

28 **WHEREAS**, the table below represents the projected savings of potential award cases
 29 subject to the completion of the system impact studies and bidders' acceptance of the requirements
 30 generated from the study. **Exhibit C** 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	Hanwha Proposal 1 Only (30MW) and KEPCO Proposal 1&2 (60MW)	90 MW	\$ 38,752,618	\$ 72,670,440	\$ 313,466,966
2	Hanwha Proposal 1&2 (60MW) and KEPCO Proposal 1&2 (60MW)	120MW	\$ 43,290,919	\$ 88,266,040	\$ 417,315,926

31

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

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

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

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

40 **WHEREAS**, the award of 120MW is projected to increase GPA's ratio of renewable
 41 energy to sales up to 23% by 2020. **Exhibit E** is a projected RPS outlook; and

42 **WHEREAS**, the system impact study is an iterative and complicated process that will set
 43 the conditions and boundaries for the project to interconnect and operate on the GPA electric grid
 44 system; and

45 **WHEREAS, the system impact study will not change the bidders' priced proposals;**
 46 and

47 **WHEREAS**, the bid documents allow the bidders to withdraw any proposal without penalty
 48 if the bidder cannot comply with the system impact study within the bidders' priced proposals; and

49 WHEREAS, GPA would like to proceed with an approval to award a potential total of
50 120MW of renewable energy capacity contracts subject to the completion of the System Impact
51 Study.

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

- 55 1. The CCU authorizes GPA to petition the PUC for approval to award Phase II Renewable
56 Acquisition Bid of two 30MW proposals each to Hanwha Energy Corporation & Pacific
57 Petroleum Trading Corp. and KEPCO-LG CNS Consortium as required under the PUC
58 Procurement Protocol.
- 59 2. The CCU authorizes GPA to contract Hanwha Energy Corporation & Pacific Petroleum
60 Trading Corp. and KEPCO-LG CNS Consortium for renewable energy subject to System
61 Impact Studies and PUC approval.

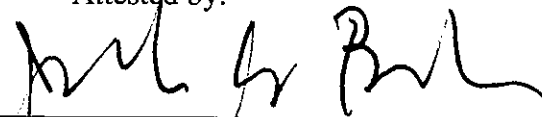
62 RESOLVED, that the Chairman certifies and the Board Secretary attests to the adoption of
63 this Resolution.

64 DULY AND REGULARLY ADOPTED AND APPROVED THIS 6 DAY OF JUNE
65 2017.

66 Certified by:

Attested by:

67 
68 _____
69

70 
71 _____
72

71 JOSEPH T. DUENAS
72 Chairperson
73 Consolidated Commission on Utilities

71 J. GEORGE BAMBA
72 Secretary
73 Consolidated Commission on Utilities

74
75 I, J. George Bamba, Secretary for the Consolidated Commission on Utilities (CCU), as
76 evidenced by my signature above do certify as follows:

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

81
82 Ayes: 5

RESOLUTION NO: 2017-25

83

84

Nays: 0

85

86

Absent: 0

87

88

Abstain: 0

EXHIBIT A

Summary of Bid Proposals

Hanwha Energy Corporation & Pacific Petroleum Trading Corp.

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	\$ 62.45	72,005.00	\$ 65.99	72,005.00
2	\$ 63.08	71,831.00	\$ 66.65	71,831.00
3	\$ 63.71	71,245.00	\$ 67.32	71,245.00
4	\$ 64.35	70,865.00	\$ 67.99	70,865.00
5	\$ 64.99	70,485.00	\$ 68.67	70,485.00
6	\$ 65.64	70,306.00	\$ 69.36	70,306.00
7	\$ 66.30	69,724.00	\$ 70.05	69,724.00
8	\$ 66.96	69,344.00	\$ 70.75	69,344.00
9	\$ 67.63	68,693.00	\$ 71.46	68,693.00
10	\$ 68.31	68,780.00	\$ 72.17	68,780.00
11	\$ 68.99	68,202.00	\$ 72.89	68,202.00
12	\$ 69.68	67,821.00	\$ 73.62	67,821.00
13	\$ 70.37	67,440.00	\$ 74.36	67,440.00
14	\$ 71.08	67,252.00	\$ 75.10	67,252.00
15	\$ 71.79	66,678.00	\$ 75.85	66,678.00
16	\$ 72.51	66,296.00	\$ 76.61	66,296.00
17	\$ 73.23	65,915.00	\$ 77.38	65,915.00
18	\$ 73.96	65,722.00	\$ 78.15	65,722.00
19	\$ 74.70	65,151.00	\$ 78.93	65,151.00
20	\$ 75.45	64,770.00	\$ 79.72	64,770.00
21	\$ 76.21	64,388.00	\$ 80.52	64,388.00
22	\$ 76.97	64,190.00	\$ 81.33	64,190.00
23	\$ 77.74	63,623.00	\$ 82.14	63,623.00
24	\$ 78.52	63,241.00	\$ 82.96	63,241.00
25	\$ 79.30	62,859.00	\$ 83.79	62,859.00

KEPCO-LG CNS Consortium

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

Summary of Hanwha Energy & Microgrid Operations Bid Proposal for 60MW Award

Hanwha Energy Corporation & Pacific Petroleum Trading Corp.

Contract Year	Proposal 1					Proposal 2				
	Annual Price (\$/MWH)	Guaranteed Net Annual Generation (MWH/YR)	MicroGrid Operations Fixed Annual Fee	Microgrid Cost, \$/MWH (based on Guarantee)*	Adjusted Rate	Annual Price (\$/MWH)	Guaranteed Net Annual Generation (MWH/YR)	MicroGrid Operations Fixed Annual Fee	Microgrid Cost, \$/MWH (based on Guarantee)*	Adjusted Rate
1	\$ 65.99	72,005.00	1,287,082	\$ 17.87	83.86	\$ 62.45	72,005.00	1,287,082	\$ 17.87	80.32
2	\$ 66.65	71,831.00	1,264,710	\$ 17.61	84.26	\$ 63.08	71,831.00	1,264,710	\$ 17.61	80.69
3	\$ 67.32	71,245.00	1,244,969	\$ 17.47	84.79	\$ 63.71	71,245.00	1,244,969	\$ 17.47	81.18
4	\$ 67.99	70,865.00	1,225,229	\$ 17.29	85.28	\$ 64.35	70,865.00	1,225,229	\$ 17.29	81.64
5	\$ 68.67	70,485.00	1,206,804	\$ 17.12	85.79	\$ 64.99	70,485.00	1,206,804	\$ 17.12	82.11
6	\$ 69.36	70,306.00	1,188,380	\$ 16.90	86.26	\$ 65.64	70,306.00	1,188,380	\$ 16.90	82.54
7	\$ 70.05	69,724.00	1,171,271	\$ 16.80	86.85	\$ 66.30	69,724.00	1,171,271	\$ 16.80	83.10
8	\$ 70.75	69,344.00	1,155,479	\$ 16.66	87.41	\$ 66.96	69,344.00	1,155,479	\$ 16.66	83.62
9	\$ 71.46	68,693.00	1,139,686	\$ 16.59	88.05	\$ 67.63	68,693.00	1,139,686	\$ 16.59	84.22
10	\$ 72.17	68,780.00	1,123,894	\$ 16.34	88.51	\$ 68.31	68,780.00	1,123,894	\$ 16.34	84.65
11	\$ 72.89	68,202.00	1,108,101	\$ 16.25	89.14	\$ 68.99	68,202.00	1,108,101	\$ 16.25	85.24
12	\$ 73.62	67,821.00	1,093,625	\$ 16.13	89.75	\$ 69.68	67,821.00	1,093,625	\$ 16.13	85.81
13	\$ 74.36	67,440.00	1,079,149	\$ 16.00	90.36	\$ 70.37	67,440.00	1,079,149	\$ 16.00	86.37
14	\$ 75.10	67,252.00	1,064,672	\$ 15.83	90.93	\$ 71.08	67,252.00	1,064,672	\$ 15.83	86.91
15	\$ 75.85	66,678.00	1,051,512	\$ 15.77	91.62	\$ 71.79	66,678.00	1,051,512	\$ 15.77	87.56
16	\$ 76.61	66,296.00	1,038,352	\$ 15.66	92.27	\$ 72.51	66,296.00	1,038,352	\$ 15.66	88.17
17	\$ 77.38	65,915.00	1,025,191	\$ 15.55	92.93	\$ 73.23	65,915.00	1,025,191	\$ 15.55	88.78
18	\$ 78.15	65,722.00	1,012,031	\$ 15.40	93.55	\$ 73.96	65,722.00	1,012,031	\$ 15.40	89.36
19	\$ 78.93	65,151.00	998,871	\$ 15.33	94.26	\$ 74.70	65,151.00	998,871	\$ 15.33	90.03
20	\$ 79.72	64,770.00	987,026	\$ 15.24	94.96	\$ 75.45	64,770.00	987,026	\$ 15.24	90.69
21	\$ 80.52	64,388.00	975,182	\$ 15.15	95.67	\$ 76.21	64,388.00	975,182	\$ 15.15	91.36
22	\$ 81.33	64,190.00	963,338	\$ 15.01	96.34	\$ 76.97	64,190.00	963,338	\$ 15.01	91.98
23	\$ 82.14	63,623.00	951,493	\$ 14.96	97.10	\$ 77.74	63,623.00	951,493	\$ 14.96	92.70
24	\$ 82.96	63,241.00	939,649	\$ 14.86	97.82	\$ 78.52	63,241.00	939,649	\$ 14.86	93.38
25	\$ 83.79	62,859.00	927,805	\$ 14.76	98.55	\$ 79.30	62,859.00	927,805	\$ 14.76	94.06

EXHIBIT C
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	Hanwha Proposal 1 Only (30MW) and KEPCO Proposal 1&2 (60MW)	90 MW	\$ 38,752,618	\$ 72,670,440	\$ 313,466,966
2	Hanwha Proposal 1&2 (60MW) and KEPCO Proposal 1&2 (60MW)	120MW	\$ 43,290,919	\$ 88,266,040	\$ 417,315,926

EXHIBIT C

CASE 1 - Hanwha Proposal 1 (30MW) and 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 Hanwha Proposal 1 Energy Rate (\$/MWH)	62.45	63.08	63.71	64.35	64.99	
2 Energy Guarantee (MWH)	72,005	71,831	71,245	70,865	70,485	
3 KEPCO Proposal 1 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 KEPCO Proposal 2 Energy Rate (\$/MWH)	85.50	86.35	87.22	88.09	88.97	
6 Energy Guarantee (MWH)	74,542.29	73,974.68	73,604.26	73,233.84	73,058.88	
7 Phase II Energy Costs (120MW)	\$ 17,243,315	\$ 17,307,136	\$ 17,378,202	\$ 17,462,478	\$ 17,581,025	\$ 86,972,157
8 Current LEAC Rate ¹ (\$/MWH)	115	115	115	115	115	
9 Current Energy Costs	\$ 25,425,302	\$ 25,274,741	\$ 25,122,155	\$ 24,993,259	\$ 24,909,317	\$ 125,724,774
10 Proposed Savings	\$ 8,181,987	\$ 7,967,605	\$ 7,743,953	\$ 7,530,781	\$ 7,328,292	\$ 38,752,618

Year	2019	2020	2021	2022	2023	TOTALS
11 Projected LEAC Rate ² (\$/MWH)	122.27	140.02	154.63	154.03	159.65	
12 Projected Energy Costs	\$ 27,032,806	\$ 30,773,935	\$ 33,779,259	\$ 33,476,173	\$ 34,580,424	\$ 159,642,597
13 Proposed Savings	\$ 9,789,491	\$ 13,466,799	\$ 16,401,056	\$ 16,013,695	\$ 16,999,399	\$ 72,670,440

STRATEGIST CASE SUMMARY

	Base Case (No Phase II)	Case 1 (90MW)	SAVINGS
Present Value Utility Cost ³ (\$000)	6,896,417	6,582,950	313,467

Notes:

1. The Current 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 generation 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

CASE 2 - Hanwha Proposal 1&2 (60MW) and 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 Hanwha Proposal 1 Energy Rate (\$/MWH)	62.45	63.08	63.71	64.35	64.99	
2 Energy Guarantee (MWH)	72,005	71,831	71,245	70,865	70,485	
3 Hanwha Proposal 2 Energy Rate (\$/MWH)	65.99	66.65	67.32	67.99	68.67	
4 Energy Guarantee (MWH)	72,005	71,831	71,245	70,865	70,485	
5 Hanwha Microgrid Operations Option	\$ 2,574,164	\$ 2,529,420	\$ 2,489,938	\$ 2,450,458	\$ 2,413,608	
6 KEPCO Proposal 1 Energy Rate (\$/MWH)	85.50	86.35	87.22	88.09	88.97	
7 Energy Guarantee (MWH)	74,542.29	73,974.68	73,604.26	73,233.84	73,058.88	
8 KEPCO Proposal 2 Energy Rate (\$/MWH)	85.50	86.35	87.22	88.09	88.97	
9 Energy Guarantee (MWH)	74,542.29	73,974.68	73,604.26	73,233.84	73,058.88	
10 Phase II Energy Costs (120MW)	\$ 24,569,089	\$ 24,624,093	\$ 24,664,354	\$ 24,731,048	\$ 24,834,838	\$ 123,423,421
11 Current LEAC Rate ¹ (\$/MWH)	115	115	115	115	115	
12 Current Energy Costs	\$ 33,705,877	\$ 33,535,306	\$ 33,315,330	\$ 33,142,734	\$ 33,015,092	\$ 166,714,339
13 Proposed Savings	\$ 9,136,788	\$ 8,911,213	\$ 8,650,976	\$ 8,411,687	\$ 8,180,254	\$ 43,290,919

Year	2019	2020	2021	2022	2023	TOTALS
14 Projected LEAC Rate ² (\$/MWH)	122.27	140.02	154.63	154.03	159.65	
15 Projected Energy Costs	\$ 35,836,916	\$ 40,831,807	\$ 44,795,805	\$ 44,391,646	\$ 45,833,287	\$ 211,689,461
16 Proposed Savings	\$ 11,267,827	\$ 16,207,714	\$ 20,131,451	\$ 19,660,599	\$ 20,998,449	\$ 88,266,040

STRATEGIST CASE SUMMARY

	Base Case (No Phase II)	Case 2 (120MW)	SAVINGS
Present Value Utility Cost ³ (\$000)	6,896,417	6,479,101	417,316

Notes:

1. The Current 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 generation 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 D
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 E

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

RPS PROJECTIONS

	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	110,334	-		219,578	1,557,331	14%	5%
2020	57,629	50,992	482	143,840	112,165		365,108	1,558,272	23%	8%
2021	57,629	50,601	482	142,668	130,325	80,510	462,215	1,547,800	30%	8%
2022	57,629	50,393	482	141,908	129,087	80,175	459,674	1,544,574	30%	8%
2023	57,629	50,083	482	141,148	128,288	79,740	457,370	1,544,540	30%	8%
2024	57,629	49,781	482	140,791	127,830	79,520	456,032	1,550,854	29%	8%
2025	57,629	49,599	482	139,627	126,689	78,911	452,937	1,566,472	29%	10%
2026	57,629	49,391	482	138,866	125,890	78,585	450,843	1,577,646	29%	10%
2027	57,629	49,122	482	138,105	125,091	78,102	448,531	1,597,005	28%	10%
2028	57,629	48,987	482	137,739	124,624	77,631	447,092	1,614,448	28%	10%
2029	57,629	48,612	482	136,582	123,492	77,348	444,145	1,620,517	27%	10%
2030	57,629	48,411	482	135,821	122,693	77,023	442,058	1,631,977	27%	15%
2031	57,629	48,147	482	135,059	121,894	76,604	439,814	1,644,069	27%	15%
2032	57,629	48,017	482	134,683	121,418	76,393	438,622	1,661,486	26%	15%
2033	57,629	47,649	482	133,534	120,295	75,808	435,397	1,670,464	26%	15%
2034	57,629	47,451	482	132,772	119,496	75,495	433,324	1,684,195	26%	15%
2035	57,629	47,191	482	132,009	118,696	75,083	431,090	1,698,373	25%	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

