



CONSOLIDATED COMMISSION ON UTILITIES

Guam Power Authority • Guam Waterworks Authority
P.O. BOX 2977 • Agana, Guam 96932

RESOLUTION NO. 2016-36

RELATIVE TO AUTHORIZING GPA TO PROCEED WITH THE IMPLEMENTATION OF THE UPDATED INTEGRATED RESOURCE PLAN FOR THE PROCUREMENT OF UP TO 180MW OF COMBINED CYCLE UNITS

WHEREAS, the Consolidated Commission on Utilities (CCU) is the governing body for the Guam Power Authority; and

WHEREAS, utilities, including the Guam Power Authority, periodically update their Integrated Resource Plan (IRP); and

WHEREAS, the CCU had previously approved the IRP under Resolution 2014-48 on October 27, 2014 and authorized GPA to pursue PUC approval of the plan; and

WHEREAS, the PUC ordered GPA under Docket 15-05 to update the IRP in consideration of the Cabras 3&4 power plant explosion of August 31, 2015; and

WHEREAS, the results of the updated IRP indicate that GPA should procure up to 180MW of combined cycle units in order to meet the Public Utilities Commission (PUC) approved reliability standard; and

WHEREAS, GPA should continue to pursue about 120MW of renewable energy resources while installing new conventional generation which improves efficiency through modernized technology; and

WHEREAS, new combined cycle units are more efficient than the existing Base Load units and would result in the consumption of less fuel which help offset the higher cost of Ultra Low Sulfur Diesel (ULSD); and

WHEREAS, the combined cycle units should be procured to operate on ULSD and Liquefied Natural Gas (LNG) for fuel diversity; and

WHEREAS, combined cycle units are fast reacting units and work well with intermittent type renewables such as Solar PV and Wind Power; and

WHEREAS, the key driver of the IRP development is the need for GPA base load generating units to comply with recently implemented environmental regulations promulgated by the United States Environmental Protection Agency (USEPA) under the Clean Air Act; and

WHEREAS, some of these environmental regulations issued by USEPA include the Reciprocating Internal Combustion Engine -Maximum Achievable Control Technology (RICE MACT) rules and the Electric Generating Utility- Mercury and Air Toxic Standards (EGU MATS) rules; and

1 **WHEREAS**, the RICE-MACT rules govern GPA's slow speed diesel generators as well as its small
2 diesel generators and has a compliance date of May 3, 2013; and

3 **WHEREAS**, GPA has complied with the RICE MACT rules for the small diesel generators and
4 spent approximately \$4.1 million for stack emission equipment to bring the units into compliance in
5 FY2014;

6 **WHEREAS**, a recent study estimates the cost for RICE MACT compliance for MEC 8&9 would be
7 \$13 million to bring MEC 8&9 into compliance by burning ULSD; and

8 **WHEREAS**, Cabras 4 is deemed as beyond repair and thus no longer needs to be placed into
9 compliance with the new regulations; and

10 **WHEREAS**, the disposition of Cabras 3 unit is uncertain due to ongoing negotiations with
11 insurers and may at best be repaired for operation while new combined cycle units are constructed and
12 retired thereafter due to higher operating cost, limited operations and Clean Water Act regulations
13 which would require additional mitigation investments; and

14 **WHEREAS**, the EGU-MACT rules impact the operations of GPA's steam generating plants- Cabras
15 1&2 and Tanguisson 1&2; and

16 **WHEREAS**, GPA has decommissioned Tanguisson 1&2 and thus no longer must bring them into
17 compliance; and

18 **WHEREAS**, GPA is reluctant to make major life extension investments into the Cabras 1&2
19 power plants since they are about 42 years old and are nearing the end of their useful lives and that
20 there have been substantial technology improvements since the plants were first constructed and the
21 thermal efficiencies of the plant is relatively low and there would be no efficiency gains resulting from
22 this significant investment; and

23 **WHEREAS**, upon the completion of the construction of up to 180 megawatts of dual fired new
24 generation, GPA plans to retire the Cabras 1 &2 power plant; and

25 **WHEREAS**, the plan has looked at the impact of other variables including the level of demand
26 for electricity over the next thirty (30) years, the development of additional renewable energy
27 resources, the impact of demand side management programs on GPA's load, the ability to enter into
28 demand response agreements with government and commercial customers, the cost of load leveling
29 and peak shaving energy storage solutions; and

30 **WHEREAS**, GPA plans to continue using the model in which the new generation facilities are
31 operated and maintained by an independent power producer; and

32 **WHEREAS**, in accordance with the recommendation of the updated IRP, GPA continues to
33 improve and increase renewable penetration by:

- 1 • Reissuing the Phase II Bid with an increase capacity award potential to 60 MW for all
- 2 renewable energy technologies;
- 3 • Developing about 40 MW of Solar PV Renewables on Navy Properties;
- 4 • Evaluating the grid capacity for increased intermittent renewable penetration;
- 5 • Revising the GPA Energy Storage System bid to address frequency regulation for the
- 6 NRG PV Plant and the Net Metering installed renewable capacity;
- 7 • Evaluating energy storage systems for load shifting/peak shaving functions;
- 8 • Partnering with Navy on the development of an additional 120 MW of renewable
- 9 projects;

10 **WHEREAS**, GPA also continues to explore opportunities to utilize energy storage solutions for
11 energy shifting in the grid; however, these systems are currently costly and just evolving indicating
12 limited experience on a large scale in the electrical grid, but is expected to make a positive impact in
13 systems at substantially lower cost in the near future; and

14 **WHEREAS**, there is uncertainty inherent in all forecasts in determining the most efficient size of
15 generation units for the GPA system, i.e. GPA cannot easily predict what the market will be able to offer
16 at the time of the bid with regards to the trade-off of the size of the plants and the impact the size of the
17 plant has on reliability and efficiency especially as it depends heavily on forecasts of fuel price and loads;
18 and

19 **WHEREAS**, the estimates for the capital investment required and the unit efficiencies expected
20 are conservative, the impact on rates is not expected to be significant, if at all and would require the
21 procurement process to better define the expected cost and potential savings from the various types of
22 units; and

23 **WHEREAS**, GPA continues to evaluate the feasibility of LNG as a potential future fuel source for
24 the new generation should fuel oil prices dramatically rise again; and

25 **WHEREAS**, although the IRP looks out 30 years, GPA's request for approval concentrates on
26 actions over the next five years; and

27 **WHEREAS**, GPA has not been compliant with USEPA regulations since 2013 and must commit to
28 a plan for compliance in order to avoid significant fines estimated at over \$125 million to date that could
29 be used towards compliance and improving production efficiency and reliability ; and

30 **WHEREAS**, GPA proposes the following USEPA compliance schedule:

No.	Updated USEPA Compliance Schedule	Start	Months		Complete
			Procure / Design / Permit / Construct	Deactivate / Comply	
1	GPA retires the Tanguisson 53MW Power Plant no later than April 2015. <i>This was completed in December 2014</i>				
2	GPA constructs up to 180MW of combined cycle units and commission on ULSD and/or LNG no later than December 31, 2020.	10/1/2016	51		12/31/2020
3	Retire Cabras 1&2 Steam Plant (132MW) six months after the commissioning of new combined cycle units, but no later than July 1, 2021.	12/31/2020		6	7/1/2021
4	GPA converts MEC 8&9 units (88MW) to ULSD and/or LNG within one year after the commissioning of the 180 MW of new combined cycle units, but no later than December 31, 2021.	12/31/2020		12	12/31/2021
5	Retire the Cabras 3&4 Slow Speed Plant (79MW)				

1

2 **WHEREAS**, the IRP is a living document which GPA will update annually and should formally be
 3 updated every two (2) years;

4

5 **NOW THEREFORE, BE IT RESOLVED BY THE CONSOLIDATED COMMISSION ON UTILITIES, AS THE**
 6 **GOVERNING BODY OF THE GPA, AS FOLLOWS:**

- 7 1. The General Manager is authorized to petition the Guam Public Utilities Commission for
 8 approval of the plan to acquire up to 180 megawatts of dual fired combined cycle units and
 9 retire Cabras 1, 2, 3 & 4 units by July 1, 2021. The General Manager is to provide all supporting
 10 documents required to comply with PUC Docket 15-05.
- 11 2. The General Manager is authorized to utilize the Independent Power Producer model with the
 12 option for GPA financing should GPA financing provide lower cost for ratepayers.
- 13 3. The General Manager is authorized to procure for the services of Engineering, Procurement &
 14 Construction (EPC) management firm to assist in the procurement of the new plant and act as its
 15 owner representative.
- 16 4. The General Manager will continue to execute the following:
- 17 a. Contract for 120MW of renewables over the next 5 years.
- 18 b. Develop a compliance plan to be submitted to USEPA as indicated above and prepare to
 19 negotiate a consent decree with USEPA.
- 20 c. Continue to evaluate a Time-of-Use (TOU) rate program and provide recommendations
 21 for CCU consideration within six months.
- 22 d. Within one year, determine the feasibility of and provide recommendations on:

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19

- i. Energy storage systems for shaving peak and load shifting..
- ii. Role of distributed generations in parts on the island.
- iii. Feasibility of Liquefied Natural Gas (LNG).
- iv. Expansion of the DSM program and ways to accelerate lowering customer consumption.
- v. Permanent implementation of demand response and interruptible rate programs
- vi. Effective renewables programs such as feed in tariff, a sustainable net metering program, and customer distributed generation.

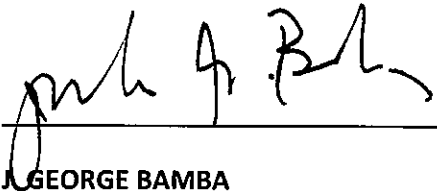
RESOLVED, that the Chairman certifies and the Secretary attests to the adoption of this Resolution.

DULY AND REGULARLY ADOPTED AND APPROVED THIS 24TH DAY OF MAY, 2016.

Certified by:

Attested by:





JOSEPH T. DUENAS

GEORGE BAMBA

Chairperson

Secretary

Consolidated Commission on Utilities

Consolidated Commission on Utilities

1 **I, J. GEORGE BAMBA**, Secretary for the Consolidated Commission on Utilities do hereby certify that
2 the foregoing is a full, true, and correct copy of the resolution duly adopted at a regular meeting of
3 the members of Guam's Consolidated Commission on Utilities, duly and legally held at the meeting
4 place thereof on May 24, 2016, at which meeting of all said members had due notice and at which at
5 least a majority thereof were present, and

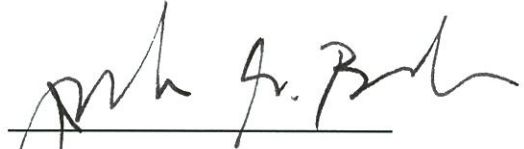
6 At said meeting said resolution was adopted by the following vote:

7 Ayes: 4
8 Nays: 0
9 Absent: 1
10 Abstain: 0

11 As of the date of this certification, said original resolution has not been amended, modified, or
12 rescinded since the date of its adoption, and the same is now in full force and effect.

13 **SO CERTIFIED** this 24th day of May 2016.





J. GEORGE BAMBA
Secretary
Consolidated Commission on Utilities