Gmail

BENJAMIN CRUZ <speaker@senatorbjcruz.com>

MC Fwd: GPA WORK SESSION JAN 18 / MEETING MATERIALS

1 message

BENJAMIN CRUZ <speaker@senatorbjcruz.com>
To: 34th Guam Legislature Clerks <clerks@guamlegislature.org>
Cc: Rennae Meno <rennae@guamlegislature.org>

Thu, Jan 18, 2018 at 11:19 AM

1/18/18	1/18/18	Consolidated Commission On Utilities	GPA Work session January 18, 2018 /Materials."	34-18-1413

---------- Forwarded message ----------
From: **Bernadette Lou Sablan** <l.sablan@gpagwa.com>
Date: Thu, Jan 18, 2018 at 10:54 AM
Subject: GPA WORK SESSION JAN 18 / MEETING MATERIALS
To: "Andy Niven (ndynvn@yahoo.com)" <ndynvn@yahoo.com>, Angelica Perez <aperez@ambrokers.com>, Ann Borja - GWA <annborja@guamwaterworks.org>, "Annmane Muna (amuna@ambrokers.com)" <amuna@ambrokers.com>, Artemio S Perez <aperez@gpagwa.com>, BENJAMIN CRUZ <speaker@senatorbjcruz.com>, "Cameron Mulka (cimiculka@guampdn.com)" <cimiculka@guampdn.com>, "Charlene Calvo (charlene.calvo@lpehq.com)" <charlene.calvo@lpehq.com>, Chilang F Unpingco <cfejeran@gpagwa.com>, "Fred Horecky (horeckylaw@teleguam.net)" <horeckylaw@teleguam.net>, "Gaynor Delano (gdumat-ol@guam.gannett.com)" <gdumat-ol@guam.gannett.com>, Gilda Mafnas <gildam@guamwaterworks.org>, Governor's Office <joy.unpingco@guam.gov>, "Greg P. Cruz" <gpcruz@guamwaterworks.org>, Heidi Ballendorf <heidi@guamwaterworks.org>, "Jams Y Kim (pacguam@gmail.com)" <pacguam@gmail.com>, "Jeff Johnson (jeffcharjohnson@hotmail.com)" <jeffcharjohnson@hotmail.com>, Jennifer G Sablan <jsablan@gpagwa.com>, "Jessica Peterson (webmaster@theguamguide.com)" <webmaster@theguamguide.com>, "Jessy Gogue (ocp.mayor@gmail.com)" <ocp.mayor@gmail.com>, "Joe John Mantanona (joejohnmantanona@gmail.com)" <joejohnmantanona@gmail.com>, "John O'Connor (john@postguam.com)" <john@postguam.com>, "John Reigel (jriegel@brwncald.com)" <jriegel@brwncald.com>, Joyce N Sayama <jsayama@gpagwa.com>, Karla Tydingco <ktydingco@guamwaterworks.org>, "Louella Losinio (louella@postguam.com)" <louella@postguam.com>, Manny Apuron <mapuron@guamwaterworks.org>, "Maripaz N. Perez" <mnperez@gpagwa.com>, "Michael White (whitema@cdmsmith.com)" <whitema@cdmsmith.com>, "Nestor Licanto (nestor@kuam.com)" <nestor@kuam.com>, "PDN Newsroom (news@guampdn.com)" <news@guampdn.com>, "Peter Montinola (peter@isuguam.com)" <peter@isuguam.com>, Selma HG Blas <sblas@gpagwa.com>, "Telena Nelson (senatortcnelson@gmail.com)" <senatortcnelson@gmail.com>, "Therese Terlaje (senatorterlajeguam@gmail.com)" <senatorterlajeguam@gmail.com>

Hi GPA Stakeholders,

Attached is meeting materials for tonight's GPA Work Session.

GL# 34-18-1413
Speaker Benjamin J.F. Cruz

JAN 18 2018
Time: 11:19 AM PM File No.
Received By:

Showtime is 4 p.m.; Meeting time is 4:30

Best,

Lou

B. Lou Sablan

Board Secretary

Consolidated Commission on Utilities

Admin Asst., Legal Counsel, GPA

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2018 JAN 18 AM 11:29

OFFICE OF SPEAKER BENJAMIN J.F. CRUZ

Committee on Appropriations and Adjudication

I Mina'bente Kuatro na Liheslaturan Guahan

Guam Congress Building | 163 Chalan Santo Papa | Hagatna, GU 96910

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GPAWS 1.18.18.pdf
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1413

CONSOLIDATED
COMMISSION ON UTILITIES
Guam Power Authority • Guam Waterworks Authority
P.O.BOX 2977 • Agana,Guam 96932

GUAM POWER AUTHORITY WORK SESSION

CCU Conference Room

4:30 p.m., January 18, 2018

AGENDA

1. **ISSUES FOR DECISION**
   - 1.1 Power Purchase Agreement Phase II Renewables / Resolution 2018-01
   - 1.2 Bond Refinancing Savings Utilization / Resolution 2018-02
   - 1.3 Piti Substation 115kV GIS Major Maintenance / Resolution 2018-03
2. **GM REPORT**
   - 2.1 Updates
3. **ISSUES FOR DISCUSSION**
   - 3.1 CY2018 Major Project Updates
   - 3.2 CY2018 Outage Reduction Program
4. **DIVISION REPORTS**
   - 4.1 Administration: Customer Service, HR, Procurement
   - 4.2 Engineering & Technical: Engineering, IT, Planning & Regulatory, SPORD
   - 4.3 Finance Reports
   - 4.4 Operations: Facilities, Generation, PSCC, T&D, Transportation
   - 4.5 Public Information Office
5. **ANNOUNCEMENTS**
   - 5.1 Next Meeting: CCU Meeting – January 23
6. **ADJOURNMENT**

Approval of Power Purchase Agreement

KEPCO-LG-CNS Mangilao Solar, LLC

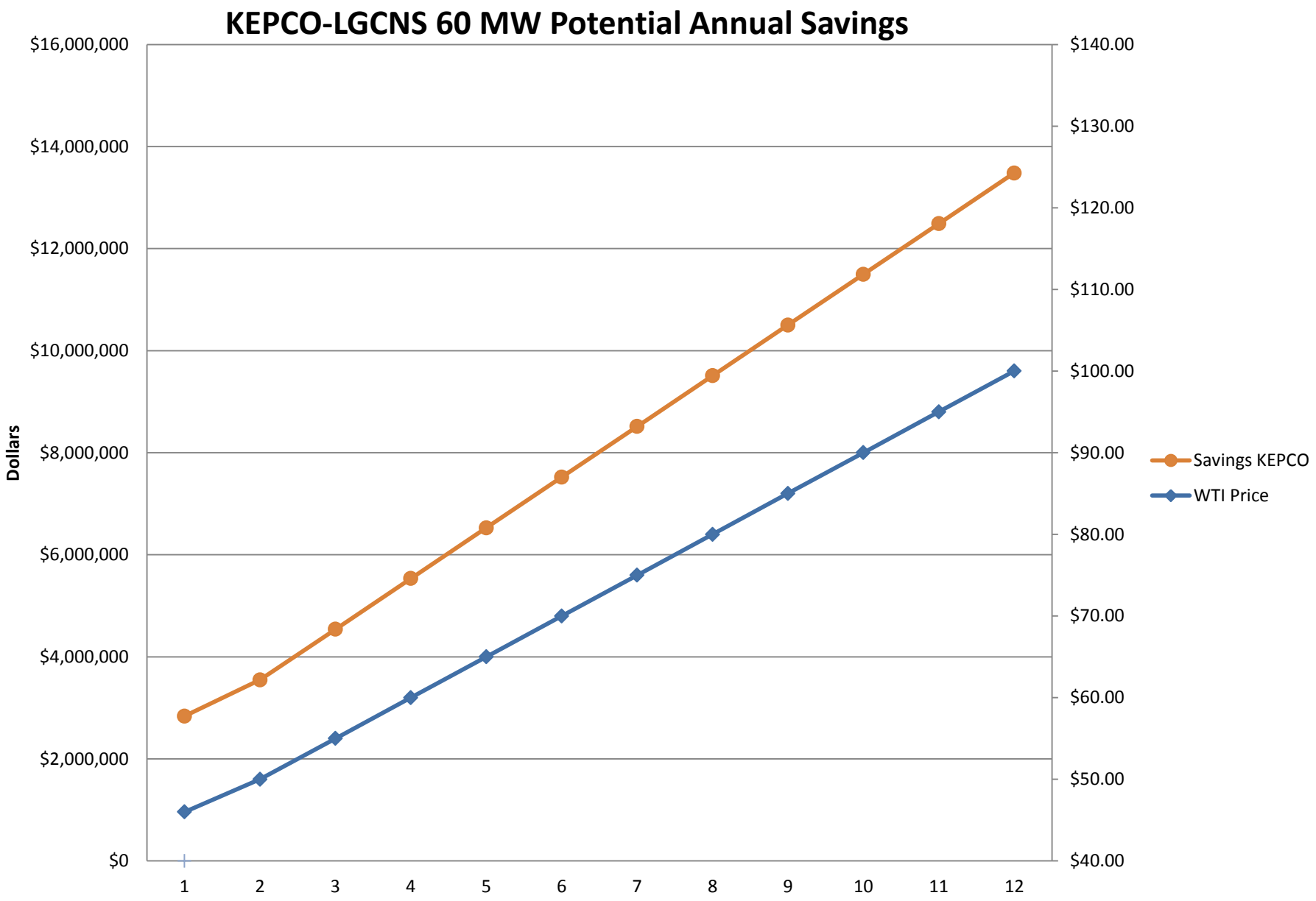
January 18, 2017

Requesting Approval - KEPCO-LG-CNS Mangilao Solar, LLC contract

- Award 60MW Power Purchase Agreement to KEPCO-LG-CNS Mangilao Solar, LLC which includes:
  - Two 30MW Solar Plants at Sasajyan
  - Install 32MW/32MWH ESS for Ramp Rate Control
  - Install 34.5 KV Underground Transmission Lines from Sasajyan (New Solar Plants) to Pagat Substation and Overhead Transmission Lines between Pagat and Macheche Substations
  - Install Differential Relays at GPA Substations as per System Impact Study (SIS) recommendation for system stability
  - Other Requirements Identified by Final SIS

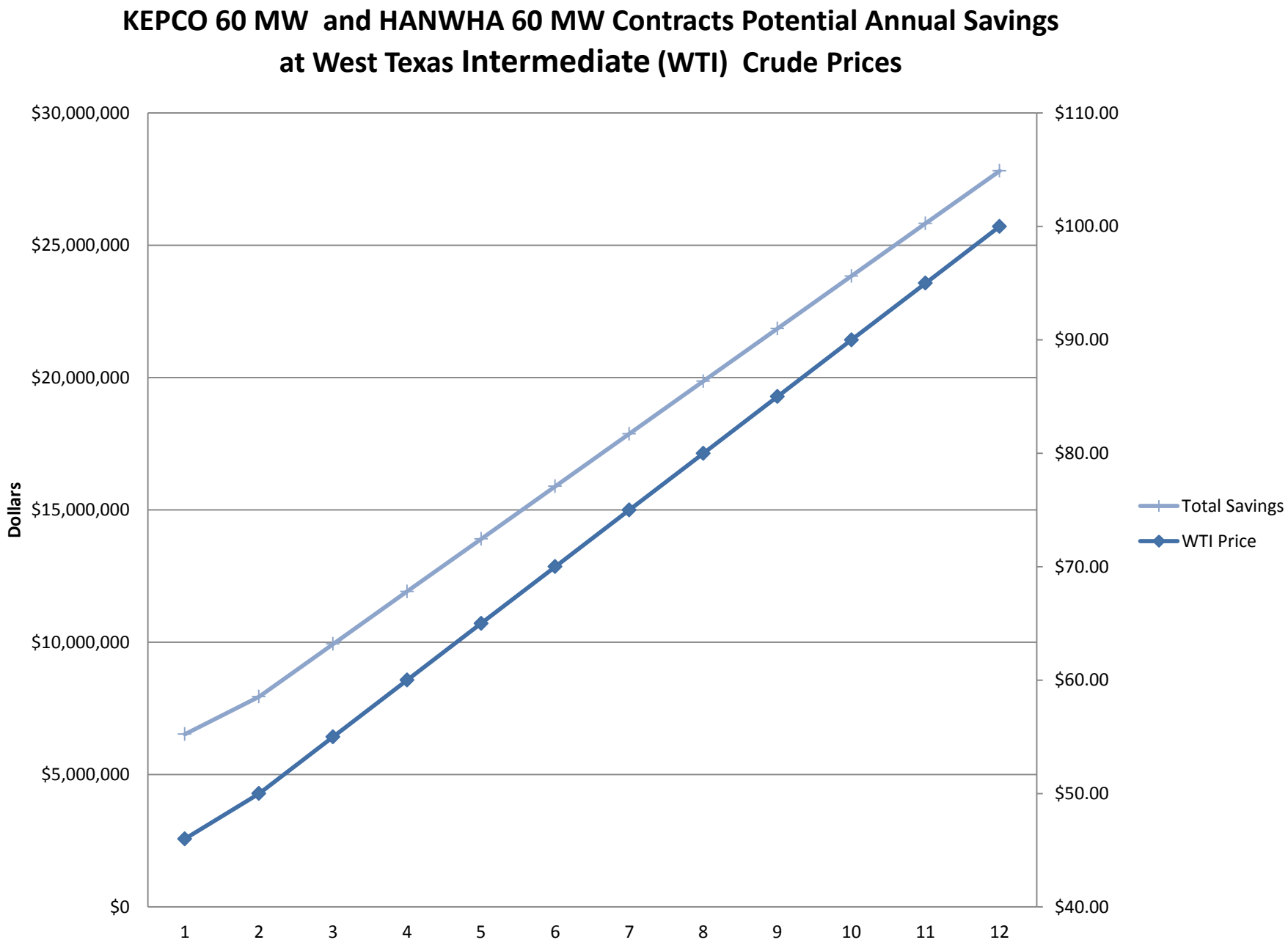
Power Purchase Agreement (PPA)

- Power Purchase agreement for KEPCO-LG-CNS Mangilao Solar, LLC for 60 MW of Solar PV
- 25 Year contract at starting price of $0.0855/KWH with an annual escalator of 1 %.
- With West Texas Crude at $65/ Barrel, savings estimated at about $6.5M annually
- Commercial Operation: Estimated Date April 2020
- Subject to PUC approval

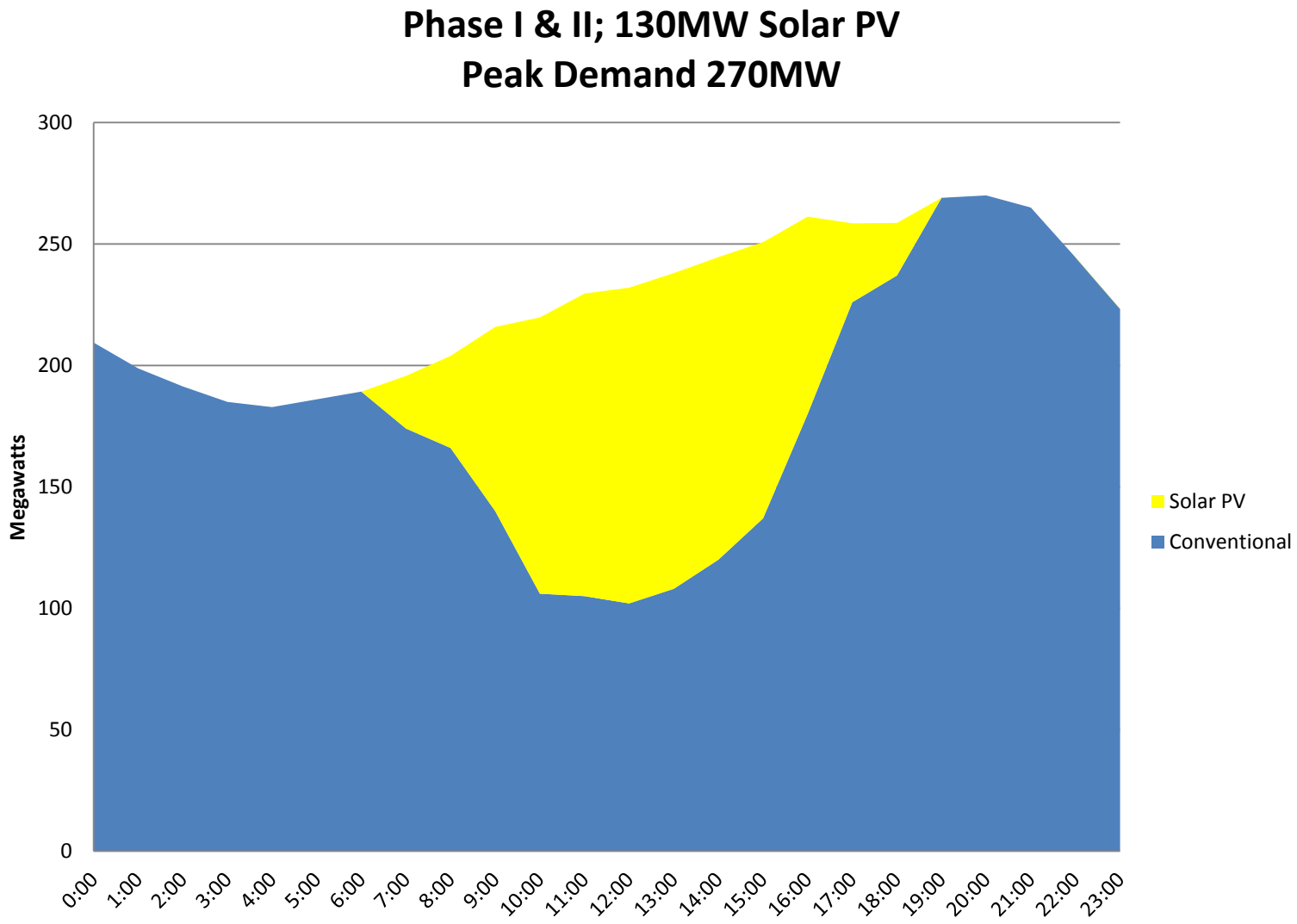

KEPCO-LGCNS 60 MW Potential Annual Savings
Dollars
$16,000,000
$14,000,000
$12,000,000
$10,000,000
$8,000,000
$6,000,000
$4,000,000
$2,000,000
$0
$140.00
$130.00
$120.00
$110.00
$100.00
$90.00
$80.00
$70.00
$60.00
$50.00
$40.00
1
2
3
4
5
6
7
8
9
10
11
12
Savings KEPCO
WTI Price

HANWHA 60 MW PPA Contract

- For CCU approval in February
- 60 MW contract at Dandan Site
- 25 Year Power Purchase Agreement
- 115 KV lines from Dandan to Apra Heights Substation to Piti Substation
- PPA nearing completion
- Annual savings with WTI at $65/Bbl. is about $7M


KEPCO 60 MW and HANWHA 60 MW Contracts Potential Annual Savings
at West Texas Intermediate (WTI) Crude Prices
Dollars
$30,000,000
$25,000,000
$20,000,000
$15,000,000
$10,000,000
$5,000,000
$0
$110.00
$100.00
$90.00
$80.00
$70.00
$60.00
$50.00
$40.00
1
2
3
4
5
6
7
8
9
10
11
12
Total Savings
WTI Price

Hourly System Dispatch



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

Issues for Decision

Resolution No. 2018-01:

RELATIVE TO APPROVAL OF THE PHASE II RENEWABLE ENERGY ACQUISITION POWER PURCHASED AGREEMENT FOR KEPCO-LG CNS MANGILAO SOLAR, LLC

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

GPA intends to meet its 2008 IRP goals and comply with Public Law 29-62 which sets renewable goals under the Renewable Portfolio Standards (RPS) with the Phase II projects. In January 2017 GPA obtained the price bids for GPA Multi-Step Bid No: GPA-070-16 for 60MW of Renewable Energy Resource capacity with ESS for ramp control. KEPCO-LG CNS Mangilao Solar, LLC., is one of the two (2) lowest responsive bidders (Hanwha Energy Corporation is the other one) with having two proposals for 30MW solar PV projects totaling 60 MW of solar PV capacity with ESS for ramp control. GPA and KEPCO-LG CNS Mangilao Solar, LLC have completed and agreed to commercial terms and conditions of the Power Purchase Agreements (PPA). GPA seeks approval to submit KEPCO-LG CNS Mangilao Solar, LLC's PPA to the PUC for their approval.

Where is the location?

The KEPCO_LGCNS 2x30MW solar projects are located at Sasajyan, Mangilao.

How much will it cost?

Please see attached table.

When will it be completed?

The Agreement is for 25 year term.

What is its funding source?

Funding source is LEAC.

KEPCO_LGCNS Price Proposal

Site A

Contract Year	Annual Price ($/MWH)	Guaranteed Net Annual Generation (MWH/YR)	Annual Price ($)
1	85.50	74,542.29	6,373,301.30
2	86.35	73,974.68	6,388,018.45
3	87.22	73,604.26	6,419,591.74
4	88.09	73,233.84	6,451,157.70
5	88.97	73,058.88	6,500,102.43
6	89.86	72,493.01	6,514,254.33
7	90.76	72,122.59	6,545,778.20
8	91.67	71,752.18	6,577,281.12
9	92.58	71,573.23	6,626,486.53
10	93.51	71,011.34	6,640,209.75
11	94.44	70,640.93	6,671,628.12
12	95.39	70,270.51	6,703,010.83
13	96.34	70,087.58	6,752,417.40
14	97.31	69,529.68	6,765,653.80
15	98.28	69,159.26	6,796,906.12

Contract Year	Annual Price ($/MWH)	Guaranteed Net Annual Generation (MWH/YR)	Annual Price ($)
16	99.26	68,788.84	6,828,106.93
17	100.25	68,601.94	6,877,649.88
18	101.26	68,048.01	6,890,337.29
19	102.27	67,677.59	6,921,358.30
20	103.29	67,307.18	6,952,310.69
21	104.33	67,116.29	7,001,919.62
22	105.37	66,566.34	7,013,991.65
23	106.42	66,195.92	7,044,711.02
24	107.49	65,825.51	7,075,343.38
25	108.56	65,630.64	7,124,941.98

Site B

Contract Year	Annual Price ($/MWH)	Guaranteed Net Annual Generation (MWH/YR)	Annual Price ($)
1	85.50	74,542.29	6,373,301.30
2	86.35	73,974.68	6,388,018.45
3	87.22	73,604.26	6,419,591.74
4	88.09	73,233.84	6,451,157.70
5	88.97	73,058.88	6,500,102.43
6	89.86	72,493.01	6,514,254.33
7	90.76	72,122.59	6,545,778.20
8	91.67	71,752.18	6,577,281.12
9	92.58	71,573.23	6,626,486.53
10	93.51	71,011.34	6,640,209.75
11	94.44	70,640.93	6,671,628.12
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14	97.31	69,529.68	6,765,653.80
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18	101.26	68,048.01	6,890,337.29
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21	104.33	67,116.29	7,001,919.62
22	105.37	66,566.34	7,013,991.65
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24	107.49	65,825.51	7,075,343.38
25	108.56	65,630.64	7,124,941.98

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

RESOLUTION NO. 2018-01

RESOLUTION RELATIVE TO APPROVAL OF THE PHASE II RENEWABLE ENERGY ACQUISITION AWARD TO KEPCO-LG CNS MANGILAO SOLAR, LLC., FOR 60 MW OF RENEWABLE ENERGY CAPACITY

WHEREAS, in May 2016 GPA announced GPA Multi-Step Bid No: GPA- 070-16 for 60MW of Renewable Energy Resource capacity with ESS for ramp control; and

WHEREAS, in January 2017 GPA obtained the price bids and KEPCO-LG CNS Mangilao Solar, LLC., is one of the two (2) lowest responsive bidders (Hanwha Energy Corporation is the other bidder) providing two proposals for 30MW solar PV projects totaling 60 MW of solar PV capacity with ESS for ramp control; and

WHEREAS, the responsive bidders provided price proposals for the energy and ramp controls to include interconnection costs of each 30MW proposal. **Exhibit A** provides a summary of the energy price proposals which shows the first year price for KEPCO-LG CNS Mangilao Solar, LLC is $85.50/$/MWH; and

WHEREAS, GPA evaluates bidder's price proposal against GPA's variable operating costs primarily made up of fuel costs; and

WHEREAS, GPA has determined that KEPCO-LG CNS Mangilao Solar, LLC proposals would provide substantial savings to GPA over the term of the contracts based on current and projected LEAC rates; and

WHEREAS, the table below represents the projected savings of potential award case **Exhibit B** contains case summaries; and

CASE	Description	Project Size	5 Year Projected Savings On Current LEAC ($115/MWH)	5 Year Projected Savings on Projected LEAC	Present Value Utility Cost Savings thru Contract Term
1	KEPCO Proposal 1&2 (60MW)	60 MW	$ 20,470,866	$43,331,390	$90,301,058

RESOLUTION NO: 2018-01

WHEREAS, GPA considers renewable energy as an effective hedge against rising fuel oil prices; and

WHEREAS, the bid prices proposed are an excellent fuel hedge as the bidders' energy prices are fixed with escalations no more than 1% annually for all proposals. **Exhibit C** summarizes GPA historical LEAC; and

WHEREAS, renewable energy is sustainable energy and good for the island; and

WHEREAS, Public Law 29-62 sets renewable goals under the Renewable Portfolio Standards (RPS); and

WHEREAS, the award of 120MW contracts including Hanwha Energy Corporation 60 MW project is projected to increase GPA's ratio of renewable energy to sales up to 26% by 2020. **Exhibit D** is a projected RPS outlook; and

WHEREAS, KEPCO-LG CNS Mangilao Solar, LLC has concurred with GPA recommendations from the system impact study which is incorporated in the contract documents; and

WHEREAS, GPA would like to proceed with an approval to award KEPCO-LG CNS Mangilao Solar, LLC a total of 60MW of renewable energy capacity contract subject to PUC approval.

NOW, THEREFORE, BE IT RESOLVED, by the CONSOLIDATED COMMISSION ON UTILITIES, the GOVERNING BODY of the GUAM POWER AUTHORITY as FOLLOWS:

1. The CCU authorizes GPA to petition the PUC for approval to award Phase II Renewable Acquisition Bid of two 30MW proposals totaling 60MW to KEPCO-LG CNS Mangilao Solar, LLC as required under the PUC Procurement Protocol.
2. The CCU authorizes GPA to contract KEPCO-LG CNS Mangilao Solar, LLC for renewable energy subject to PUC approval.

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

RESOLUTION NO: 2018-01

DULY AND REGULARLY ADOPTED AND APPROVED THIS 23RD DAY OF JANUARY 2018.

Certified by:	Attested by:
_____	_____
JOSEPH T. DUENAS	**J. GEORGE BAMBA**
Chairperson	Secretary
Consolidated Commission on Utilities	Consolidated Commission on Utilities

I, J. George Bamba, 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: _____

EXHIBIT A

Summary of Bid Proposals

Contract Year	Proposal 1		Proposal 2	
	Annual Price ($/MWH)	Guaranteed Net Annual Generation (MWH/YR)	Annual Price ($/MWH)	Guaranteed Net Annual Generation (MWH/YR)
1	$ 85.50	74,542.29	$ 85.50	74,542.29
2	$ 86.35	73,974.68	$ 86.35	73,974.68
3	$ 87.22	73,604.26	$ 87.22	73,604.26
4	$ 88.09	73,233.84	$ 88.09	73,233.84
5	$ 88.97	73,058.88	$ 88.97	73,058.88
6	$ 89.86	72,493.01	$ 89.86	72,493.01
7	$ 90.76	72,122.59	$ 90.76	72,122.59
8	$ 91.67	71,752.18	$ 91.67	71,752.18
9	$ 92.58	71,573.23	$ 92.58	71,573.23
10	$ 93.51	71,011.34	$ 93.51	71,011.34
11	$ 94.44	70,640.93	$ 94.44	70,640.93
12	$ 95.39	70,270.51	$ 95.39	70,270.51
13	$ 96.34	70,087.58	$ 96.34	70,087.58
14	$ 97.31	69,529.68	$ 97.31	69,529.68
15	$ 98.28	69,159.26	$ 98.28	69,159.26
16	$ 99.26	68,788.84	$ 99.26	68,788.84
17	$ 100.25	68,601.94	$ 100.25	68,601.94
18	$ 101.26	68,048.01	$ 101.26	68,048.01
19	$ 102.27	67,677.59	$ 102.27	67,677.59
20	$ 103.29	67,307.18	$ 103.29	67,307.18
21	$ 104.33	67,116.29	$ 104.33	67,116.29
22	$ 105.37	66,566.34	$ 105.37	66,566.34
23	$ 106.42	66,195.92	$ 106.42	66,195.92
24	$ 107.49	65,825.51	$ 107.49	65,825.51
25	$ 108.56	65,630.64	$ 108.56	65,630.64

EXHIBIT B

Proposal Evaluation Summary

CASE	Description	Project Size	5 Year Projected Savings On Current LEAC ($115/MWH)	5 Year Projected Savings on Projected LEAC	Present Value Utility Cost Savings* thru Contract Term
1	KEPCO Proposal 1&2 (60MW)	60 MW	$ 20,470,866	$ 43,331,390	$ 90,301,058

CASE 1 - KEPCO Proposal 1&2 (60MW)

5 Year Sample Calculation of Project Costs & Savings

	Contract Year	Year 1	Year 2	Year 3	Year 4	Year 5	TOTALS
1	KEPCO Proposal 1 Energy Rate ($/MWH)	85.50	86.35	87.22	88.09	88.97	
2	Energy Guarantee (MWH)	74,542.29	73,974.68	73,604.26	73,233.84	73,058.88	
3	KEPCO Proposal 2 Energy Rate ($/MWH)	85.50	86.35	87.22	88.09	88.97	
4	Energy Guarantee (MWH)	74,542.29	73,974.68	73,604.26	73,233.84	73,058.88	
5	Phase II Energy Costs (60MW)	$12,746,603	$12,776,037	$12,839,183	$12,902,315	$13,000,205	**$ 64,264,343**
6	Current LEAC Rate[1] ($/MWH)	115	115	115	115	115	
7	Current Energy Costs	$17,144,727	$17,014,176	$16,928,980	$16,843,784	$16,803,542	$ 84,735,209
8	Proposed Savings	**$ 4,398,125**	**$ 4,238,139**	**$ 4,089,797**	**$ 3,941,469**	**$ 3,803,337**	**$ 20,470,866**
9							
10	Year	2019	2020	2021	2022	2023	TOTALS
	Projected LEAC Rate[2] ($/MWH)	122.27	140.02	154.63	154.03	159.65	
	Projected Energy Costs	$18,228,695	$20,716,064	$22,762,713	$22,560,701	$23,327,561	$ 107,595,733
11	Proposed Savings	**$ 5,482,092**	**$ 7,940,027**	**$ 9,923,529**	**$ 9,658,385**	**$10,327,356**	**$ 43,331,390**
12							
13							

STRATEGIST CASE SUMMARY

	Base Case (No Phase II)	Case 1 (60MW)	SAVINGS
Present Value Utility Cost[3] ($000)	6,896,417	6,806,116	90,301

Notes:

1. The Currrent LEAC is used in this case evaluation to demonstrate minimum savings potential with $115/MWH LEAC rate presently proposed for next LEAC period.

2. Projected LEAC is based on STRATEGIST software output that analyzes genernation costs for various generation resources and its operating characteristics. This LEAC is based on load and fuel forecasts done by LEIDOS in 2016.

3. Present Value Utility Cost is an evaluation of generation operating costs in the STRATEGIST software. This is used to determine cost impact of generation resources and their operation variables (efficiency, fuel costs, capacity, etc.) based on energy requirements.

EXHIBIT C
Historical LEAC Summary

EFFECTIVE DATES	FUEL RECOVERY RATE ($ per Kwh)
10/01/00	0.053613
04/01/01	0.053613
10/01/01	0.048625
04/01/02	0.042901
10/01/02	0.048831
04/01/03	0.048831
10/01/03	0.062333
04/01/04	0.059753
10/01/04	0.059753
01/01/00	0.073010
01/01/00	0.088918
01/01/00	0.098589
02/01/07	0.108893
08/13/07	0.123957
03/01/08	0.150467
06/01/08	0.170440
10/01/08	0.187750
12/01/08	0.171050
02/01/09	0.157630
05/01/09	0.136450
08/01/09	0.129670
02/01/10	0.150460
08/31/10	0.124650
02/01/11	0.161530
08/01/11	0.192220
02/01/12	0.191980
04/01/12	0.192310
02/01/13	0.209271
08/01/13	0.182054
02/01/14	0.172986
08/01/14	0.176441
11/01/14	0.146666
02/01/15	0.102054
08/01/15	0.104871
02/01/16	0.086613
08/01/16	0.086613
02/01/17	0.105051
08/01/17*	0.115725

**Proposed LEAC Rate*

EXHIBIT D

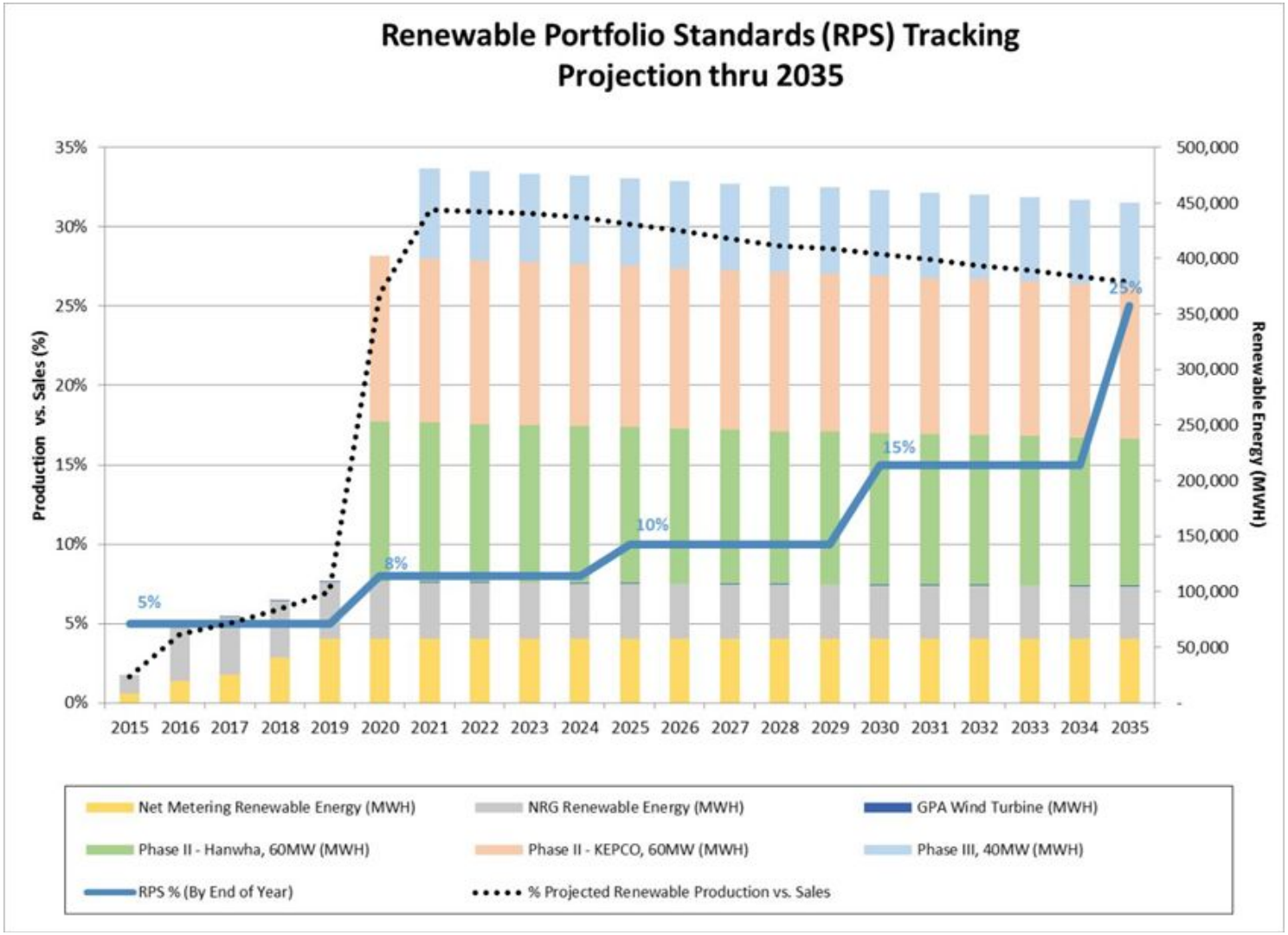
Projected Renewable Energy & Renewable Portfolio Standards (RPS) for 120 MW Phase II Award

	Net Metering Renewable Energy (MWH)	NRG Renewable Energy (MWH)	GPA Wind Turbine (MWH)	Phase II - Hanwha, 60MW (MWH)	Phase II - KEPCO, 60MW (MWH)	Phase III, 40MW (MWH)	Total Renewable Production (MWH)	GPA Total Sales (MWH)	% Projected Renewable Production vs. Sales	RPS % (By End of Year)
2015	8,034	17,597					25,630	1,536,927	2%	5%
2016	19,559	48,221	474				68,253	1,584,685	4%	5%
2017	25,271	51,627	482				77,380	1,546,044	5%	5%
2018	40,393	51,412	482				92,287	1,554,108	6%	5%
2019	57,629	51,133	482				109,244	1,557,331	7%	5%
2020	*57,629*	50,992	482	144,010	149,085		402,198	1,558,272	26%	8%
2021	*57,629*	50,601	482	143,662	147,949	80,510	480,834	1,547,800	31%	8%
2022	*57,629*	50,393	482	142,490	147,209	80,175	478,377	1,544,574	31%	8%
2023	*57,629*	50,083	482	141,730	146,468	79,740	476,131	1,544,540	31%	8%
2024	*57,629*	49,781	482	140,970	146,118	79,520	474,499	1,550,854	31%	8%
2025	*57,629*	49,599	482	140,612	144,986	78,911	472,219	1,566,472	30%	10%
2026	*57,629*	49,391	482	139,448	144,245	78,585	469,780	1,577,646	30%	10%
2027	*57,629*	49,122	482	138,688	143,504	78,102	467,527	1,597,005	29%	10%
2028	*57,629*	48,987	482	137,386	143,146	77,631	465,262	1,614,448	29%	10%
2029	*57,629*	48,612	482	137,560	142,023	77,348	463,654	1,620,517	29%	10%
2030	*57,629*	48,411	482	136,404	141,282	77,023	461,230	1,631,977	28%	15%
2031	*57,629*	48,147	482	135,642	140,541	76,604	459,045	1,644,069	28%	15%
2032	*57,629*	48,017	482	134,880	140,175	76,393	457,577	1,661,486	28%	15%
2033	*57,629*	47,649	482	134,504	139,059	75,808	455,131	1,670,464	27%	15%
2034	*57,629*	47,451	482	133,356	138,319	75,495	452,731	1,684,195	27%	15%
2035	*57,629*	47,191	482	132,592	137,578	75,083	450,555	1,698,373	27%	25%

Notes:

1. Sales is from 2016 forecast for 2017-2035 (LEIDOS Jan. 2016 Forecast)
2. Net Metering projection is from LEIDOS Forecast for 2017 thru 2019 and fixed thereafter
3. NRG (Phase I) production is based on contract guarantees from 2017 thru 2035
4. Phase II is based on Project Guarantees **for 120MW**. Phase III renewable projections are based NRG contract guarantees.
5. GPA wind turbine assumes average capacity factor since commissioning (20%) from 2017 thru 2035
6. DSM values are not included.

EXHIBIT E


Renewable Portfolio Standards (RPS) Tracking
Projection thru 2035
Production vs. Sales (%)
Renewable Energy (MWH)
35%
30%
25%
20%
15%
10%
5%
0%
500,000
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
5%
8%
10%
15%
25%
2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035
Net Metering Renewable Energy (MWH)
NRG Renewable Energy (MWH)
GPA Wind Turbine (MWH)
Phase II - Hanwha, 60MW (MWH)
Phase II - KEPCO, 60MW (MWH)
Phase III, 40MW (MWH)
RPS % (By End of Year)
% Projected Renewable Production vs. Sales

Bond Refinancing

PL 34-69

- Section 2(h) – GPA shall notify I Liheslatura within sixty (days) of refinancing of it intent and plan regarding the savings achieved from refinancing.

Summary of Savings:

- Final Par Amount of Refunding: $148,670,000
- Final Par Amount of Refunded: $150,440,000
- Total Cash Flow Savings: $11,528,439
- Annual Cash Savings: $501,236
- NPV Savings: 5.17%
- All-In True Interest Cost: 4.12

Bond Refinancing - Continued

- Reduction in debt services from 2018 to 2021: $1,482,326
- Reduction from 2022 on to be use to offset annual cost of new power plant.

Recommendations for $1,482,326 Savings:

- DSM – Replenish Existing Rebate Program
- DSM – Revolving Short Term Reimbursement Fund-Zero Interest charged
  - Reduces consumption
  - Maintain quality of life
  - Part of money saved to be used to reimburse GPA revolving fund

Example of Reimbursement Program

Residential Customers Demographics:

Assume FY 2918 Average Cost = $0.25/Kwh

KWH RANGE	Residential	Min. Monthly $	Max Monthly. $
Below 0	884	-	-
0-350	7,403	-	$87.50
351-500	4,291	$87.75	$125.00
501-750	7,681	$125.25	$187.50
751-1000	7,221	$187.75	$250.00
1001-2000	13,887	$250.25	$500.00
2001-3000	2,215	$500.25	$750.00

Targeted Assets:	
1. LED Lighting	
2. High Efficiency Air Conditioning Units	
3. Other High Savings Initiatives	

Customer Average Monthly Kwh:	**1000**
Investment Required:	$1,000
24 Month Payments	$42

Current Bill:	**$250**
Monthly Estimated Savings:	$68
Estimated Billing with new A/C	$182
Add Investment Re-payment	$42
Approximate New Bill Monthly	**$224**

1st 24 Months Savings:	**$632**
Annual Savings Thereafter	**$816**

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

Issues for Decision

Resolution No. 2018-03:

Relative to <u>Authorize Expenditures for the Piti 115KV GIS Major Maintenance</u>

What is the project's objective and is it necessary and urgent?
To perform an overdue detailed 12-year maintenance and inspection for the Piti 115KV Gas Insulated Switchgear (GIS). The maintenance work is necessary for compliance with the manufacturer's recommendations. The insulating medium for the switchgear is SF6 gas, and under certain conditions such as breaker operations (trip/close), sulfuric acid may be produced which may lead to severe deterioration of internal parts.

The GIS The Piti 115 kV GIS is a critical substation interconnecting the MEC Plant Units 8 and 9 to the power grid.

Where is it at?
Piti

How much will it cost?
The required services will cost $2,507,300.

Basic Bid

A1	Mobilization / Demobilization	436,800
A2	GIS - Initial Testing, Assessing, and Reporting	381,000
A3	GIS - Inspection, Servicing, Replace, Maintenance, Gauge Calibration	1,061,000
A4	Reuse and Recycling of Removed SF6 Gas	21,000
A5	Crane Repair	13,000
A6	Training Course - Operation and Maintenance	72,000
A7	Final Testing, Commissioning, Reporting, and Re-Certification	212,000
	Total Basic Bid Cost	$ 2,196,800

Additive Bid

B1	New SF6 Gas	39,000
B2	Disposal of Removed SF6 Gas	12,500
B3	GIS OEM Spare Parts, Consumables, and Special Tools	165,000
B5	New Fixed Cage Ladder and Landing Platform	94,000
	Total Additive Bid Cost	$ 310,500

Total Bid Cost **$ 2,507,300**

Construction Management Cost/ T&D Support	$	130,000
Total Requested Cost	**$**	**2,637,300**

When will it be completed?
Time delivery to complete work is 10 months upon receipt of PO.

What is its funding source?
GPA 2014 Revenue-Bonds fund.

The RFP/BID responses:
AYM International Inc., the only bidder, submitted quote for GPA's consideration under Multi-Step Re-Bid Invitation No. GPA-027-17. The initial bid had no bidders.

AYM International was determined to be a technically qualified and responsive bidder.

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

Resolution No. 2018-03
AUTHORIZING THE GUAM POWER AUTHORITY TO PETITION PUC FOR APPROVAL OF PITI SUBSTATION 115 KV GIS MAINTENANCE PROJECT AND TO CONTRACT REQUIRED SERVICES

WHEREAS, the Piti Substation 115 kV Gas Insulated Switchgear (GIS) was commissioned in 1999; and

WHEREAS, the insulating medium of the 115 kV Substation is SF6 gas, which under certain conditions may produce sulfuric acid, leading to severe deterioration of internal parts; and

WHEREAS, maintenance of the GIS equipment is critical to ensure functionality to allow MEC Plant Units 8 and 9, GPA's most efficient generating units, to connect to the IWPS; and

WHEREAS, the project will overhaul the Piti 115 Kv GIS Maintenance project as part of the 12-year maintenance schedule; and

WHEREAS, the Procurement Office has provided adequate public announcement for the required services for the Piti 115 Kv GIS Major Maintenance through a Multi-Step Re-Bid Invitation No. GPA-027-17 providing the project specifications and information required of each offeror; and

WHEREAS, due to the highly specialized nature of the work and limited local resources, only one vendor AYM International, Inc. submitted a proposal during the re-bid process for GPA's consideration; and

WHEREAS, GPA's Evaluation Committee has determined AYM International Inc. to be technically qualified based on meeting the Step One- Technical Proposal Evaluation criteria and whose bid on Step Two – Price Proposal Evaluation submitted a basic bid totaling $2,196,800 for GPA's consideration and additive bids totaling $2,507,300; and

WHEREAS, the 2014 GPA Revenue Bonds initially allocated funding of $700,000, and GPA has reallocated 2014 Bond Funds to fund an additional $1,937,300 for additional required items for the project;

NOW, THEREFORE, BE IT RESOLVED, by the Consolidated Commission on Utilities as follows:

1. After careful consideration, the Consolidated Commission on Utilities finds the procurement of the required services for the Piti 115 Kv GIS Major Maintenance project to be reasonable and prudent.

2. The General Manager of GPA is hereby authorized to petition the PUC to reallocate 2014 Revenue Bonds for the Piti 115 kV GIS Major Maintenance project and for the award of the contract.

2. Upon PUC's approval, the General Manager of the GPA is hereby authorized an increase in obligating authority up to $2,507,300 for the purpose of procuring the required services from AYM International, Inc.

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

DULY and REGULARLY ADOPTED AND APPROVED THIS 23rd DAY OF JANUARY, 2018.

Certified by:	**Attested by:**
_____	_____
JOSEPH T. DUENAS	**J. GEORGE BAMBA**
Chairman	**CCU Board Secretary**

I, J. George Bamba, 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: 1
Number of Bids Received: 1

*PHASE II *

PURCHASES & STORES DIVISION
GUAM POWER AUTHORITY
ABSTRACT OF BIDS

Invitation Number: RFBID GPA-027-17
Opening Date: 11/29/17
Opening Time: 2:00 PM

Description of Supplies or Services: PITI 115KV GIS MAJOR MAINTENANCE

	BIDDER	Acceptance Time (Days)	DISCOUNT	ITEM NO. / QTY / UNIT / DELIVERY / MFG							
1/	AVAN International Inc.		Basic		2,197,300.00						
			additive		1,285,500.00						

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 hereon.

(Signature)

Tabulated By: Janet D. Sajeran

Date: 11/29/17

APPROVAL OF AWARD(S) (Bidder(s) and Price(s) circled above)

BASIS FOR AWARD

- ☐ Lowest Responsive Bidder
- ☐ Tie Bid
- ☐ Only Bid
- ☐ Other Than Lowest Responsive Bidder (See explanation on reverse hereof or attached)

Number of Awards (Contractors)

NAMES OF PERSONS PRESENT AT THE BID OPENING AND WHOM THEY REPRESENT
(It is not necessary to fill in this portion if data is recorded elsewhere)

JOHNNY QUINTO GPA ENGINEERING EXT. 3024
JOHN N. PABUAYAN GPA ENGINEERING EXT. 3006
[illegible] Co AYM International

ADMINISTRATIVE STATEMENT ***(When applicable)***

DAWN F.

GUAM POWER AUTHORITY
ATURIDAT ILEKTRESEDAT GUAHAN
P O BOX 2977, HAGATNA, GUAM 96932-2977

GUAM POWER AUTHORITY RECEIVED BY: TIME: 10:04 AM NOV 06 2017 EXECUTIVE OFFICE POWER TO SERVE

November 1, 2017

TO: Supply Management Administrator

FROM: Bid Evaluation Committee

SUBJECT: **Step One – Technical Proposal Evaluation Recommendation**
Re: Multi-Step Re-Bid GPA-027-17
Piti 115kV GIS Major Maintenance

The bid evaluation committee has completed reviewing vendor's proposal for Step One – Technical Proposal Evaluation of the Multi-Step Re-Bid GPA-027-17. Only one (1) vendor submitted its bid, which is AYM International Inc. The committee evaluated the proposal using a scoring and evaluation criteria form below.

QUALITATIVE PROPOSAL SCORING WORKSHEET

ITEM	DESCRIPTION	WEIGHTED SCORE (%)
1	Scoring Worksheet 1	97
2	Scoring Worksheet 2	80
3	Scoring Worksheet 3	98
4	Scoring Worksheet 4	90
5	Scoring Worksheet 5	92
	AVERAGE	**91.4 (Acceptable)**

- Proposals that scored greater than or equal to 80 percent are deemed acceptable.
- Proposals that scored between 75 and 79 percent are deemed potentially acceptable.
- Proposals scoring below 75 percent are deemed unacceptable.

Based on the scoring worksheet, vendor's proposal is deemed acceptable (See attachment for specifics). The Committee, hereby, recommends that GPA proceed with Step Two – Evaluation of Priced Proposal for the ***Acceptable Proposal***.

JOHNNY QUINTO
Special Projects Engineer

JERALD TAITANO
Supervisor, T&D

JOHN PABUNAN
Special Projects Engineer

IRWIN LOYOLA, P.E.
Supervisor, Engineering

VINCENT PANGELINAN, P.E.
Superintendent, T&D

Concurred by:

JOHN J. CRUZ, JR., P.E
AGMETS

11-3-2017
Date

[✓] Approved [ ] Disapproved

JOHN M. BENAVENTE, P.E.
General Manager

11/6/17
Date

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

TO: **Consolidated Commission on Utilities**

FROM: **General Manager**

DATE: **January 18, 2018**

SUBJECT: **General Manager's Report**

1. **Generation System Update:**

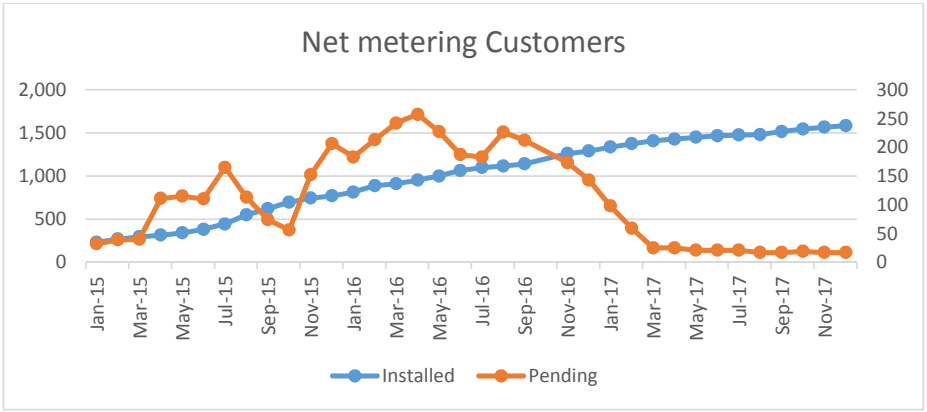
- The following summarizes the expected situation for January 2018. The peak demand in January 2018 has been 240MW compared to the highest peak demand in January 2017 of 232MW. This increase seems to indicate the system peak demand and therefore its energy sales will continue to increase in 2018.

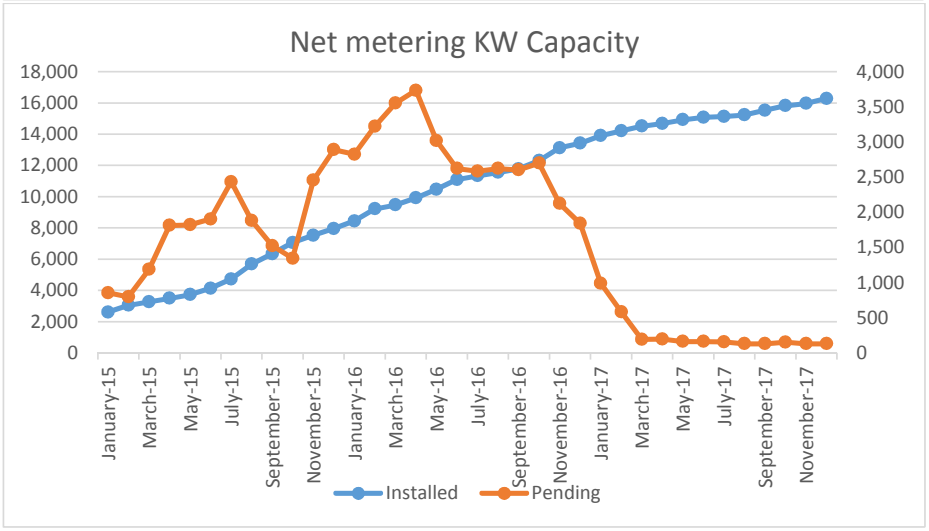
▪ **January 2018 Capacity Available:**	**384 MW**
▪ **January 2018 Projected Demand**	**242 MW**
▪ **Available Reserve Margin**	**142 MW**
▪ **Two Largest Units Capacity**	**117 MW**
▪ **Reserve less two largest units**	**25 MW**

This table is provided to show that without a new power plant, GPA will not be able to meet load growth by 2022. Furthermore, as shown, because we lack adequate base load capacity, GPA's fuel related cost to provide additional energy to new customers will continue to drive its total energy cost higher because energy production would come from costlier less efficient standby units. The lack of new units which could work with intermittent renewables will result in limited solar PV additions into the grid thereby limiting cost saving opportunities.

Summary of System Generating Capacity With No New Baseload:					**With New 180MW**
Description	**FY 2015**	**FY2017**	**FY2018**	**FY2021**	**FY2022**
Baseload MW Capacity	299	208	208	208	268
Emergency/Standby Capacity	120	200	200	200	200
Total MW Capacity	**419**	**408**	**408**	**408**	**468**
Peak MW Demand	249	261	266	283	283
Reserve Margin	170	147	142	125	185
Total Two Largest Units	132	120	120	120	88
Reserve Less Two Largest Units	**38**	**27**	**22**	**5**	**97**
% Baseload Capacity	**71.4%**	**51.0%**	**51.0%**	**51.0%**	**57.3%**
% Energy from Baseload	98.0%	80.0%	62.2%	62.2%	72.6%
% Energy from Renewables	0.0%	3.5%	3.5%	26.4%	26.4%
% Energy from Emergency/Peaker	**2.0%**	**16.5%**	**16.5%**	**11.4%**	**1.0%**

2. Net metering Summary Ending December 2017:





Estimated Net Metering Impact FY2009 to FY2017:

Fiscal Year	Amount
FY 2009	$1,657
FY 2010	$8,483
FY 2011	$18,177
FY 2012	$58,546
FY 2013	$278,025
FY 2014	$352,157
FY 2015	$856,921
FY 2016	$2,200,795
FY 2017	$2,828,835
Total:	**$6,603,596**

The continued growth in sales from non-net metering customers has mitigated revenue decline due to net metering customers

3. Renewable Energy Production Summary Thru December 2017:

Energy Production Source:	Kwh Production	Oil Barrels Avoided	Fuel Cost Avoided
NRG Total Production beginning Oct 2015	107,114,628	179,097	$9,850,362
Net Metering Estimated Production beginning Jan 2015	50,302,831	84,107	$4,625,896
Wind Power Production beginning Jan 2016	790,121	1,321	$72,660
Renewables Total:	**158,207,580**	**264,526**	**$14,548,918**
System Heat Rate Kwh/Gal	14.2		
System Fuel $/Bbl	$55.00		

4. Demand Side Management (DSM) Program Expenses Thru December 31, 2017:

All Expenses – Fiscal Year

Description	FY16	FY17	FY18 as of December'17	Total to Date
Regular/OT Pay	$11,348.80	$22,256.00	$4,690.09	$38,294.89
Other Contractual	$28,278.50	$73,010.05	0.0	$101,288.55
Paid Rebates-Split AC	$154,700.00	$557,275.00	$336,025.00	$1,048,000.00
Paid Rebates-Central AC	$3,400.00	$8,200.00	$800.00	$12,400.00
Paid Rebates-Washer/Dryer	$2,800.00	$7,425.00	$1,800.00	$12,025.00
Total Expenses	200,527.30	$668,166.05	$343,315.09	$1,212,008.44

2

5. **Phase II Renewables:** The OPA has upheld GPA's decision for the award of 120MW of solar PV to KEPCO and Hanwha. A subsequent protest filed in the Superior Court of Guam was subsequently withdrawn. GPA can now proceed obtaining CCU and PUC approvals for the two 60 MW contracts. I ask the CCU and the PUC to expedite their awards in consideration of the substantial delays that have occurred. These two renewable contracts will provide substantial savings to the ratepayers through LEAC.

6. **Phase III Renewables Bid**: The bid has been issued. The bid request is for about 40MW of solar PV renewables to be constructed on Navy leased land. The energy produced would be stored in batteries during the day and released at nighttime to meet peak time load. The bid price opening date for acceptable proposals is set for April 17, 2018.

7. **USEPA Consent Decree:** We met with the USEPA Region 9 Acting Administrator on December 18th. The meeting was an opportunity for us to update the administrator on progress made towards compliance. Work continues towards a consent decree which may be completed within the next six months.

8. **2010 Bonds Re-financed:** The 2010 bonds were successfully re-financed in December and has resulted in an annual debt service payment reduction of $501,236.00. We would like to thank everyone for their work in achieving the savings for our ratepayers. GPA would like to inform the Legislature of the intended use of the debt service reduction within 60 days after refinancing.

   Final Par Amount of Refunding Bonds: $148,670,000
   Final Par Amount of Refunded Bonds: $150,440,000 (i.e., all outstanding)
   Total Cash Flow Savings: $11,528,439
   Average Annual Cash Flow Savings: $501,236 (PUC minimum: $300,000)
   Net Present Value Savings: $7,777,917
   NPV Savings / Refunded Par Amount: 5.17% (Legislative minimum: 2%)
   All-In True Interest Cost: 4.12% (PUC maximum 4.32%)
   All thresholds required by the various approvals of the various agencies have been met.

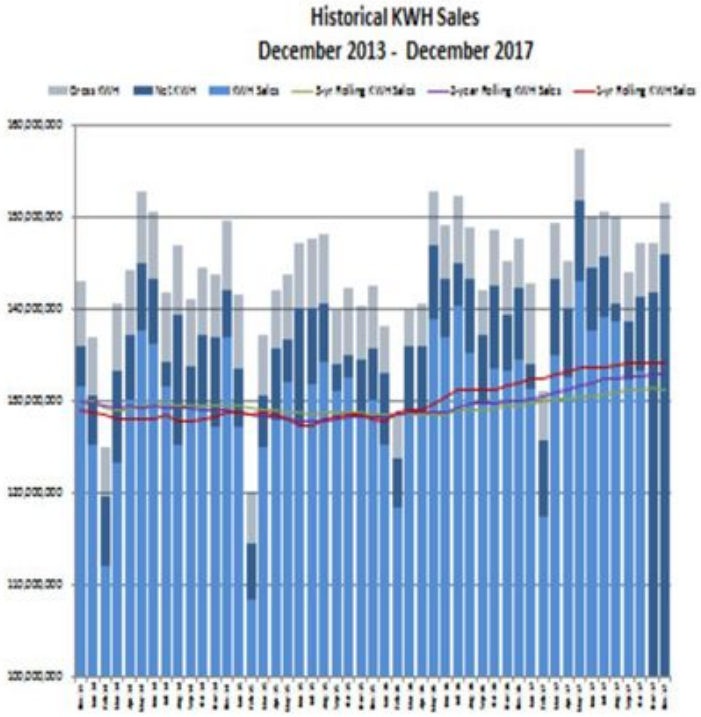
9. **January 2018 PUC Agenda:**
   - GPA Docket, LEAC adjustment for February 2018 thru July 2018 period

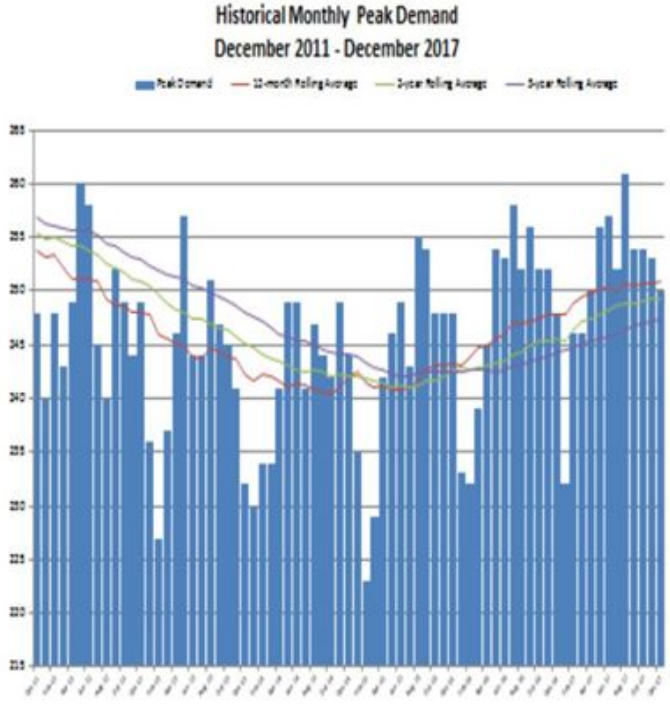
10. **New Power Plant Procurement:**
    a. GPA has issued the multi-step bid for the new power plant. GPA plans to have a short list of qualified bidders by early April. The successful short list will then be provided the technical specifications of the new plant for them to submit their proposal and price by this summer.

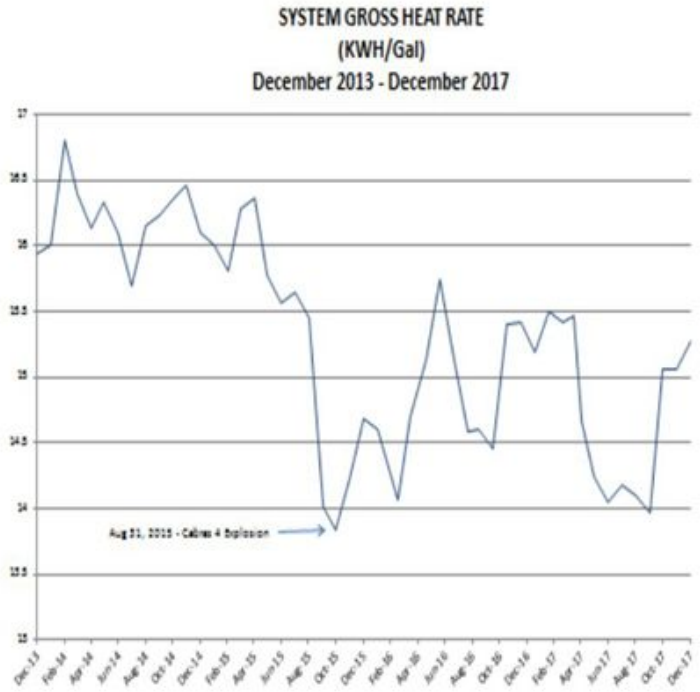
    b. The rezoning efforts for the land for the new power plant will continue. Senator Ada has introduced Bill-223-34 for this re-zoning which may have a public hearing at the end of January. GPA held a public meeting on January 5th at the Astumbo Senior Citizen Center and received some input from landowners in the vicinity of the proposed plant. The latest public meeting held was at 6:00pm on January 17, 2018 at the Tamuning Senior Center.

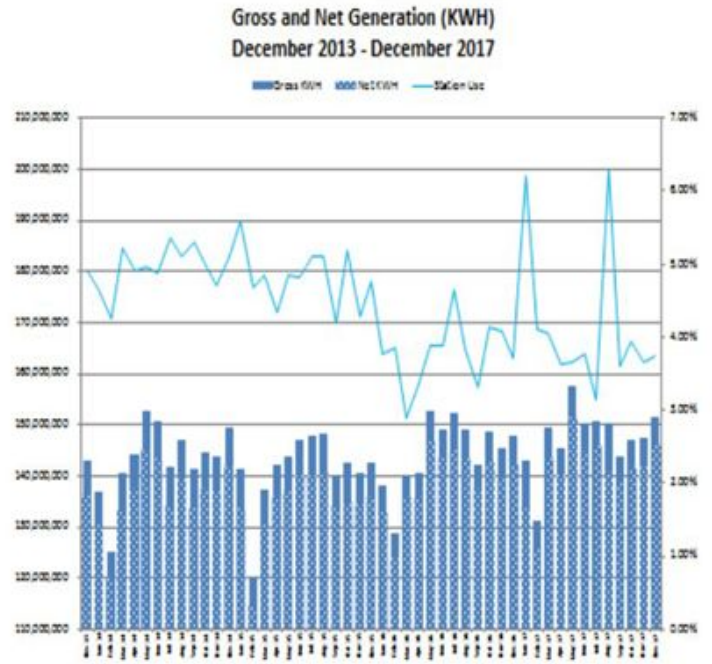
11. **Key Performance Indicators:** The following pages provide updated information thru December 2017.

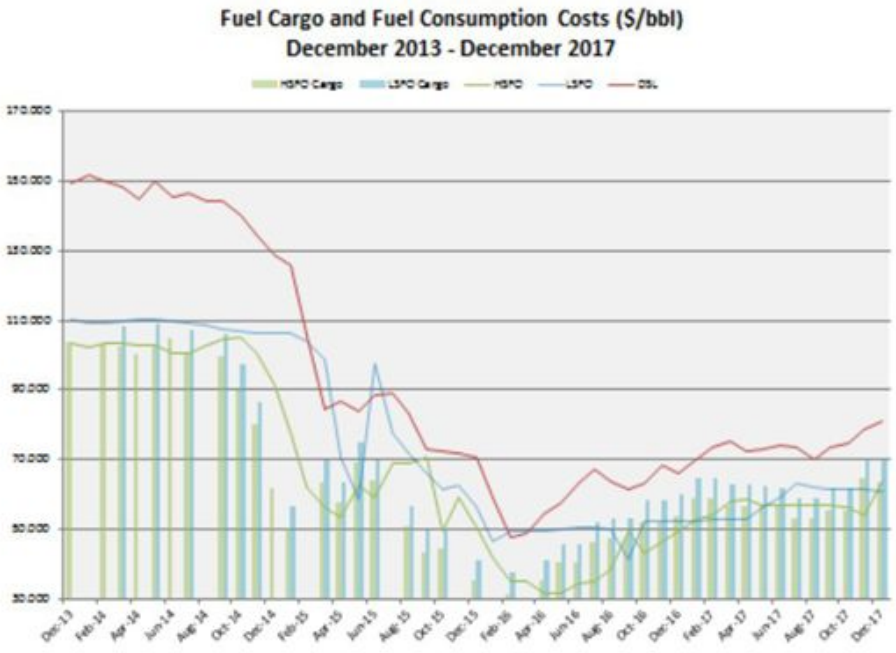
John M. Benavente, P.E.


Historical KWH Sales
December 2013 - December 2017


Historical Monthly Peak Demand
December 2011 - December 2017


SYSTEM GROSS HEAT RATE
(KWH/Gal)
December 2013 - December 2017
Aug 31, 2015 - Cabras 4 Explosion


Gross and Net Generation (KWH)
December 2013 - December 2017


Fuel Cargo and Fuel Consumption Costs ($/bbl)
December 2013 - December 2017
HSFO Cargo
LSFO Cargo
HSFO
LSFO
DSL
170.000
150.000
130.000
110.000
90.000
70.000
50.000
30.000
Dec-13
Feb-14
Apr-14
Jun-14
Aug-14
Oct-14
Dec-14
Feb-15
Apr-15
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Apr-17
Jun-17
Aug-17
Oct-17
Dec-17

Updates on Major CY 2018 Projects

January 18, 2018

New 180 MW Power Plant

DESCRIPTION	TIMELINE
• **Bid announcement:**	January 16, 2018
• **Qualified Bidders List:**	April 7, 2018
• **Technical Bid Issue:**	TBD (~ May 2018)
• **Notification of Intend to award**:	TBD
• **CCU / PUC Approval:**	TBD
• **Commercial Operations:**	30 months after contract signing (~ Dec 2021)

40 MW Energy Storage System

- **Awarded:** May 2017
- **Completion date:** August 31, 2018
- To mitigate generator trip related outages which resulted in Under Frequency Load Shedding activations to avoid blackouts
- Mitigates net power fluctuations by NRG 25MW plant and 1,500 net metering customers
- **Construction Cost:** ~$35M

SCADA Project

- Provides state of art Supervisory Control and Data Acquisition (SCADA) capability for GPWA
- **Awarded:** December 14, 2016
- **Completion Date:** October 1, 2018
- **Project cost:** $2,319,605.07 (GPA/GWA Combined)
- Provides real time monitoring and control of power system
- One control center for both GPA and GWA located here in Fadian. Shelters System Control Centers from natural disasters
- First SCADA system for GWA Water and Wastewater Systems

Phase III Renewables
40 MW on Leased Navy Land

- **Purpose:** Decrease/Stabilize LEAC Rates
- **Bid Issued:** Nov. 16, 2017
- **Bid Milestones:**
  - Phase I: Technical proposal due:
    - March 6, 2018
  - Phase II: Bid Opening (price):
    - April 17, 2018
  - Notification of Intent to award:
    - May 2, 2018
- CCU/PUC Approval: TBD

Renewables Integration Study

- **Task Order Awarded:**
  - January 9, 2017
- **Completion Date:**
  - TBD - 2018
- **Project Amount:**
  - $ 895,377.00

- This study will determine what capacity of renewables could be accommodated within the grid including system upgrades necessary for a stable and reliable grid.
- Study would provide information needed to plan for additional renewables and infrastructure upgrades necessary.
  - Phase II System Impact Study
  - Long Range Transmission Plan
  - Phase III ESS recommendations
  - New Generation operating characteristics requirements

Residual Fuel Oil Contract

- Current contract expires August 2018
- Provides low and high sulfur fuel
- Last residual fuel oil contract after over 60 years burning this fuel for energy production
- 2-year contract with three one year options

  (MS GPA-009-18)
- **Bid opening date:**
  - February 2018
- **CCU/PUC Approval:**
  - TBD (~ May 2018)

Ultra Low Sulfur Diesel

- Contract for about 1M Barrels
- One contract for bulk fuel delivery to GPA Leased Tristar Tanks (MS GPA-008-18)
- One contract for truck deliveries to various power stations (MS GPA-006-18)
- **Opening date:**
  - February 2018
- **CCU/PUC Approval:**
  - TBD (~ June 2018)

Outage Improvement Programs

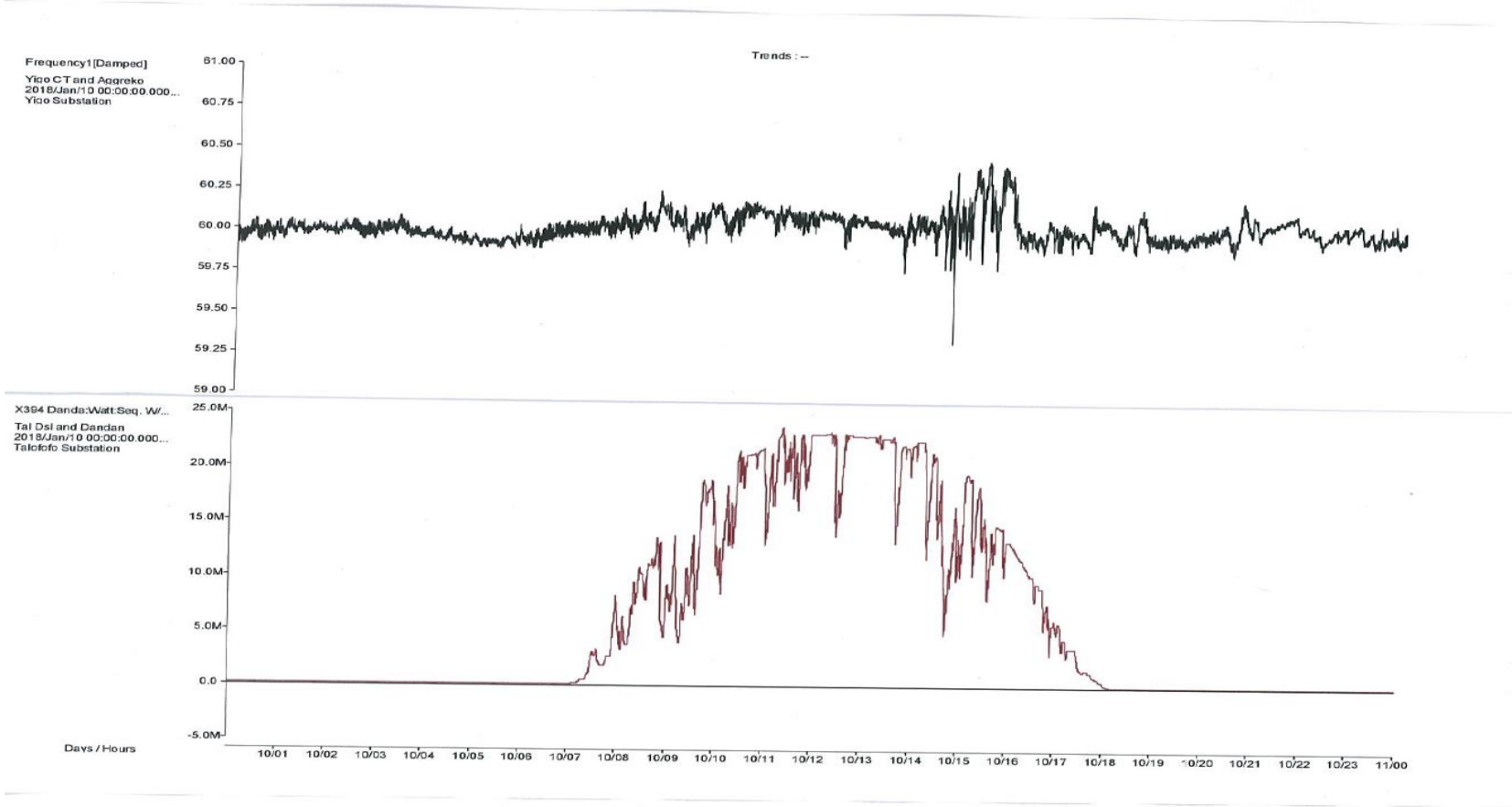
January 18, 2018

Energy Storage System Program

Generations/Transmission UFLS

- Under Frequency Load Shedding (UFLS) Relays dumps load from the system whenever system frequency decays to 59.3 Hz.
- The dumping of load is necessary in order to avoid overloading the generators on line which would consequently result in an island-wide blackout. Duration of UFLS outages typically between 5 to 30 minutes.
- The last Island-wide Blackout was on July 11, 2013. There were four additional blackouts between November 2010 and the last one. The recovery from an island-wide power outage would take five plus hours.
- The existing base load units are slow reacting to frequency decays and past attempts to mitigate outages by increasing on line spinning reserves were unsuccessful.
- The 40 MW Energy Storage System (ESS) consist of one 24 MW unit at the Hagatna Substation and one 16 MW unit at the Talofofo Substation. It is anticipated that these ESS would reduce over 70% of future UFLS outages due to generator trips and solar PV intermittencies.
- The project cost is $35M which is being funded by 2014 bond funds. Commissioning is programmed for August 2018.

Jan 10, 2018 Stage 1-1
UFLS activated at 59.3 Hz due to NRG drop in load from 17MW to 4MW resulting in five feeders losing power



CY 2016 UFLS Summary

2016	# of Feeder Trips	# of UFLS Events	Transmission	Duration (min)	Generation	AGGREKO	Cabras 1	Cabras 2	Dededo CT 1	Dededo CT 2	Dededo Diesel #2	Machche CT	NRG SOLAR	Piti 7 CT (TEM)	Piti 8 (MEC)	Piti 9 (MEC)	Pulantat Diesels #1	Talofofo Diesels #2	Tenjo Diesels #5	Yigo CT
Jan-16	28	3	1	111	2	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
Feb-16	75	9	0	209	9	2	0	0	0	0	0	1	0	0	1	5	0	0	0	0
Mar-16	84	11	2	149	9	0	0	0	0	0	0	0	0	1	1	7	0	0	0	0
Apr-16	85	13	1	222	12	2	1	1	0	0	0	2	0	1	2	3	0	0	0	0
May-16	23	2	0	95	2	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
Jun-16	40	7	4	114	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
Jul-16	27	7	1	46	6	2	0	0	0	0	0	0	0	0	1	0	0	0	0	3
Aug-16	5	2	1	10	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Sep-16	40	10	0	633	10	1	2	2	0	0	0	0	0	1	1	3	0	0	0	0
Oct-16	91	7	4	68	3	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0
Nov-16	77	7	0	73	7	2	0	1	0	0	0	0	0	0	0	4	0	0	0	0
Dec-16	33	1	0	33	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
2016 Totals	608	79	14	1,763	65	9	4	9	0	0	0	3	0	3	10	24	0	0	0	3

CY 2017 UFLS Summary

2017	# of Feeder Trips	# of UFLS Events	Transmission	Duration (min)	Generation	AGGREKO	Cabras 1	Cabras 2	Dededo CT 1	Dededo CT 2	Dededo Diesel #2	Machche CT	NRG SOLAR	Piti 7 CT (TEM)	Piti 8 (MEC)	Piti 9 (MEC)	Pulantat Diesels #1	Talofofo Diesels #2	Tenjo Diesels #5	Yigo CT
Jan-17	63	7	0	71	7	0	0	1	0	0	0	0	0	0	1	3	0	0	1	1
Feb-17	35	2	0	38	2	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Mar-17	39	7	1	1,489	6	1	2	0	0	0	0	1	1	0	0	0	1	0	0	0
Apr-17	72	7	0	118	7	0	2	1	1	0	1	0	2	0	0	0	0	0	0	0
May-17	23	2	0	24	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0
Jun-17	14	4	1	17	3	1	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Jul-17	39	7	1	78	6	0	0	1	0	0	0	0	1	1	0	0	0	0	0	3
Aug-17	45	5	0	81	5	0	0	2	0	1	0	0	0	1	1	0	0	0	0	0
Sep-17	19	2	0	15	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
Oct-17	32	4	1	38	3	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0
Nov-17	54	5	0	51	5	0	0	0	0	0	0	1	2	0	2	0	0	0	0	0
Dec-17	25	5	2	25	3	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0
2017 Totals	460	57	6	2,045	51	2	6	8	1	1	1	2	10	2	6	4	1	1	1	5

CY 2016 & CY 2017 Summary

2016	# of Feeder Trips	# of UFLS Events	Transmission	Duration (min)	Generation	Avg. Duration (Mins)	Avg. Feeders/Trip	Avg. Duration/Feeder
2016 Totals	608	79	14	1763	65	22	8	3
2017 Totals	460	57	6	2,045	51	36	8	4
TOTALS	**1,068**	**136**	**20**	**3,808**	**116**	**28**	**8**	**4**

ESS Economics

UFLS Outages Cost Summary:

2016	# of Feeder Trips	# of UFLS Events	Duration (min)	Unserved Kwh	Revenue Loss
Est. CY 016 Totals	608	79	1,763	1,159,000	$127,453
Est. CY 2017 Totals	460	57	2,045	1,364,200	$150,062

ESS Annual Summary:

Project Cost		$35,000,000
Debt Service		$2,808,490
O&M		$250,000
Total Cost:		$3,058,490
GPA Annual Kwh Sales		1,500,000,000
ESS Annual $/Kwh Cost		**$0.002**

Vegetation Management Program

Current Vegetation Management

- Contracts issued for North, Central and South sectors
- Crews assigned to trim critical areas on weekly basis
- Limited number of linemen available; adequate manpower unavailable to sustain trimming needs especially during rainy periods when vegetation growth compounds
- Vegetation trimming requires linemen when vegetation is very close to lines; can limit to tree trimmers if vegetation kept low lying
- Most work accomplished with chain saws and machetes
- Debris collected un-mulched; difficult to handle/dispose
- Overhaul of current program planned last year

Vegetation Management Northern Sector

Northern Sector			
Feeder	Esitmated Distance (LF)	Distance Trimmed (LF)	% Completion
P332	6830	11278	165%
P322	7265	4800	66%
P330	2635	13366	507%
P087	4245	4200	99%
P046	1245		
P321	4045		
P088	3310		
P089	670		
P331	1925		
P323	2810		
P271	50		
P270	300		
P245	1660		
P272	150		
P111	500		
P244	920		
P240	430		
P242	290		
Total	39280	33644	86%

Vegetation Management Central Sector

Central Sector			
Feeder	Estimated Distance (LF)	Distance Trimmed (LF)	% Completion
P250	33290	5070	15%
P212	17560		
P253	15240		
P283	2230	4620	207%
P210	10120		
P280	1675		
P311	1360		
P007	778		
P211	6050		
P202	420		
P251	280		
P213	3500		
P252	1520	4586	302%
P201	100		
P203	370		
P282	525		
P310	370		
P205	350		
P206	140		
P204	530		
P312	200		
P281	525		
P400	150		
Total	97283	14276	15%

Vegetation Management Southern Sector

Southern Sector			
Feeder	Estimated Distance (LF)	Distance Trimmed (LF)	% Completion
P294	9430	22801	242%
P261	4930	5389	109%
P340	13240	13755	104%
P262	5185		
P221	1570	150	10%
P223	2500	855	34%
P341	880		
P301	19915	1675	8%
P005	990		
P220	1250		
P260	12630		
Total	72520	44625	62%

Sustainable Vegetation Management

- Dedicated team for three sectors of the Island
- Teams consist of:
  - Two Lineman/Bucket Truck (as required)
  - Two operators; operates mower/dump truck/mulcher
  - Three Tree Trimmers to gather and mulch vegetation
- Clear trees and vegetation under and within right of ways
- Trees outside of ROW must also be cut with owner permission
- Continue Tree Trimming Contracts to assist with backlogs
- Work with Mayors on under the line mowing maintenance and the painting of poles with traffic yellow

Vegetation Mowers with Extended Booms



Heavy Duty Cutter Mowers



Heavy Duty Mulchers
To be Pulled by Dump Truck





Predictive & Preventive Maintenance

Predictive Based Maintenance

- Performed by America's Best Electricmart, Inc.
- GPA Purchase Order Number 24304
- $214,000 total Cost
- Started October 30, 2017 and completed on December 28, 2017 (59 Days)

Predictive Based Maintenance

- **Predictive Based Maintenance Technology Utilizes Radio Frequency, Proprietary Analytics, and Ultrasonic Acoustic Technology**
- **Predictive Based Maintenance Pinpoints Locations where Arcing, Leaking, and Electrical Tracking are Present to Identify Failing Parts**
- **Line Inspection Work Involved 10 Worst Performing Transmission Circuits**
- **Line Inspection Work Involved 10 Worst Performing Distribution Circuits**
- **296 Miles of GPA T&D Lines were Surveyed**
- **Worst Performing Circuits were determined in terms of Outages not including UFLS or Generation related outages**

Predictive Based Maintenance

- **50 Specific Locations Associated with a Transmission or Distribution Circuit along with Location Maps and Photos where a Particular Hardware, Insulator, or Line Appurtenance is Failing were Identified**
- **The Final Report Outlining the 50 Locations was Forwarded to T&D for Prioritized Scheduling to Avoid Extended Outages**
- **Total Estimated Cost to Survey entire GPA Transmission and Distribution System is $856,400**

Potential Fuse Cutout Failure







Potential 34.5 KV Insulator Failure







Potential Fuse Cutout Failure







GUAM POWER AUTHORITY
HUMAN RESOURCES DIVISION
STAFFING REPORT (FY 2018)
AS OF NOVEMBER 30, 2017

DIVISION	B1 ACTIVE EMP	B2 LAST EMP	C PROMOTE /TRANS	D PROM. RECLASS	E NEW HIRES	F RESIGN/ TERM	G RETIRE	H CURR VAC	I LAST VAC	(B1+H=K) TOTAL STAFFING
INTERNAL AUDIT/REVENUE PROTECTION	3	3	0	0	0	0	0	1	1	4
BOARD(10200)	2	2	0	0	0	0	0	0	0	2
GENERAL MANAGER (CUS) [10100]	0	0	0	0	0	0	0	0	0	0
GENERAL MANAGER (20500)	4	4	0	0	0	0	0	0	0	4
PUBLIC INFORMATION OFFICE	2	2	0	0	0	0	0	0	0	2
ASSIST GM-ENG/TECH SVCS (30500)	1	1	0	0	0	0	0	0	0	1
ASSISTANT GENERAL MGR (30800)	1	1	0	0	0	0	0	1	1	2
ASSISTANT GENERAL MGR (AGMO) 50900	2	2	0	0	0	0	0	0	0	2
STRAT PLANN & OPTNS RESEARCH DIV	10	10	0	0	0	0	0	1	1	11
FACILITIES	9	9	0	0	0	0	0	0	0	9
HUMAN RESOURCES	10	10	0	0	0	0	0	0	0	10
CUSTOMER SERVICES	34	34	0	0	0	0	0	3	3	37
INFORMATION TECHNOLOGY	16	15	0	0	1	0	0	0	1	16
FINANCE	42	42	0	0	0	0	0	4	4	46
PROCUREMENT	21	21	0	0	0	0	0	1	1	22
TRANSPORTATION	9	9	0	0	0	0	0	2	2	11
SAFETY	6	6	0	0	0	0	0	1	1	7
PLANNING & REG	8	8	0	0	0	0	0	0	0	8
ENGINEERING	37	37	0	0	0	0	0	2	2	39
GENERATION	138	139	0	0	0	0	0	7	6	145
TRANSMISSION/DISTRIBUTION	98	98	1	0	0	0	0	9	9	107
POWER SYSTEM CONTROL CENTER	22	22	0	0	0	0	0	3	3	25
	475	475	1	0	1	0	0	35	35	510
JOBS/SCSEP/GETP PARTICIPANTS	1	1								1
APPRENTICESHIP PROGRAM	0	1								0
SUMMER ENGINEERING INTERNS	0	0								0
TEMPORARY (P.L. 34-32)	1	1								1
GRAND TOTAL WORKFORCE:	477	478	1	0	1	0	0	35	35	512

FTE Count per FY18 FMP: 510

Current vacancies adjusted to reflect FTE of 510

** JOBS = Job Opportunities and Basic Skills (individuals under the Public Health assistance program)

** GETP = Guam Employment & Training Program (individuals under the Public Health assistance program)

** SCSEP = Senior Community Service Employment Program

** APPRENTICESHIP TRAINING PROGRAM - Generation, PSCC and T&D combined total

** JOBS/SCSEP/GETP and Apprentice program participants are not included in the total annual budgeted FTE (Full-Time Employee) count.

** P.L. 34-32 -Temporary employee(s)

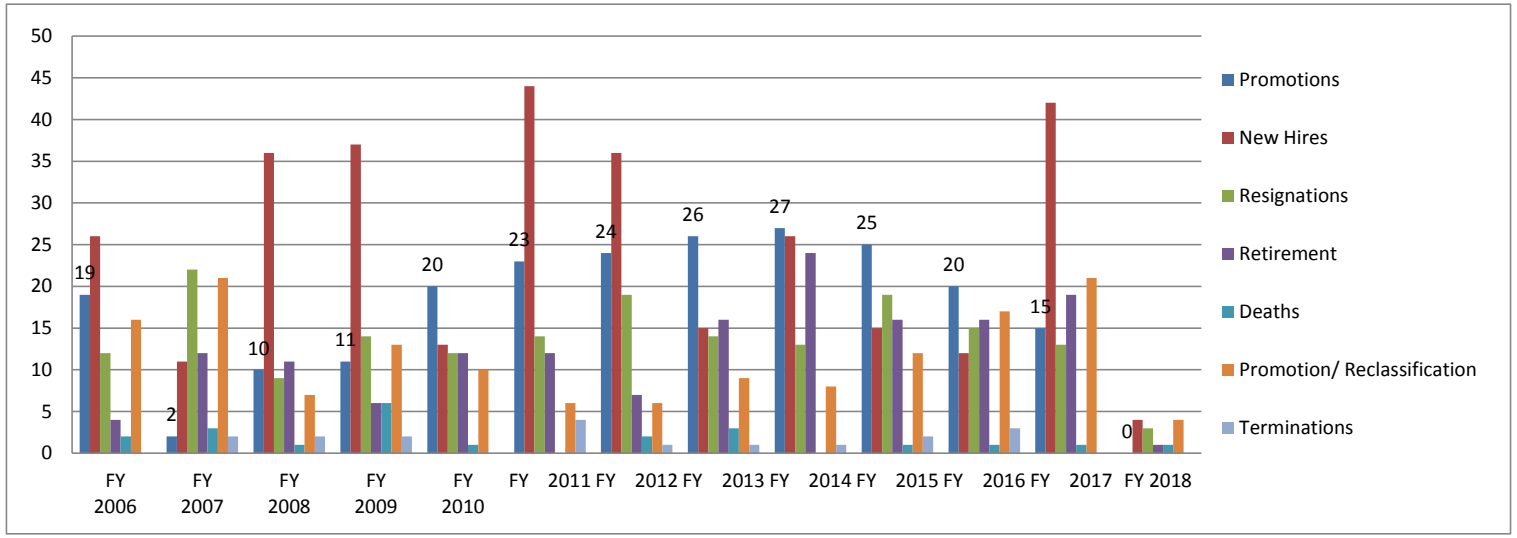
Staffing Report as of November 30, 2017 - PREPARED BY: J.Aguigui

RECRUITMENT ANALYSIS

Fiscal Year	Promotions	New Hires	Resignations	Retirement	Deaths	Promotion/ Reclassifi-cation	Termina-tions	Total Author-ized FTE	Attrition Rate	Total Filled FTE at end of Fiscal Year	Percentage of Filled FTE at end of Fiscal Year
2006	19	26	12	4	2	16	0	584	3.3%	536	91.8%
2007	2	11	22	12	3	21	2	584	7.2%	510	87.3%
2008	10	36	9	11	1	7	2	592	4.5%	525	88.7%
2009	11	37	14	6	6	13	2	592	5.3%	534	90.2%
2010	20	13	12	12	1	10	0	592	4.7%	522	88.2%
2011	23	44	14	12	0	6	4	592	5.7%	536	90.5%
2012	24	36	19	7	2	6	1	568	5.4%	543	95.6%
2013	26	15	14	16	3	9	1	568	6.3%	524	92.3%
2014	27	26	13	24	0	8	1	568	7.3%	512	90.1%
2015	25	15	19	16	1	12	2	539	7.4%	489	90.7%
2016	20	12	15	16	1	17	3	510	7.2%	466	91.4%
2017	15	42	13	19	1	21	0	510	7.1%	476	93.3%
2018	0	4	3	1	1	4	0	510	1.1%	475	93.1%

Recruitment Analysis (FY 2018) ..1 of 2

as of 11/30/17

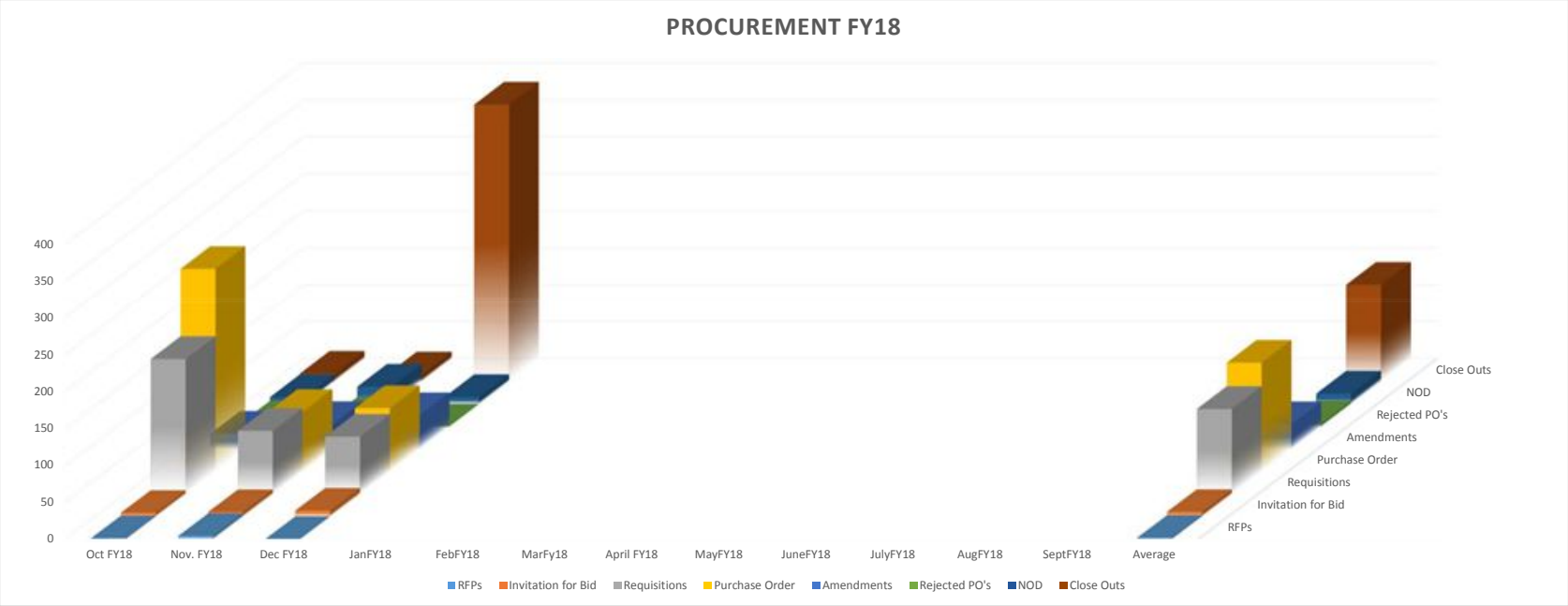


	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Promotions	19	2	10	11	20	23	24	26	27	25	20	15	0
New Hires	26	11	36	37	13	44	36	15	26	15	12	42	4
Resignations	12	22	9	14	12	14	19	14	13	19	15	13	3
Retirement	4	12	11	6	12	12	7	16	24	16	16	19	1
Deaths	2	3	1	6	1	0	2	3	0	1	1	1	1
Promotion/ Reclassification	16	21	7	13	10	6	6	9	8	12	17	21	4
Terminations	0	2	2	2	0	4	1	1	1	2	3	0	0

TOTAL NO. OF EMPLOYEES	**536**	**510**	**525**	**534**	**522**	**536**	**543**	**524**	**512**	**489**	**466**	**476**	**475**

Recruitment Analysis (FY 2018) .. 2 of 2

as of 11/30/17

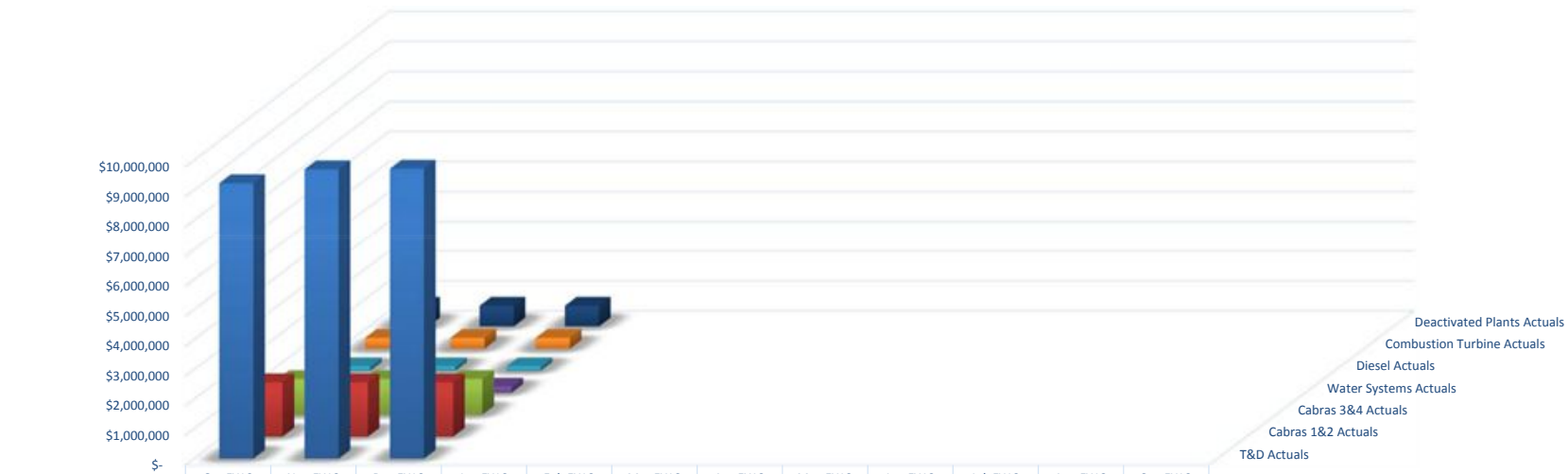


	Oct FY18	Nov. FY18	Dec FY18	JanFY18	FebFY18	MarFy18	April FY18	MayFY18	JuneFY18	JulyFY18	AugFY18	SeptFY18	Average
RFPs	1	4	0										1.66666667
Invitation for Bid	5	6	8										6.33333333
Requisitions	183	86	78										115.666667
Purchase Order	275	81	86										147.333333
Amendments	**21**	**34**	**46**										33.6666667
Rejected PO's	4	9	0										4.33333333
NOD	9	23	9										13.6666667
Close Outs	10	9	374										131

T&D Inventory Actuals FY18



	Branch Plant	Oct FY18	Nov FY18	Dec FY18	Jan FY18	Feb FY18	Mar FY18	Apr FY18	May FY18	Jun FY18	Jul FY18	Aug FY18	Sep FY18
T&D Actuals	32100	$9,247,484	$9,708,159	$9,727,545									
Transformer Actuals	59900	$1,701,456	$1,817,711	$1,724,028									
Meters	59100	$431,024	$431,024	$431,024									



	Oct FY18	Nov FY18	Dec FY18	Jan FY18	Feb FY18	Mar FY18	Apr FY18	May FY18	Jun FY18	Jul FY18	Aug FY18	Sep FY18
T&D Actuals	$9,247,484	$9,708,159	$9,727,545									
Cabras 1&2 Actuals	$1,838,876	$1,836,965	$1,834,553									
Cabras 3&4 Actuals	$1,206,713	$1,206,713	$1,206,713									
Water Systems Actuals	$207,668	$209,651	$208,493									
Diesel Actuals	$150,427	$150,427	$150,427									
Combustion Turbine Actuals	$365,514	$365,514	$365,514									
Deactivated Plants Actuals	$687,989	$687,989	$687,989									

GUAM POWER AUTHORITY
GOVERNMENT ACCOUNTS RECEIVABLE
BILLING UP TO 12/31/2017 and Payment Applied as of 01/16/2018

Current (12/17 Billing due 01/31/18
30 days Arrears (11/17 due 12/15/17)
60 days and over Arrears (10/17 billing due 11/15/17)

NEW ACCT NUMBER		DEPARTMENT	ARREARS BALANCE 11/30/2017	CURRENT BILL FOR 12/31/2017 BILL DATE 01/08/2018	BILLING ADJUSTMENT 1/8/2018	PAYMENTS AS OF 1/8/2018	BILLING BALANCE 1/8/2018	
		Line Agencies						
124378	0237100000	Dept. of Corrections	$ 73,878.77	$ 71,876.65	$ -	$ (73,878.77)	$ 71,876.65	
124401	0437100000	Dept. of Parks & Rec.	$ 19,224.80	$ 19,338.89	$ 75.00	$ (19,224.80)	$ 19,413.89	
124415	0537100000	Guam Fire Department	$ 17,346.11	$ 16,633.04	$ -	$ (17,346.11)	$ 16,633.04	
108818	6995000000	DOA-Supply Management	$ 1,426.99	$ 1,471.82	$ -	$ (1,426.99)	$ 1,471.82	
108799	7895000000	Dept. of Administration	$ 3,617.32	$ 3,445.86	$ -	$ (3,617.32)	$ 3,445.86	
124392	1337100000	Nieves Flores Library	$ 10,735.83	$ 9,587.42	$ -	$ (10,735.83)	$ 9,587.42	
140297	2206200000	General Services Agency	$ 244.69	$ 248.89	$ -	$ (244.69)	$ 248.89	
124380	2237100000	DOA-Data Processing	$ 7,693.05	$ 7,231.40	$ -	$ (7,693.05)	$ 7,231.40	
124393	2337100000	Dept. of PH&SS	$ 65,809.99	$ 64,757.94	$ -	$ (65,809.99)	$ 64,757.94	
124381	3237100000	Dept. of Education	$ 1,062,027.62	$ 989,306.83	$ 349.78	$ (1,062,027.62)	$ 989,656.61	
124394	3337100000	Guam Police Department	$ 34,895.99	$ 33,545.23	$ -	$ (34,895.99)	$ 33,545.23	
128478	3569100000	Dept of Youth Affairs (Federal)	$ 903.05	$ 957.52	$ -	$ (903.05)	$ 957.52	
124407	4437100000	Dept. of Youth Affair* (Local)	$ 13,821.99	$ 13,199.62	$ 25.00	$ (13,821.99)	$ 13,224.62	
124445	4737100000	Guam Environmental Protect	$ 5,847.97	$ 5,690.97	$ -	$ (5,847.97)	$ 5,690.97	
124408	5437100000	Mental Health/Subst.	$ 42,415.83	$ 39,421.05	$ -	$ (42,415.83)	$ 39,421.05	
148823	7200300000	Veteran Affairs	$ 936.78	$ 908.97	$ -	$ (936.78)	$ 908.97	
124412	7437100000	Civil Defense (Military Affairs)	$ 33,182.05	$ 10,856.02	$ -	$ (33,182.05)	$ 10,856.02	
158935	7463300000	Pacific Energy Resource Center	$ 521.13	$ 573.20	$ -	$ (521.13)	$ 573.20	
124374	8137100000	Dept. of Agriculture	$ 9,741.10	$ 8,871.44	$ -	$ (9,741.10)	$ 8,871.44	
124399	8337100000	DPW-FAC Adm Account	$ 25,431.16	$ 24,651.28	$ -	$ (25,431.16)	$ 24,651.28	
	8437100000	Guam Visitors Bureau	$ 4,365.53	$ 4,024.78	$ (501.22)	$ (3,864.31)	$ 4,024.78	
166560	8446300000	Yona Senior Citizen Center	$ 772.51	$ 711.15	$ -	$ (772.51)	$ 711.15	
124414	9437100000	Chamorro Village	$ 4,026.16	$ 3,912.71	$ -	$ (4,026.16)	$ 3,912.71	
292266	5247210000	Mayors Council	$ 5,089.60	$ 2,225.31	$ -	$ (5,089.60)	$ 2,225.31	
309494	6293410000	Office of the Governor	$ 23,092.87	$ 22,051.44	$ -	$ (23,092.87)	$ 22,051.44	
	8555858369	Dept of Chamorro Affairs (Guam Museum)	$ 17,788.85	$ 17,351.60	$ -	$ (17,788.85)	$ 17,351.60	
		Sub Total	**$ 1,484,837.74**	**$ 1,372,851.03**	**$ (51.44)**	**$ (1,484,336.52)**	**$ 1,373,300.81**	
		MAYORS						
124427	0637100000	Santa Rita Mayor	$ 3,438.80	$ 3,620.20	$ -	$ (3,438.80)	$ 3,620.20	
124437	0737100000	Ordot/Chalan Pago Mayor	$ 1,228.99	$ 1,792.03		$ (1,228.99)	$ 1,792.03	
124417	1537100000	Agana Mun Planning Council	$ 1,143.02	$ 1,391.16	$ -	$ (1,143.02)	$ 1,391.16	
124428	1637100000	Piti Mayor	$ 766.39	$ 1,285.78	$ 403.19	$ (1,169.58)	$ 1,285.78	
124438	1737100000	Mongmong/Toto/Maite Mayor	$ 2,279.14	$ 1,146.00	$ -	$ (2,279.14)	$ 1,146.00	
124429	2637100000	Asan/Maina/Adelup Mayor	$ 909.92	$ 855.75	$ -	$ (909.92)	$ 855.75	
124439	2737100000	Sinajana Mayor	$ 3,898.72	$ 3,938.58	$ -	$ (3,898.72)	$ 3,938.58	
124430	3637100000	Dededo Mayor	$ 5,704.83	$ 5,982.48	$ -	$ (5,704.83)	$ 5,982.48	
124431	4637100000	Yigo Mayor	$ 3,875.76	$ 4,280.88	$ -	$ (3,875.76)	$ 4,280.88	
124432	5637100000	Umatac Mayor	$ 1,358.98	$ 1,391.80	$ -	$ (1,358.98)	$ 1,391.80	
124423	6537100000	Agana Hts. Mayor	$ 4,960.46	$ 5,180.17	$ -	$ (4,960.46)	$ 5,180.17	
124433	6637100000	Merizo Mayor	$ 1,357.48	$ 1,293.33	$ -	$ (1,357.48)	$ 1,293.33	
124453	6737100000	Barrigada Mayors Office	$ 1,997.90	$ 2,146.49	$ -	$ (1,997.90)	$ 2,146.49	
124424	7537100000	Agat Mayor	$ 4,373.18	$ 2,300.79	$ -	$ (4,373.18)	$ 2,300.79	
124434	7637100000	Inarajan Mayor	$ 1,539.30	$ 1,300.34	$ -	$ (1,539.30)	$ 1,300.34	
124425	8537100000	Tamuning Mayor	$ 5,597.41	$ 5,662.85	$ -	$ (5,597.41)	$ 5,662.85	
124435	8637100000	Talofofo Mayor	$ 2,015.36	$ 2,271.58	$ -	$ (2,015.36)	$ 2,271.58	
124426	9537100000	Mangilao Mayor	$ 4,406.08	$ 4,643.74	$ -	$ (4,406.08)	$ 4,643.74	
124436	9637100000	Yona Mayor	$ 873.44	$ 823.62	$ 25.00	$ (873.44)	$ 848.62	
		Sub Total	**$ 51,725.16**	**$ 51,307.57**	**$ 428.19**	**$ (52,128.35)**	**$ 51,332.57**	
		DPW ACCOUNTS						
124395	4337100000	DPW-Village St. Lights	$ 335,305.22	$ 317,920.81	$ 0.46	$ (335,305.22)	$ 317,921.27	
124396	5337100000	DPW- Primary St. Lights	$ 78,290.15	$ 79,622.70	$ 0.88	$ (78,290.15)	$ 79,623.58	
124397	6337100000	DPW-Sec/Coll St. Lights	$ 23,977.23	$ 24,425.52	$ -	$ (23,977.23)	$ 24,425.52	
124398	7337100000	DPW-Signal Lights	$ 10,289.39	$ 9,714.34	$ 0.16	$ (10,289.39)	$ 9,714.50	
		Sub Total	**$ 447,861.99**	**$ 431,683.37**	**$ 1.50**	**$ (447,861.99)**	**$ 431,684.87**	
		(B) AUTONOMOUS/PUBLIC CORP						
124402	1437100000	Retirement Fund	$ 5,502.94	$ 5,293.74	$ -	$ (5,502.94)	$ 5,293.74	
208988	1915500000	Guam Housing Corp Rental Division	$ 2,224.69	$ 1,417.07	$ 50.51	$ (1,676.35)	$ 2,015.92	
124403	2437100000	University of Guam	$ 172,632.57	$ 160,245.34	$ -	$ (332,877.91)	$ -	
124383	4237100000	Guam Airport Authority	$ 483,565.38	$ 494,492.11	$ -	$ (483,565.38)	$ 494,492.11	
	5357510000	University of Guam (NET METERED)	$ 77,263.29	$ 73,638.59	$ -	$ (150,901.88)	$ -	
124387	6237100000	G H U R A	$ 11,151.82	$ 22,150.63	$ -	$ (22,843.67)	$ 10,458.78	
124409	6437100000	Guam Community College	$ 47,351.83	$ 42,596.41	$ -	$ (47,351.83)	$ 42,596.41	
124388	7237100000	Guam Memorial Hospital	$ 335,332.37	$ 155,289.92	$ 1,220.96	$ (172,538.01)	$ 319,305.24	1
124377	9137100000	Port Authority of Guam	$ 93,426.24	$ 94,045.20	$ (10,358.37)	$ (177,063.07)	$ 50.00	
	9157510000	Guam Community College (NET METERED)	$ 37,463.18	$ 33,659.31	$ -	$ (37,463.18)	$ 33,659.31	
288441	9173210000	Guam Solid Waste Authority	$ 4,730.10	$ 5,165.63	$ -	$ (4,730.10)	$ 5,165.63	
124400	9337100000	Guam Waterworks Authority	$ 1,126,757.49	$ 1,092,191.15	$ 572.37	$ (1,126,757.49)	$ 1,092,763.52	
		Sub Total	**$ 2,397,401.90**	**$ 2,180,185.10**	**$ (8,514.53)**	**$ (2,563,271.81)**	**$ 2,005,800.66**	
		(C) OTHERS						
124391	0337100000	Guam Legislature	$ 297.26	$ 219.53		$ (297.26)	$ 219.53	
	9503154359	Guam Legislature (NET METER)	$ 6,056.34	$ 5,819.82		$ (6,056.34)	$ 5,819.82	
124379	1237100000	Superior Court of Guam	$ 68,120.29	$ 67,185.92		$ (68,120.29)	$ 67,185.92	
124418	2537100000	Agana Post Office	$ 5,483.63	$ 5,466.68		$ (10,950.31)	$ -	
130431	2570200000	Customs & Quarantine Agency	$ 961.08	$ 871.76		$ (961.08)	$ 871.76	
124419	3537100000	U.S. Post Office	$ 38,475.21	$ 37,634.10		$ (76,109.31)	$ -	
124422	5537100000	Dept. of Military Affairs	$ 85,660.09	$ 72,035.29		$ (85,660.09)	$ 72,035.29	
	3209463043	Dept. of Military Affairs (NET METERED)	$ 6,119.39	$ 2,846.00		$ (6,119.39)	$ 2,846.00	
124446	5737100000	KGTF	$ 6,058.35	$ 6,228.23		$ (6,058.35)	$ 6,228.23	
102783	7281000000	Tamuning Post Office	$ 5,282.23	$ 5,122.85		$ (10,405.08)	$ -	
		Sub Total	**$ 222,513.87**	**$ 203,430.18**	**$ -**	**$ (270,737.50)**	**$ 155,206.55**	
		Sub Total (w/out Promissory Note)	**$ 4,604,340.66**	**$ 4,239,457.25**	**$ (8,136.28)**	**$ (4,818,336.17)**	**$ 4,017,325.46**	

SPORD CCU Report

December 2017

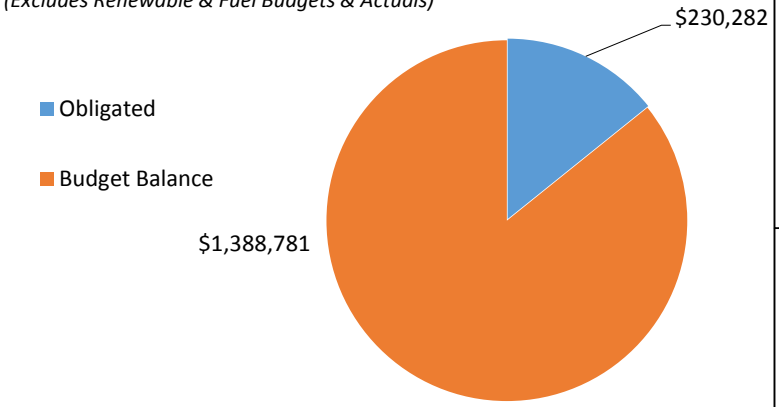
SPORD FY 2018 Budget Status

SPORD O&M:

O&M (Non-Labor) Budget Status

thru 12/31/17

(Excludes Renewable & Fuel Budgets & Actuals)

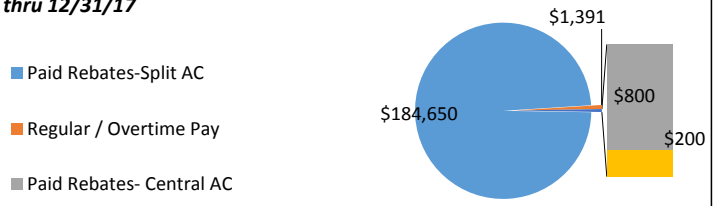


Approved Budget	$	1,619,063
Adjusted Budget	$	1,619,063
Actuals	$	106,218

DSM Expenses:

FY17 DSM Program Costs

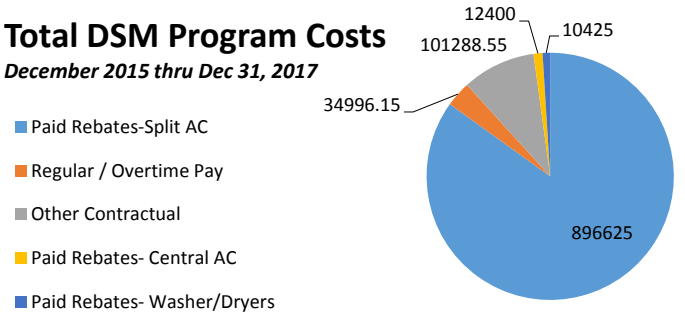
thru 12/31/17



FY 18 Total = $ 342,615

Total DSM Program Costs

December 2015 thru Dec 31, 2017



Total to Date = $1,211,308

2

Ongoing Activities

- Contract Performance Management (IPP, PMC, Agrekko)
- Generation Fuel Supply & Fuel Farm Management
- DSM Rebate Processing
- Renewables (Wind Turbine Maint & DOAg MOA, NRG Invoicing)
- Smart Grid/Network Support
- Project Management (*See Nov-Dec Project Activities*)

Project Activities

No.	Project Description	Nov/Dec Activities	Status / Est. Completion
1	Energy Storage System (Phase I)	GPA reviewing 100% design. Clearing and Grading work commenced in November 2017 and is on-going.	August 2018
2	Renewable Energy Resource Phase II	OPA denied Shanghai protest favoring GPA. Additional protest withdrawn. GPA & bidders initiated discussions to finalize bid documents for Jan. CCU Meeting.	~ Dec 2019 2 years after contract signing (Commerical Operation)
3	New Power Plant Bid (EPCM)	Review of draft IPP bid documents for new power plant. Discussion on land details and RFQ process. PUC approved RFQ in Nov 2017. Finalized RFQ.	Jan 2018 (Issue RFP Step 1 Solicitation)
4	DSM Marketing	Completed DSM Point of Sales Kits, GPA marketing signage, EV vehicle wrap (prepped for parade), various media ads, waiver form, etc.	Continuous
5	DSM Rebate Program	Processed over 500 equipment in applications for rebates totaling ~ $197K	Continuous
6	Wireless Network Expansion (LML)	Commenced Southern Expansion in collaboration with GWA: 30%	To be Updated
		Assessment of GWA Well Locations: Completed	Completed
		Assessment of Existing Tropos Units: 20%	Continuous
7	Performance Metrics Automation Project	Target Completion, Phase I: Dashboard build out	Aug 2017
		Started Phase II: Automating and consolidating data sources	Sept 2017
		Roll-out and Change Management Initiatives commenced	Sept 2017
8	Electric Grid Analysis Software	Additional training for users	Mar 2018
9	Services to Develop Business Performance Indices using iDashboards	Dashboard builds 95%	Dec 2017
10	Supervisory Control and Data Acquisition (SCADA) System	Supervisory Control and Data Acquisition (SCADA) System SCADA Systems Architecture Approved, Network Equipment approved, and Revised Schedule/Completion date submitted by Benson, Currently under GPWA review	Mar 2018

Project Activities

No.	Project Description	Nov/Dec Activities	Status / Est. Completion
11	Mobile Workforce Management System	Closing 1/5/2018 and Vendor Demostration being scheduled	Jan 2018 (Bid Award)
12	Consulting Services for Smart Grid Analytics Enabled Distribution System Planning, Technical, and Economic Feasibility Studies	RFP evaluation ongoing	Feb 2018 (RFP Award)
13	TEMES Piti # 7 ECA Expiration & Transition to GPA	Coordinating tasks under AGMETS for Transition. ECA & Technical Assessment - Data Compilation in Progress - ESA Visit completed, awaiting LEIDOS report - Technical Assessment Visit completeed, awaiting LEIDOS report Assisting Generation with Transition	Completion Date: Nov 2017
14	MEC Piti &8 and #9 - ECA Expiration	ESA & Technical Assessment pending completion of discussions with LEIDOS/BWSC. Bid Document Preparation for New IPP Procurement. Data Compilation in Progress.	Jan 2018 (Bid Docs) Mar/Apr 2018 (ESA &Tech Assessment Report)
15	Planning Software Upgrades & Training (Capacity Expansion/ Portfolio Optimization / Stochastics)	Training of 2 SPORD Engineers for PO use commenced 10/3/2017. Upcoming task: Configuration and management of database, training for - SPORD - PSCC	Start Date: Oct 2017 Completion Date: Sept 2018
16	Generation Software (GADS open software)	Installation at Generation Division completed. Database configuration in progress. Training completed on Nov. 15, 2017.	Nov 2017
17	IFB for ULSD Supply for Baseloads and Peaking Units	Solicitation in progress	Start Date: Nov 2017 Est. completion: FY2018
18	Contract for Lease of Bulk ULSD Storage	Lease procurement approved. Reviewing and finalizing lease contract.	Early 2018 (Tank Available)
19	EV Infrastructure	Developing fast charge station scope for Mangilao offices.	Sept 2018

Project Activities

No.	Project Description	Nov/Dec Activities	Status / Est. Completion
20	Consulting Support, new procurements for Piti 7,8,9	Data compilation and bid document preparation (GPA side) in progress. Awaiting LEIDOS recommendations and draft.	Start: October 2017, Announce in Jan/Feb 2018 Completion: August 2018
21	Fuel Conversion Plan	Initial discussion commenced, detailed discussions in November after submission of Assessment Report. Data Requests being addressed.	Start: October 2017 Completion: June 2018
22	Fuel Bulk Storage Facility Assessment	Consultant Site Visits for ESA and Technical Inspeciton completed. Reports due Januaryr 2018.	Start: Sept 2017 End: January 2018
23	Design and Engineering Consulting for Remote Start of GPA Plants	Engineering Project Management team reviewed scope. Dratt of assessment and implementation plan completed.	August 2018
24	Renewable Energy Resource Phase III	Bid announced in Nov. 2017. Site visits scheduled in January 2018.	(Mar 2018) Tech Proposal Due
25	Utility Energy Services Contract (UESC)	Kicked off discussions with UOG, Guam Energy Office, Dept. of Navy, and GPA team on project development and opportunities. Discusssed DSM Model House.	
26	IFB for ULSD Delivery Services for GPA Plants	Solicitation in progress	Start: November 2017 Completion: FY2018 Contract Start: TBD
27	IFB for RFO Supply to Baseload Plants	Solicitation in progress	Start: November 2017 Completion: FY2018 Contract Start: TBD
28	IFB for Petroleum Inspection Services	Solicitation in progress	Start: November 2017 Est. Completion: May 2018 Contract Start: Jun 01, 2018
29	RFO Storage Lease	Lease extension approved by CCU. For PUC review and approval	Start: November 2017 Est. Completion: Mar 2018 Contract Start: Aug 1, 2018

Planned Procurements

- Piti #7 Additional Procurements
  - Pending Technical Assessment of plant potential procurements may include Maintenance Services Contract or a Re-capitalization Contract.
- Piti #8 and #9
  - Exploring options for re-capitalization contract after expiration of ECA in 2018. Projecting solicitation early 1st Quarter 2018.
- IPP Contracts for up to 180 MW Generation Resources
  - Documents being drafted. Projecting solicitation early 1st Quarter 2018.
- ULSD Supply & Delivery to Baseload and Peaking Units
  - Solicitation in progress

Planned Procurements

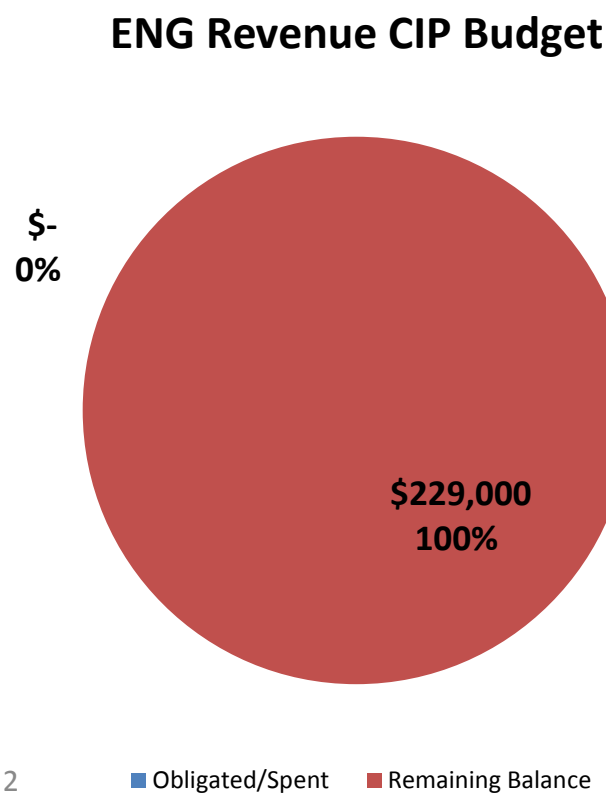
- MV90 Integration and Training Services
  - Processing Documents through PMM to be solicited in January 2018
- Engineering Analysis Trainings Services
  - Processing Documents through PMM to be solicited in February 2018

ENG Budget Execution Performance

December 31, 2017

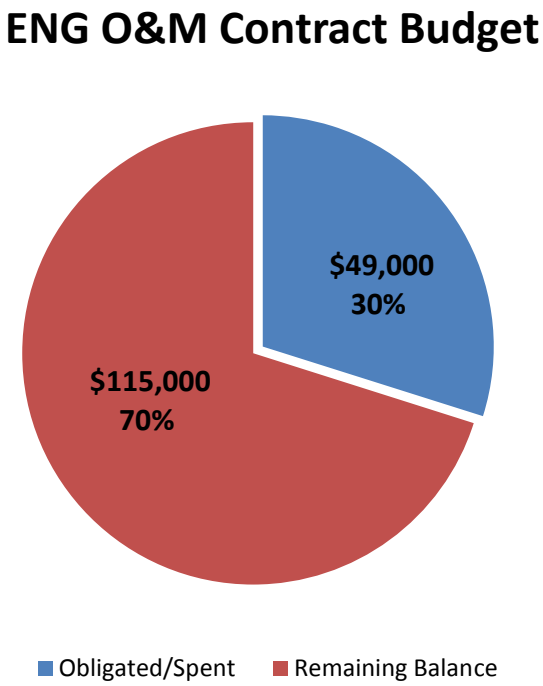
ENG Revenue CIP Budget

- Revenue Funded
- Target
  - 50% CIP Obligation by June 1, 2018
  - 100% CIP Spend by September 30, 2018



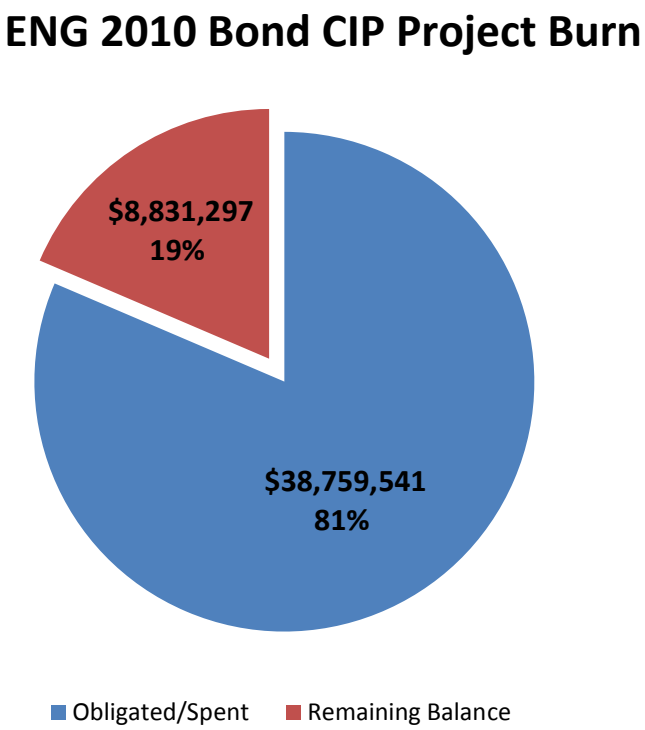
ENG O&M Contract Budget

- Revenue Funded
- Target
  - 25% CIP Obligated by April 30, 2018
  - 75% CIP Obligation by August 30, 2018
  - 100% CIP Spend by September 30, 2018



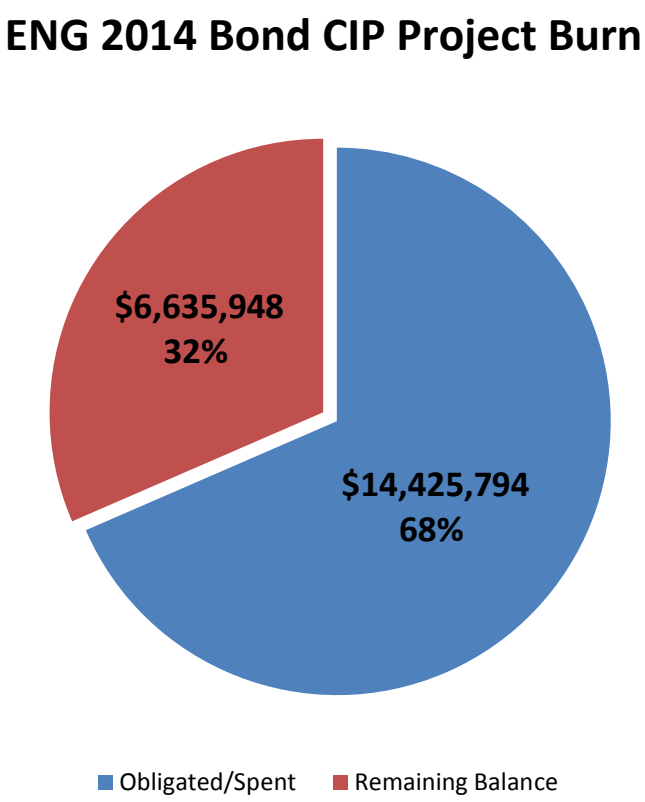
ENG 2010 Bond Series CIP Budget

- Bond Funded
- Target
  - Pending



ENG 2014 Bond Series CIP Budget

- Bond Funded
- Target
  - Pending



Engineering Work Orders

Engineeirng Work Order Summary -December 2017	
Work Orders Received from Customer Services	121
Work Orders Processed & Released to T&D	116
Work Orders Processed & Released to CSR	57
Work Orders Canceled	3
Work Orders Pending Survey	25
Pending Work Orders at Engineering	470

Engineering Large Customer and Net Metering Tracking

Date Received	Customer Name	Work Order Number(s)	Location	KVA	Meter Qty	Status
05/07/14	Port Authority of Guam	412337	Piti			Upgrades of existing facilities, includes line relocations and service conversions from overhead to underground 75% completed. Currently on hold pending Port Authorty direction for final removal.
12/20/13	CoreTech International	Multiple	Dededo	250	50	Lada Estates, 450 kVA, Phase I 100% Completed 242 units energized, Phase II 300 kVA, applications received for 93 units, Phase II 100% Completed. Phase III on hold due to Labor and Permit issues.
01/27/15	TG Engineers PC	422182-85, 90-93, 96-98	Agana Heights	100	11	11 Unit Apartment, 100 kVA, 97% Completed
06/02/15	Docomo Pacific Inc.	Multiple	Various Locations Islandwide	50		New Comm Towers and Power Supplies, 10 sites, 9 completed
05/13/15	CoreTech International Towers	426021	Tamuning	3300	104	New condominiums, 2-1500kVA and 1 300 kVA, Tower 101 100% Completed, Tower 102, 103, and 104 are 45% completed, currently on hold. Temporary power pending for Community Center, 100% Completed. First 52 Service Orders for Tower 101 is 100% completed.
05/11/16	Korando Corp (DPW Bile Pigua Bridge)	437716	Merizo			Bile and Pigua Bridge Reconstruction - 65 % Completed, Route 25/26 Road Widening, currently on hold.
12/09/16	Maeda Pacific	443952	Harmon			Route 1 and Route 3 road improvements - 85% completed, involves new underground 34.5kV and 13.8kV lines and the removal of overhead ples and lines. Pulling of wires intiated 10/9/17. Final Termination and testing Completed. Energizing of new underground 13.8kV and 34.5 kV lines completed. Pending removal of overhead lines.
Pending	New Nikko Expansion	Pending	Tumon	1500	1	New Nikko Expansion, pending submittal of work order application. Redesign of primary feed ongoing.
03/10/17	Best Housing Corp Ltd	446924-30	Mangilao	60	6	New 6-Unit Townhome, 50% completed
06/01/17	GWA Pump Stations 2 and 3	450278-9	Santa Rita	150	2	New GWA Pump Stations. 20% Completed.
06/01/17	WM Eng Office Building	450280	Tamuning	150	1	New office building. 90% Completed.
07/17/17	Keystone Pacific Realty Corp	451488	Hagatna	100	10	New apartment. 92% Completed. Pending additional applications.
07/17/17	Grand Rock Corp.	451490, 1	Santa Rita	50	4	100% Completed. Released to T&D.
08/07/17	Matsumoto, Akiyoshi	452146-49, 51, 4, 6	Tumon	60	7	New 6 Unit Apartment with Common Meter. 5% Completed.
08/17/17	Micronesian Community Corp.	Pending	Mangilao	130	13	New 13 unit subdivison, 5% completed
09/11/17	Grand Harvest Inc.	453016,19,22,24-30,32,34,35,38,40	Dededo	225	17	New 17 Unit Apartment, 85 % Completed.
10/02/17	Sumitomo Mitsui (Baza Gardens Waste water)	453369	Yona	300	1	Baza ardens Wastewater Treatment Plant Improvements, 0% Completed
Varies	Pending Net Metering Customers	Varies	Various Locations Islandwide		17	Pending Net Metering Customers
			Total	6425	244	

PLANNING & REGULATORY DIVISION REPORT

The following summarizes P&R's activities for the month of December 2017

INSPECTIONS/MONITORING

- Best Management Practices (BMP) Weekly Inspection/Report – Cabras Power Plant
- Spill Prevention, Control and Countermeasures (SPCC) Inspection/Report - Cabras, CT, Diesel, Piti 7 Power Plants and Substations
- Dededo CT operating hours and emissions monitoring
- Aggreko Emissions Monitoring – Emissions indicate that we are on track with our estimates and we can reasonably expect to be below the 250 ton/year limit at 238 tons on Jan. 8, 2018

ENVIRONMENTAL RESPONSE

- Incident at Port Authority of Guam – Responded to Crane Operators getting sick and 2 being hospitalized. Attended meetings and provided internal incite, information, and investigation

REPORTING

- New Source Performance Standards (NSPS) Monthly– Submitted reports to GEPA for Macheche CT, Yigo CT, Talofofo, Manenggon and Tenjo Diesel Plants.

WASTE DISPOSAL

- Monitoring of UNITEK and GRESCO used oil disposal to the WOF

OTHERS

- Reviewed and approved bid for laboratory analysis PO
- Prepared a monitoring station estimate for the AGMET
- Provided comments of the Leidos Draft ESA Report
- Reviewed initial report from Leidos inspection of MEC 8 & 9 in preparation for an ESA Phase I assessment of the facility. Leidos to submit Phase I ESA of MEC 8&9 on January 06, 2018.
- Additional information regarding Multi Step Bid No. GPA-017-18: Provided responses to the questions from AM Insurance for GPA Pollution Insurance MSB:
    - as to the current status of the groundwater remediation at the Tanguisson Power Plant;
    - and provided status of Guam Power in terms of USEPA air quality requirements;
    - provided details on: pollution incidents, releases and spills, violations, corrective actions, law suits, claims, complaints and regulatory notices;
    - provided details on the maintenance, leak detection and inspection program for the LSFO and HSFO tanks at the Piti Tank Farm

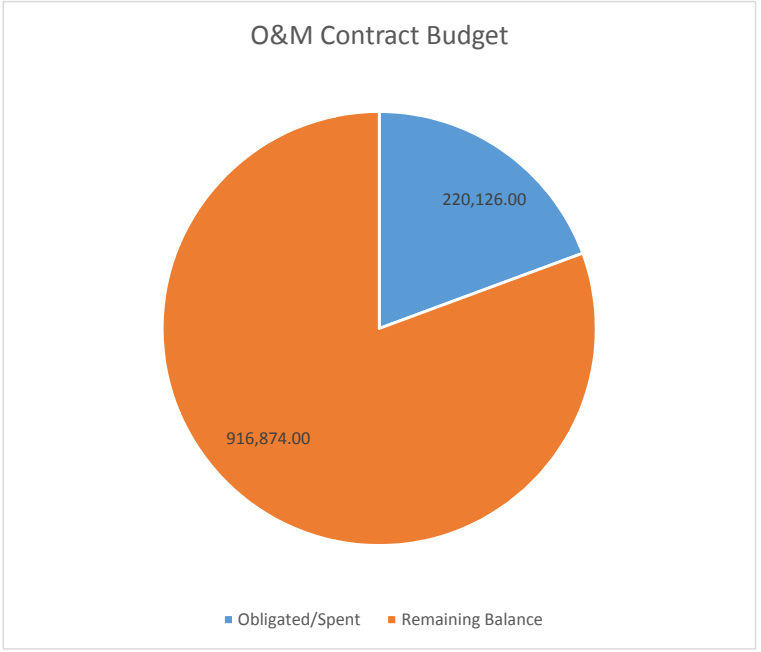
- GPA-017-18 - Broker Services & Pollution Liability Insurance - Provided data/information in response to questions from bidders
- RFP-17-005 Smart Grid - participated as a committee member
- Price Calculations – calculated the difference in price between using RFO and ULSD at the MEC 8&9 for the GM. Updated data up to 2020
- Fuel Use & Emissions for Consent Decree - Updated data to 2013 - Nov. 2017
- GM's Presentation to US EPA – updated information on ESP and Emissions in the power point presentation
- Carbon Capture – attended conference call with US EPA, Guam EPA, the Governor's Office, and the company Karbon CCs Ltd. regarding the use of Karbon's carbon capture technology for Guam source
- Energy Storage System Project (ESS) – reviewed and provided comments on Agana Sub tank and pipeline inspection report

Planning & Regulatory CCU Report

December 31, 2017

Planning & Regulatory O&M Contract Budget

- Revenue Funded
- Target
  - 7.41% O&M Obligated by November 16, 2017
  - 19.28 O&M Obligated as of Nov. 30, 2017 (actual)
  - 19.36 O&M Obligated as of Dec. 31, 2017 (actual)
  - 30.09% O&M Obligation by February 28, 2018



2

P&R Weekly & Monthly Inspection Reports

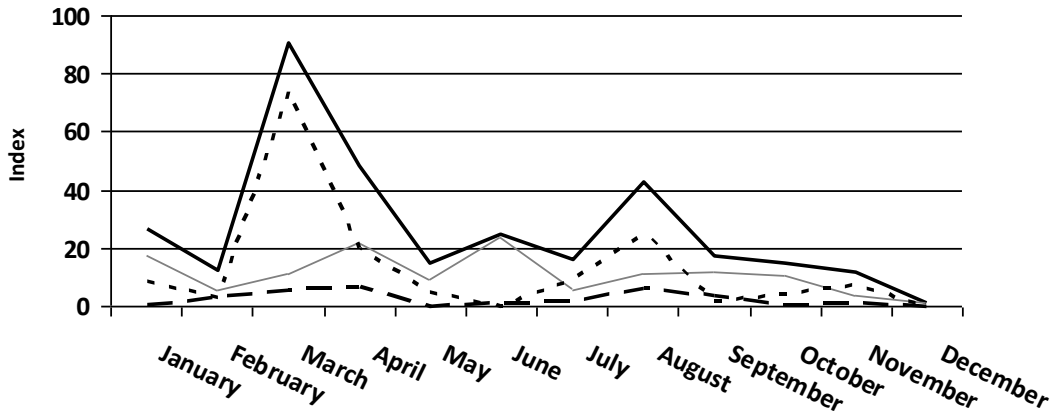
- Best Management Practices (BMP) Report Summary [Weekly]
- Generation Spill Prevention, Control, and Countermeasures (SPCC) Report Summary [Monthly]
- T&D Spill Prevention, Control, and Countermeasures (SPCC) Report Summary [Monthly]

- GPA is responsible to employees, the island environment, and the community to take all reasonable steps necessary to prevent spills from its facilities in order to protect human health and the environment

P&R Inspection Report Purpose

- The purpose of these inspections is to catch discrepancies and violations internally and correct them before inspections by Guam EPA and US EPA
- Regulatory Agencies can conduct scheduled or un-scheduled (surprise) inspections any time
- Any major discrepancies or violations cited can lead to issuance of a Notice of Violation (NOV), possible fines, and/or other enforcement action
- P&R conducts routine SPCC inspections in compliance with the requirements of 40CFR 112.7(a)(3)(ii), Discharge Prevention Measures

(Item 1.1,1.2,1.5) December 2017 SAIDI = 322.68 ↓ (345.38)



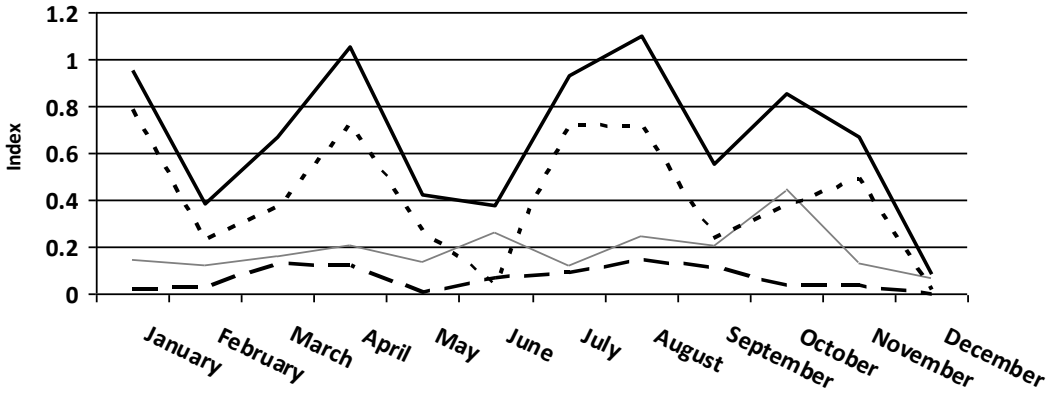
ALL

GEN=158.60 ↓ (168.36)

TRANS=30.85 (30.85) **UNC***

DIST=133.22 ↓ (146.16)

(Item 1.1,1.2,1.5) December 2017 SAIFI = 8.05 ↓ (8.89)



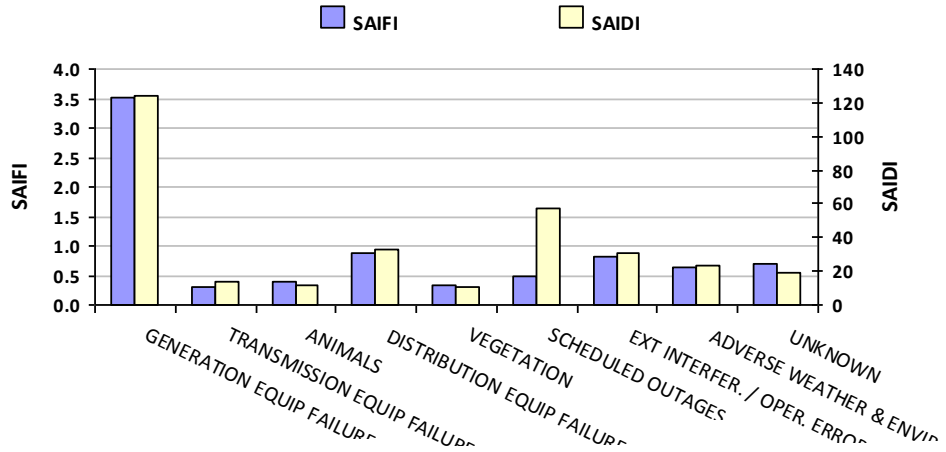
ALL

GEN=4.97 ↓ (5.67)

TRANS=0.81 (0.81) **UNC***

DIST=2.27 ↓ (2.41)

(Item 1.9) 12-Month Cause Contributions to Reliability



GENERATION EQUIP FAILURE
F:40.9% D:38.3%

TRANSMISSION EQUIP FAILURE
F:5.9% D:4.1%

ANIMALS
F:5.0% D:3.6%

DISTRIBUTION EQUIP FAILURE
F:10.7% D:10.3%

VEGETATION
F:4.6% D:3.3%

SCHEDULED OUTAGES
F:9.0% D:17.6%

EXT INTERFER. / OPER. ERROR
F:9.0% D:9.6%

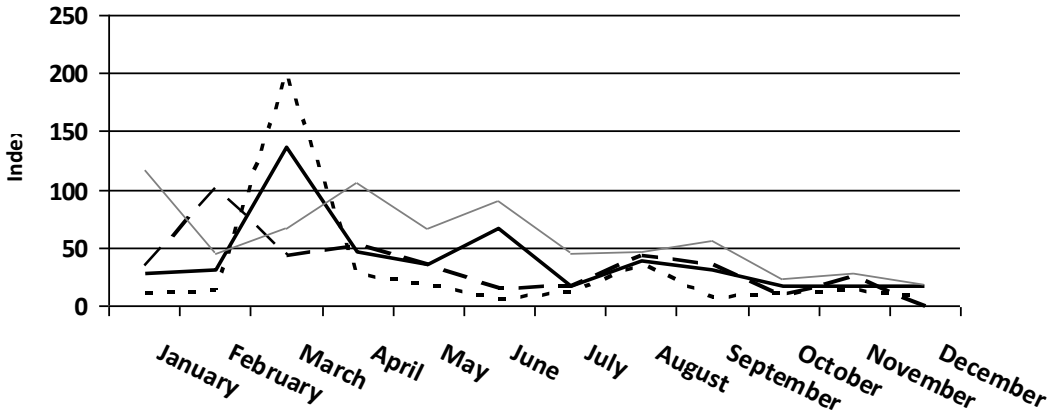
ADVERSE WEATHER & ENVIR.
F:5.9% D:7.2%

UNKNOWN
F:9.0% D:6.0%

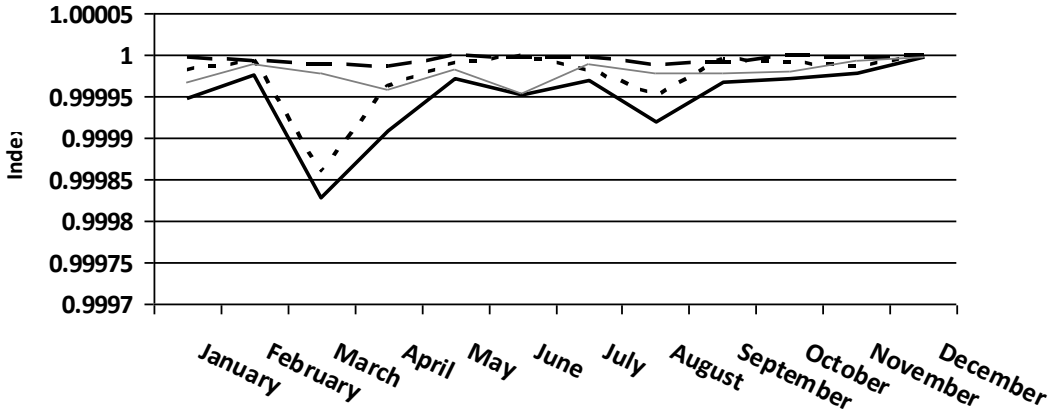
UNC* - Unchanged

As of December 31, 2017

(Item 1.1,1.2,1.5) December 2017 CAIDI = 40.09 ↑ (38.86)



(Item 1.1,1.2,1.5) December 2017 ASAI = 0.9994 ↑ (0.9993)



(Item 1.4) Top 5 Worst Feeders Distribution Causes

#	Feeder	Outage Count
1	P340	10
2	P261	9
3	P403	7
4	P221	7
5	P332	5

(Item 1.4) Top 5 Distribution Outage Causes

#	Outage Cause	Count
1	Overhead Equipment	35
2	Underground Equipment	16
3	Vegetation	13
4	Vehicles	8
5	Snakes	6

(Item 1.3) Outage Count

TOTAL	UFLS	Non-UFLS
477	251	226

(Item 1.3) UFLS Contribution to Reliability

SAIDI	SAIFI	CAIDI
148.25	4.76	31.15

UNC* - Unchanged

As of December 31, 2017

Production Data
31-Dec-17

SYSTEM											
YEAR	MONTH	# of DAYS	GROSS GENERATION	FUEL CONSUMPTION		GROSS FUEL EFFICIENCY (Target ≥ 15.99 kWh/gal)	COST per GROSS kWh	GROSS HEAT RATE (Baseloads) PUC Target less than 9,600	GROSS HEAT RATE (Peaking) PUC Target less than 13,600	Ave. MW	Peak MW
				(gal)	(bbl)						
2015	Oct	31	142,387,859	10,285,716	244,898	13.84	$ 0.1076	9,797.11	12,360.42	191	258
	Nov	30	140,522,664	9,871,651	235,039	14.23	$ 0.1185	9,731.04	12,945.82	195	248
	Dec	31	142,668,711	9,711,263	231,221	14.69	$ 0.0951	9,538.53	12,579.77	192	239
2016	Jan	31	138,191,484	9,446,289	224,912	14.63	$ 0.0676	9,662.86	13,413.90	186	233
	Feb	29	128,816,826	8,860,399	210,962	14.54	$ 0.0706	9,692.42	12,038.19	185	232
	Mar	31	139,991,832	9,522,573	226,728	14.70	$ 0.0732	9,172.99	11,597.00	188	239
	Apr	30	140,706,546	9,301,856	221,473	15.13	$ 0.0734	9,368.24	11,041.70	195	245
	May	31	152,815,417	9,751,521	232,179	15.67	$ 0.0681	9,459.10	11,388.57	205	254
	June	30	149,191,844	9,851,575	234,561	15.14	$ 0.0805	9,666.70	11,074.48	207	253
	July	31	151,248,202	10,443,028	248,644	14.48	$ 0.0920	9,477.71	12,208.87	203	258
	Aug	31	149,051,031	10,210,429	243,105	14.60	$ 0.0935	9,431.70	11,155.10	200	252
	Sept	30	142,069,206	9,829,773	234,042	14.45	$ 0.0956	9,509.75	11,393.73	197	256
	Oct	31	148,824,965	9,660,319	230,008	15.41	$ 0.0729	9,749.38	10,738.69	200	252
	Nov	30	145,293,562	9,427,636	224,468	15.41	$ 0.0901	9,714.47	10,786.30	202	252
	Dec	31	147,753,552	9,725,521	231,560	15.19	$ 0.0934	9,661.13	10,645.44	199	248
2017	Jan	31	142,960,618	9,226,278	219,673	15.49	$ 0.0913	9,620.29	10,965.71	192	234
	Feb	28	113,499,400	7,270,830	173,115	15.61	$ 0.0900	9,609.08	11,503.12	195	246
	Mar	31	149,402,182	9,664,440	230,106	15.46	$ 0.1014	9,719.35	11,440.45	201	246
	Apr	30	145,351,026	9,913,757	236,042	14.66	$ 0.1101	9,750.73	11,392.12	202	250
	May	31	157,573,506	11,065,930	263,475	14.24	$ 0.1170	10,067.14	11,323.20	212	256
	June	30	150,240,751	10,654,196	253,671	14.10	$ 0.1101	10,209.74	11,248.62	209	257
	July	31	150,580,050	10,622,458	252,916	14.18	$ 0.1169	9,544.54	11,837.62	202	252
	Aug	31	150,084,827	10,642,044	253,382	14.10	$ 0.1177	9,206.15	11,917.58	202	261
	Sept	30	143,990,208	10,309,304	245,460	13.97	$ 0.1152	9,541.20	13,107.05	200	254
	Oct	31	147,122,071	9,774,857	232,735	15.05	$ 0.1079	9,590.71	11,375.81	198	254
	Nov	30	147,284,781	9,783,352	232,937	15.05	$ 0.1061	9,563.85	11,257.17	205	253
	Dec	31	151,600,064	9,925,003	236,310	15.27	$ 0.1122	9,607.13	11,035.82	204	250

NET METERING
December 2017

	Quantity	Connected kVA
Completed	1,584	16,272
Pending	17	129
Grand Total	1,601	16,401

Rate Class

Schedule	Count	Total kW
R - Residential	1,504	13,534.37
J - General Service Demand	31	1,546.51
K - Small Government Demand	7	157.80
L - Large Government	1	22.80
P - Large Power	3	240.70
G - General Service Non-Demand	31	690.62
S - Small Government Non-Demand	7	78.80
Grand Total	**1,584**	**16,271.60**

Rate Class and Technology

Technology	Schedule	Count	Total kW
Solar Energy	R - Residential	1,502	13,530.77
	J - Gen Service Dmd	31	1,546.51
	K - Small Gov Dmd	7	157.80
	L - Large Government	1	22.80
	P - Large Power	3	240.70
	G - Gen Serv Non-Dmd	31	690.62
	S - Sm Gov Non-Dmd	7	78.80
Wind Turbine	R - Residential	2	3.60
Grand Total		**1,584**	**16,271.60**

Projected FY 2017 Non-Fuel Revenue Loss

Customer Rate Class	Renewable Energy Capacity (kW)	Annual kWh Generated (@5.092 hours/day)*	Average Non-Fuel Yield $/kWh	Estimated Annual Revenue Loss
R	13,534.37	25,153,062.7	0.09293	$ 2,337,499.27
J	1,546.51	2,874,124.4	0.13112	$ 376,858.07
K	157.80	293,264.7	0.13932	$ 40,858.23
L	22.80	42,372.9	0.13525	$ 5,730.84
P	240.70	447,330.9	0.11539	$ 51,617.07
G	690.62	1,283,488.5	0.15084	$ 193,596.27
S	78.80	146,446.5	0.15334	$ 22,456.26
Grand Total	**16,271.60**	**30,240,090.6**		**$ 3,028,616.00**

*Estimated number of hours from NREL for Guam (13.4 degrees North and 144 degrees East).

Estimated Annual Revenue Loss

Description	Estimated kWh	*Total Estimated Cost
FY17	28,242,917	$ 2,828,834.71
FY16	21,867,383	$ 2,200,794.56
FY15	7,383,621	$ 856,921.27
FY14	3,137,212	$ 410,558.94
FY13	1,556,949	$ 178,996.00
FY12	494,672	$ 58,545.89
FY11	170,070	$ 18,177.13
FY10	98,830	$ 8,483.27
FY09	23,912	$ 1,656.87

*Source for effective yield rate from the Year End Revenue Reports (12 month Average Yield)

NET METERING

December 2017

Customer Count and Connected kW by Feeder

Status	Feeder	Net Metering Connected kW	Customer Count	% of Feeder Maximum kW	% of Feeder Minimum Daytime kW
Completed	P-005	210.27	21	12.2%	24.5%
	P-046	193.57	24	4.6%	7.0%
	P-088	603.78	67	10.0%	15.9%
	P-089	436.80	55	9.8%	23.5%
	P-111	60.00	1	1.1%	2.0%
	P-203	401.36	31	5.4%	15.2%
	P-204	118.08	15	2.5%	5.2%
	P-205	36.40	4	0.8%	1.3%
	P-210	473.46	49	9.3%	12.6%
	P-212	831.57	79	20.1%	52.0%
	P-213	295.33	11	11.3%	15.2%
	P-220	155.14	17	25.5%	80.0%
	P-221	461.34	48	10.5%	20.9%
	P-223	487.96	53	20.5%	29.3%
	P-240	58.55	2	0.9%	7.9%
	P-245	25.00	1	0.5%	1.1%
	P-250	878.19	90	13.5%	23.7%
	P-251	145.50	7	5.9%	9.0%
	P-253	453.71	49	10.1%	15.9%
	P-262	920.00	95	24.2%	57.9%
	P-270	313.67	26	6.2%	12.4%
	P-271	122.78	12	2.1%	4.4%
	P-272	221.03	16	8.6%	19.6%
	P-280	311.59	25	17.3%	32.2%
	P-281	129.70	3	4.6%	12.9%
	P-282	21.00	2	0.6%	1.7%
	P-283	485.05	46	13.4%	23.0%
	P-294	956.99	93	22.1%	43.8%
	P-301	199.26	22	14.1%	25.1%
	P-311	549.83	47	13.8%	23.6%
	P-322	803.14	86	10.6%	21.0%
	P-323	274.41	17	5.8%	18.0%
	P-330	518.62	65	9.5%	19.2%
	P-331	694.84	80	11.0%	17.8%
	P-332	384.46	46	6.8%	10.0%
	P-340	497.37	43	27.4%	60.4%
	P-087	1,032.25	112	26.3%	41.2%
	P-252	416.01	24	9.9%	20.1%
	P-321	246.63	24	4.4%	4.9%
	P-260	45.99	5	6.7%	23.0%
	P-067	68.25	10	0.8%	1.0%
	P-312	68.90	4	4.1%	4.8%
	P-206	18.33	2	1.9%	3.4%
	P-242	23.75	2	0.4%	1.1%
	P-310	181.57	8	6.6%	12.1%
	P-261	313.57	33	11.3%	19.5%
	P-201	40.00	5	1.1%	2.0%
	P-007	42.33	4	5.8%	12.5%
	P-244	18.00	1	1.0%	1.0%
	P-202	22.00	1	0.7%	1.6%
	P-341	4.30	1	0.4%	1.6%
Completed Total		**16,271.60**	**1,584**		
Pending	Pending	129.41	17	0.0%	0.0%
Pending Total		**129.41**	**17**	**0.0%**	**0.0%**
Grand Total		**16,401.01**	**1,601**		

Feeders highlighted in red indicates renewable energy capacity has exceeded 25% of minimum daytime load.

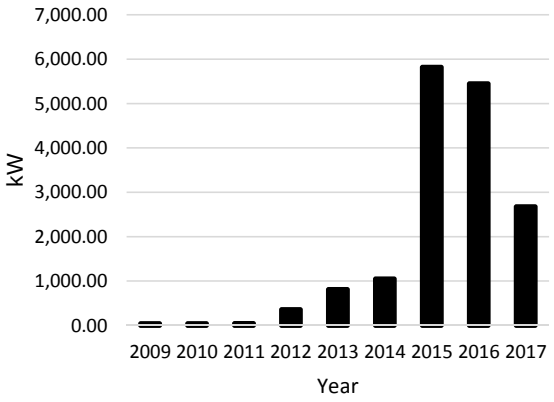
Feeders highlighted in yellow indicates renewable energy capacity has reached 15% to 24% of minimum daytime load.

NET METERING
DECEMBER 2017

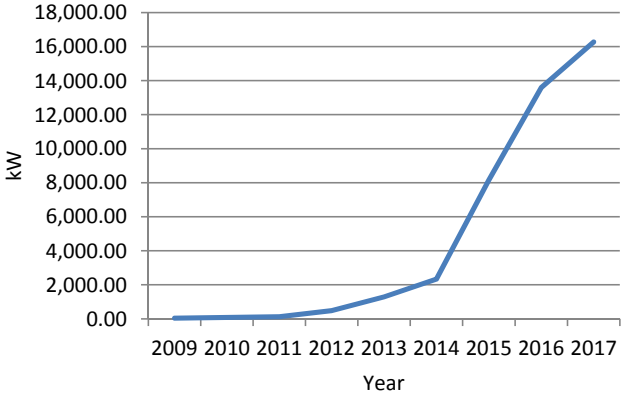
Installed kW by Year		
Year	Total	Cumulative
2009	39.46	39.46
2010	39.20	78.66
2011	43.61	122.27
2012	354.61	476.88
2013	808.45	1,285.33
2014	1,046.54	2,331.87
2015	5,818.34	8,150.21
2016	5,446.95	13,597.15
2017	2,674.45	16,271.60
Grand Total	16,271.60	

Customer Count by Year		
Year	Total	Cumulative
2009	7	7
2010	2	9
2011	7	16
2012	27	43
2013	67	110
2014	94	204
2015	561	765
2016	528	1,293
2017	291	1,584
Grand Total	1,584	

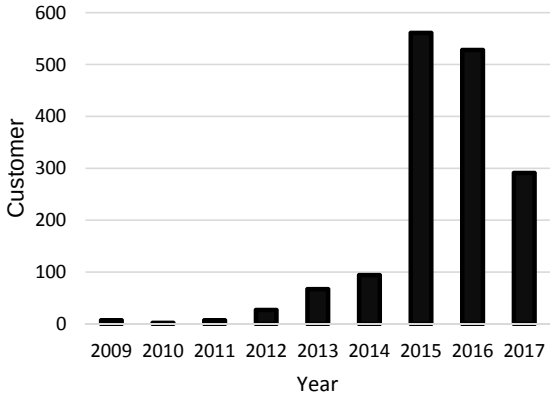
Yearly Installed kW



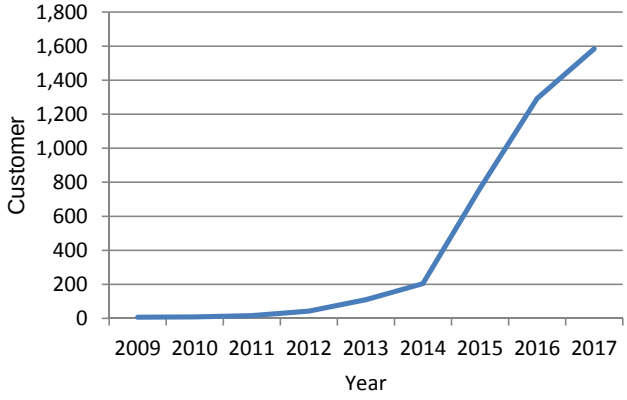
Cumulative Installed kW



Yearly Connected Customer Count



Cumulative Connected Customer Count

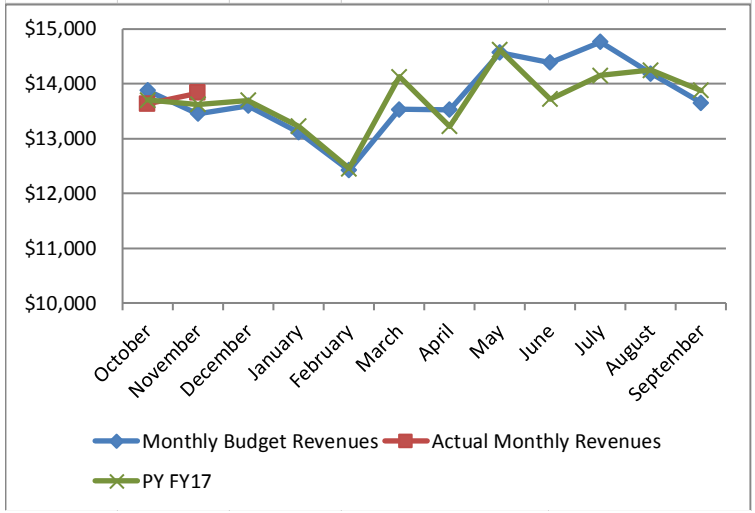


November 2017 Monthly Financial Highlight

Base Revenue Through November 30, 2017

$000	Monthly Budget Revenues	Actual Monthly Revenues	Variance		PY FY17	CY vs PY Variance	
October	$ 13,873	$ 13,625	$ (248)	↓	$ 13,702	$ (77)	↓
November	13,451	13,827	$ 376	↑	13,622	$ 205	↑
December	13,599				13,695		
January	13,114				13,220		
February	12,422				12,454		
March	13,534				14,123		
April	13,525				13,224		
May	14,568				14,617		
June	14,386				13,722		
July	14,759				14,151		
August	14,183				14,244		
September	13,651				13,874		
Total	**$ 165,064**	**$ 27,452**	**$ 128**		**$ 164,649**	**$ 128**	

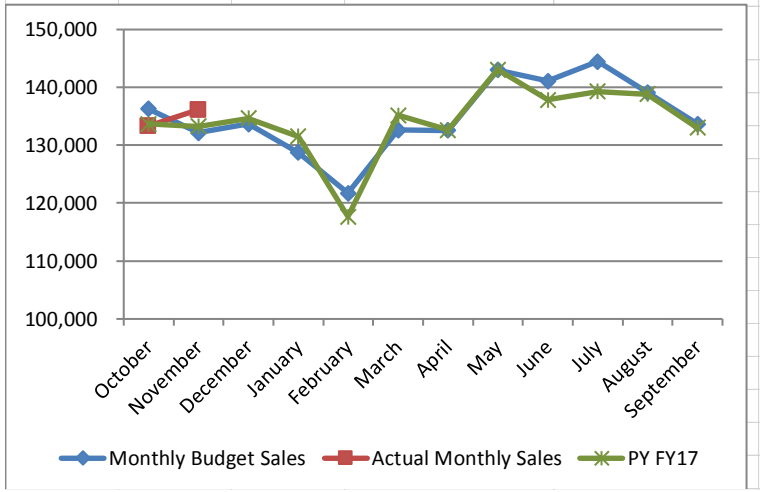
Base Rate Revenue $000



MWHSThrough November 30, 2017

mwh	Monthly Budget Sales	Actual Monthly Sales	Variance		PY FY17	CY vs PY Variance	
October	136,219	133,262	(2,957)	↓	133,620	(358)	↓
November	132,132	136,044	3,912	↑	133,235	2,809	↑
December	133,625				134,634		
January	128,711				131,461		
February	121,668				117,617		
March	132,587				135,131		
April	132,532				132,587		
May	142,956				143,013		
June	141,064				137,777		
July	144,404				139,227		
August	139,093				138,797		
September	133,658				132,993		
Total	**1,618,650**	**269,306**	**955**		**1,610,093**	**2,450**	

MWh Sales

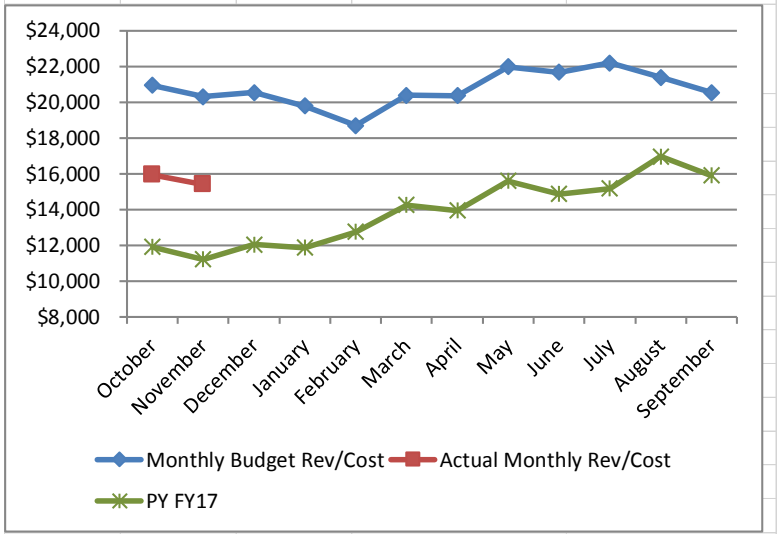


November 2017 Monthly Financial Highlight (Continued)

Fuel Revenue Through November 30, 2017

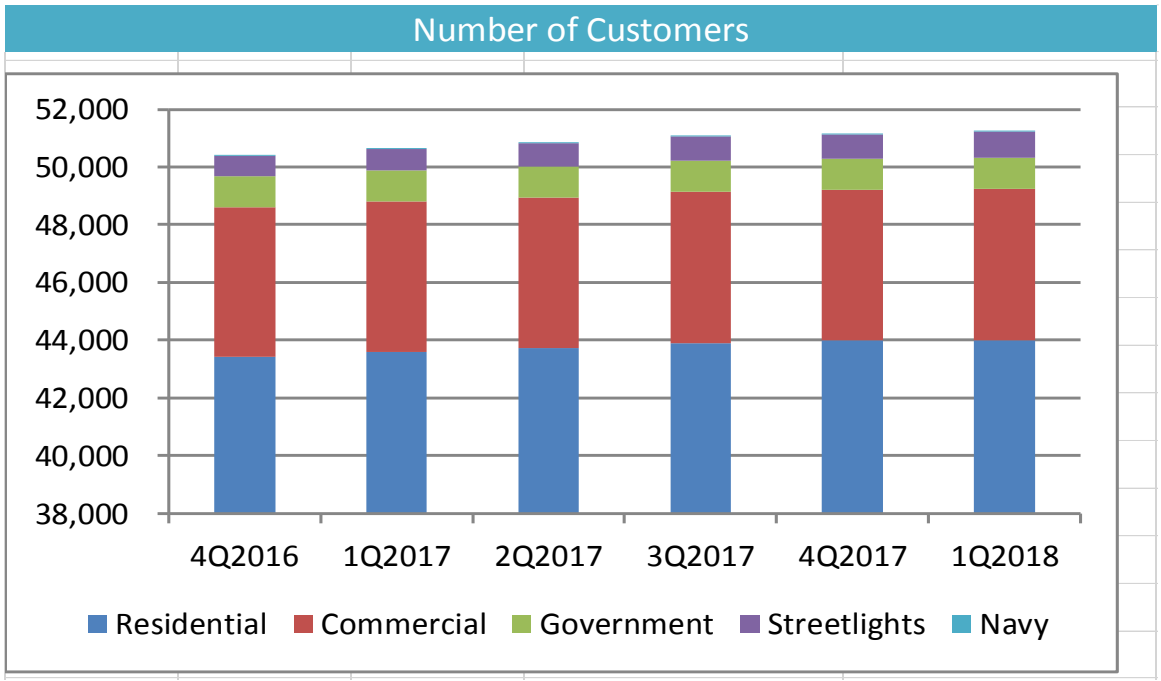
$000	Monthly Budget Rev/Cost	Actual Monthly Rev/Cost	Variance		PY FY17	CY vs PY Variance	
October	$ 20,928	$ 15,936	$ (4,992)	↓	$ 11,894	$ 4,042	↑
November	20,300	15,400	$ (4,899)	↓	11,215	$ 4,185	↑
December	20,529				12,036		
January	19,774				11,867		
February	18,692				12,751		
March	20,370				14,248		
April	20,361				13,940		
May	21,963				15,596		
June	21,672				14,859		
July	22,185				15,175		
August	21,369				16,947		
September	20,534				15,895		
Total	**$ 248,677**	**$ 31,336**	**$ (9,891)**		**$ 166,425**	**$ 8,227**	

Fuel Revenue/ Cost $000



November 2017 Monthly Financial Highlight (Continued)

Number of Customers						
	4Q2016	1Q2017	2Q2017	3Q2017	4Q2017	1Q2018
Residential	43,408	43,582	43,718	43,902	43,991	43,996
Commercial	5,198	5,235	5,236	5,252	5,226	5,233
Government	1,089	1,071	1,077	1,071	1,073	1,079
Streetlights	688	722	800	824	823	905
Navy	1	1	1	1	1	1
	50,384	50,611	50,832	51,050	51,114	51,214

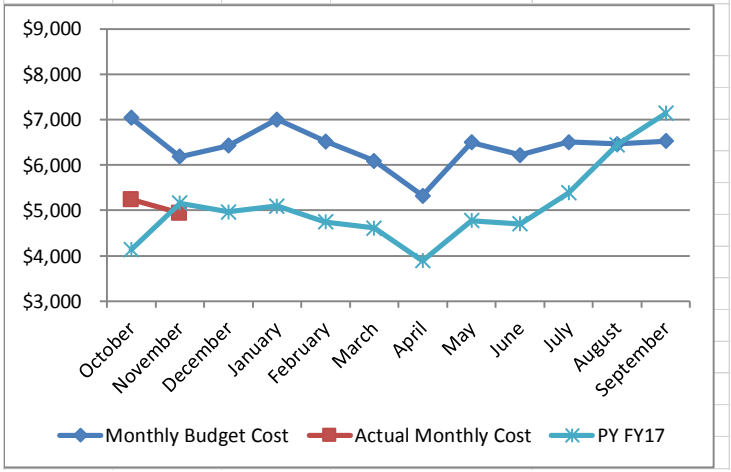


November 2017 Monthly Financial Highlight (Continued)

O&M Through November 30, 2017

$000	Monthly Budget Cost	Actual Monthly Cost	Variance		PY FY17	CY vs PY Variance	
October	$ 7,040	5,239	1,801	↑	4,135	(1,103)	↓
November	6,182	4,941	1,240	↑	5,158	217	↑
December	6,428				4,966		
January	7,001				5,092		
February	6,522				4,748		
March	6,091				4,612		
April	5,320				3,892		
May	6,495				4,772		
June	6,221				4,702		
July	6,508				5,385		
August	6,462				6,445		
September	6,526				7,138		
Total	**$ 76,796**	**$ 10,180**	**$ 3,042**		**$ 61,045**	**$ (887)**	

O&M Cost $000



- DSC greater than target of 1.75

Debt service coverage (DSC) calculation-indenture	2012	2013	2014	2015	2016	2017	YTD Nov. 2017
Senior lien coverage	2.13	3.36	3.16	3.62	3.35	2.81	2.97
Aggregate debt service coverage	1.35	1.88	1.98	2.62	3.35	2.81	2.97
Debt service coverage (DSC) calculation-IPP as O&M							
Senior lien coverage	1.29	2.16	2.25	2.56	2.52	1.95	2.03
Aggregate debt service coverage	0.82	1.21	1.41	1.85	2.52	1.95	2.03