,280,813	13,437,426	13,515,696
Line Extensions	4,270,187	4,451,434	3,840,293
Engineering Projects	4,179,000	2,407,924	2,577,700
	$ 25,230,000	$ 26,473,445	$ 27,620,571

Proposed 2020 Budget (continued)

Capital Expenditures Budget - Highlight

High System Reliability

Improve generation reliability

- Cabras 1 & 2 - $5.2 million
  - Replacement of Burner Front System
  - Overhaul and Upgrades to Feedwater Heaters and Service Water Coolers
  - Boiler Tube Replacements, Parts, Fire Pumps, etc.
- Gas CT - $1.2 million
  - Overhauls and Upgrades at Macheche CT and Dededo CT
- Diesel Plants - $1.7 million
  - Continued Overhaul and upgrades
- T&D Substations - $1.1 million
  - Upgrades of Circuit Breakers

Optimize the use of Technology

- Disaster recovery
  SCADA - $1.4 million
- E1 Upgrade - $1.4 million

GUAM POWER AUTHORITY
ATURIDÅT ILEKTRESEDÅT GUAHAN
P.O.BOX 2977 • AGANA, GUAM U.S.A. 96932-2977

Issues for Decision

Resolution No. 2019-12:

Relative to Adoption of a Budget for Guam Power Authority for the Fiscal Year 2020

What is the project's objective? Is it necessary and urgent?

Section 6.11 of the GPA Bond Indenture Agreement requires the Authority to provide a copy of an approved budget to the Bond Trustee prior to the beginning of each fiscal year. The General Manager has carefully reviewed and proposes the budget for Fiscal Year 2020 totaling $435,250,000 provision for bad debt of $1,091,000. The GM has reviewed and proposes a Revenue Funded Capital Improvement Project budget totaling $27,620,571. The Fiscal Year 2020 Budget is based on a Non-Fuel Revenue forecast of $163,763,000 and miscellaneous revenues of $2,160,000 and a Fuel Revenue forecast of $270,418,000 and less $1,091,000 provision for bad debt for *total revenues of $435,250,000.*

Total Operations and Maintenance budget includes Labor and Retiree's benefit costs of $48,221,673; Non-Labor cost of $35,250,324; less Capitalized O&M of $6,484,303 for total O&M Budget of $76,987,694; Bad Debt Expense of $1,091,000, Independent Power Producers costs plus Aggreko of $27,648,000; Debt Service of $47,737,000; Production Fuel of $270,418,000 and revenue Funded Capital Improvement Projects of $27,620,571. Funds pledged for the Bond Reserves are not included in the overall budget amounts.

How much will it cost?

The General Manager of the Guam Power Authority has created and thoroughly reviewed the budget for *Fiscal Year 2020 totaling $436,431,000.* The CCU Commissioners noted that the budget provides funding of Revenue Funded Capital Improvement Projects totaling $27,620,571.

CONSOLIDATED COMMISSION ON UTILITIES
Guam Power Authority | Guam Waterworks Authority
P.O. Box 2977 Hagatna, Guam 96932 | (671)649-3002 | guamccu.org

GPA RESOLUTION 2019-12

RELATIVE TO THE ADOPTION OF A BUDGET FOR THE GUAM POWER AUTHORITY FOR FISCAL YEAR 2020

WHEREAS, the Guam Power Authority (GPA) is a Public Corporation of the Government of Guam; and

WHEREAS, Section 8117 of Chapter 8 of Title 12 of Guam Code Annotated authorizes the Consolidated Commission on Utilities (CCU) to adopt an annual budget for the Authority; and

WHEREAS, Section 6.11 of the GPA Bond Indenture Agreement requires the Authority to provide a copy of an approved budget to the Bond Trustee prior to the beginning of each fiscal year; and

WHEREAS, the General Manager of the Guam Power Authority has reviewed and proposes the budget for Fiscal Year 2020 totaling $435,250,000 provision for bad debt of $1,091,000; and

WHEREAS, the General Manager has reviewed and proposes a Revenue Funded Capital Improvement Project (CIP) budget totaling $27,620,571; and

WHEREAS, the General Manager has reviewed the budget to ensure that all budget expenditures are consistent with the strategic goals of the Authority; and

NOW, THEREFORE BE IT RESOLVED BY THE CONSOLIDATED COMMISSION ON UTILITIES AS THE GOVERNING BODY OF THE GUAM POWER AUTHORITY, AS FOLLOWS:

DRAFT

1. The Fiscal Year 2020 Budget of **$436,431,000** is hereby approved. The Fiscal Year 2020 Budget is based on a Non-Fuel Revenue forecast of $163,763,000, miscellaneous revenues of $2,160,000 and a Fuel Revenue forecast of $270,418,000 and less $1,091,000 provision for bad debt for total revenues of $435,250,000.

   The budget consists of:

   a. Total Operations and Maintenance budget includes Labor and Retiree's benefit costs of $48,221,673; Non-Labor cost of $35,250,324 less Capitalized O&M of $6,484,303 for total O&M Budget of $76,987,694;
   b. Bad Debt expense of $1,091,000;
   c. Independent Power Producers costs plus Aggreko Payments of $27,648,000; Debt Service of $47,737,000;
   d. Revenue Funded Capital Improvement Projects of $27,620,571;
   e. Expressed in the attached summary of Revenue Requirements dated August 22, 2019 is hereby adopted. Funds pledged for the Bond Reserves are not included in the overall budget amounts.

2. The authorized level of positions within the Authority shall be 490 FTEs.
3. The General Manager is authorized to implement structural pay adjustment to the 20th market percentile effective January 6, 2020 based on the 2017 Market Data and subject to availability of funds.
4. The General Manager is authorized to transfer within the overall approved GPA budget, exception that there shall be no transfer into the personnel account from other non-labor accounts. In addition, there is no transfer authority for funds budgeted for debt service payment or IPP payments.
5. The Revenue Funded Capital Improvement budget is $27,620,571 is approved and the General Manager is authorized to petition the Public Utilities Commission (PUC) for approval.
6. The General Manager's delegated contract approval authority is $750,000.

RESOLVED, that the Chairman of the Commission certifies and the Board Secretary of this Resolution.

DRAFT

DULY and REGULARY ADOPTED AND APPROVED THIS this 4th DAY of September 2019

Certified by:

JOSEPH T. DUENAS
Chairman
Consolidated Commission on Utilities

Attested by:

MICHAEL LIMTIACO
Secretary
Consolidated Commission on Utilities

I, Michael Limtiaco, Secretary for the Consolidated Commission on Utilities (CCU), as evidenced by my signature above do certify as follows:

The foregoing is a full, true, and correct copy of the resolution duly adopted at a regular meeting of the members of Guam Consolidated Commission on Utilities, duly and legally held at the meeting place properly noticed and advertised at which meeting a quorum was present and the members who were present voted as follows:

Ayes: _____

Nays: _____

Absent: _____

Abstain: _____

DRAFT

	Guam Power Authority	
	FY 20 PROPOSED Revenue Requirement ($000)	
	as of August 22,2019	
1	**Proforma Income Statement**	**FY2020**
2		
3	Existing Base Rate Revenues	$ 163,763
4	Fuel Revenues	270,418
5	Miscellaneous Revenues	2,160
6	**Total Revenues**	$ 436,341
7	Bad Debt Expense	$ (1,091)
8	**Net Operating Revenues**	**$ 435,250**
9		
10	Production Fuel	270,418
11	IPP Costs	11,586
12	Aggreko Lease Payment	3,368
13		
14	Production Non-fuel	23,040
15	Transmission and Distribution	13,288
16	Administrative and General	34,727
17	Customer Accounting	5,933
18	**Total O&M Expenses**	76,988
19	Depreciation	42,518
20		
21	**Total Operating Expenses**	$ 404,878
22		
23	**Earnings From Operations**	**30,372**
24		
25	Other Revenues (Expenses):	
26	Investment Income	2,004
27	Interest expense (ST Debt)	(29)
28	Interest expense (2010 Senior Lien TE Bond)	-
29	Interest Expense (Aggreko Lease Payment)	(531)
30	Interest expense (2012 Revenue Bond)	(16,237)
31	Interest expense (2014 Revenue Bond)	(3,567)
32	Interest expense (2017 Refunding Bond)	(7,418)
33	Interest expense (IPP's)	-
34	AFUDC	-
35	Other Expense/Income	
36	Amortization of Issuance Costs	1,667
37		
38	**Net Earnings(Loss) Before Capital Contribution**	**6,261**
39	Capital Contributions	-
40		
41	**Increase (Decrease) in Net Assets**	**$ 6,261**

	Guam Power Authority	
	FY 20 PROPOSED Revenue Requirement ($000)	
42		
43	**Debt Service Coverage Calculation**	
44	Earnings From Operations	$ 30,372
45	Add Interest Income (Net of Const. Fund Interest)	1,415
46	Add: Depreciation	42,518
47	Balance Available for Debt Service	74,305
48	IPP Debt Service + Aggreko lease	8,929
49	Balance After IPP Debt Service	65,376
50	**Debt Service**	
51	Bond Interest Expense	27,222
52	Bond Principal	20,515
53	Total Debt Service	47,737
54		
55	Debt Service Coverage (Bond Method)	**1.56**
56	Debt Service Coverage (S&P Method)	**1.37**
57		
58	**Internal Cashflow Statement**	
59	Total Cash Generated	$ 47,113
60	CIP's-Internally Funded	(27,621)
61	Principal Payment (2010 Senior Lien TE Bond)	-
62	Principal Payment (Aggreko Lease Payment)	(8,399)
63	Principal Payment (2012 Revenue Bond)	(18,995)
64	Principal Payment (2014 Revenue Bond)	(1,520)
65	Principal Payment (2017 Refunding Bond)	-
66	MEC Recapitalization	(3,764)
67	Decrease (Increase) in WC Requirements:	-
68	Materials Inventory	(1,000)
69	Other WC Requirement	1,174
70	Construction Fund Interest Income	(589)
70	Cash carry over- surplus (deficit)	(113)
71	Surplus Fund Shortfall/(Excess)	13,714