

BEFORE THE GUAM PUBLIC UTILITIES COMMISSION



IN THE MATTER OF:) GPA Docket 15-16
)
The Petition of the Guam Power Authority))
for Approval of Procurement of the) **ORDER**
Energy Storage System.)
)
_____)

INTRODUCTION

1. This matter comes before the Guam Public Utilities Commission ["PUC"] upon the Petition of the Guam Power Authority ["GPA"] for contract review and approval of GPA's Procurement of the Energy Storage System.¹
2. GPA now requests that PUC approve the issuance of an Invitation for Bids ["IFB"] for an Energy Storage System. Submitted with GPA's Petition are Volumes I through IV relative to the IFB for Energy Storage.²

BACKGROUND

3. GPA intends to issue a procurement for an Energy Storage System. This project involves the design, procurement and installation of a 40MW Energy Storage System (ESS) at the GPA Agana Substation Compound and interconnection to GPA power system.³
4. In the procurement, GPA will seek the services of an Engineer/Procure/Construct (EPC) or Design/Build (DB) contractor for the Energy Storage System Phase I Project.⁴
5. GPA seeks a "Turn-Key" project that will be fully operational upon commissioning and intends to enter into a 25-Year Performance-Based Operations and Maintenance (O & M) Contract with the successful bidder.⁵

¹ GPA Petition for Approval Procurement of the Energy Storage System, GPA Docket 15-16, filed June 19, 2015.

² Id.

³ Id at p.1.

⁴ Guam Consolidated Commission on Utilities Resolution No. 2015-30, Relative to the Approval to Submit to the Guam Public Utilities Commission (GPUC) the Energy Storage System Phase I Draft Bid Documents, adopted May 26, 2015.

⁵ Id at p.1.

6. The objective of this Project is to help alleviate existing under frequency load shedding issues and support renewable energy integration.⁶
7. The cost is estimated at \$35M. Project schedules estimate contract award by November 2015 with project completion scheduled for December 2016.⁷
8. The preferred ESS site is the GPA Agana Substation Compound with the ESS connected at the 115K Voltage Level.
9. The selected Contractor and/or Energy Storage System manufacturer is required to provide a 20-Year service and parts warranty.⁸
10. The Contractor shall provide full service operations and maintenance (O&M) of the Energy Storage System to GPA for period of 25-Years after commissioning. Service shall include all aspects of daily operation and monitoring of the ESS and all periodic maintenance procedures covering electrical systems, mechanical systems, grounding/lightning protection systems, fire suppression systems, etc.⁹
11. GPA previously conducted a study to determine the feasibility of adding an ESS and the performance of the GPA System with the addition of an ESS.¹⁰ The Study has recommended that “based on life cycle cost analysis, a battery-based ESS... the type of battery technology recommended at this time is lithium-ion or advanced lead-acid”¹¹
12. However, the Invitation for Bids does not specify any particular technology for the energy storage purposes and would also allow submittal of “flywheel” technology for the IFB.

⁶ Id.

⁷ Issues for Decision [attached to Petition for Approval of Procurement of the Energy System], GPA Docket 15-16, filed June 19, 2015.

⁸ Id at Section 3.3.10, Warranty, at p.11.

⁹ Id at Section 3.4.1, p.11.

¹⁰ GPA Energy Storage Feasibility Study, Appendix H to the IFB.

¹¹ Id.

13. GPA has also prepared a draft "FORMAL CONTRACT", which the selected Contractor would sign. The contract sets forth the duties and responsibilities of the Contractor, as well as the compensation to be paid.¹²
14. The Consolidated Commission on Utilities (CCU) Resolution No. 2015-30 authorized the GPA General Manager to petition the PUC for approval of the procurement of the Energy Storage System.¹³
15. On July 13, 2015, PUC Counsel submitted his Report herein. The PUC adopts Counsel's recommendations.¹⁴

DETERMINATIONS

16. The PUC previously approved funding for the Energy Storage Project in GPA Docket 14-09 in the amount of \$35M. There the PUC authorized the issuance of Revenue Bonds for various projects, including the Energy Storage Project.¹⁵
17. PUC Consultant Slater, Nakamura & Co, LLC, recommended that the ESS Project be approved in its Memorandum Review of Energy Storage System dated November 25, 2014.¹⁶ Having approved the expenditure of \$35M for the ESS, PUC required GPA to seek prior approval from the PUC before issuing its procurement for Energy Storage.¹⁷
18. A continuing concern, raised by PUC Consultant Slater, Nakamura & Co., LLC, is that the cost of the ESS could exceed the approved funding of \$35M.¹⁸ PUC will further evaluate cost issues upon submission by GPA of the results of the IFB. The need for future funding may present an obstacle to this project that GPA will need to overcome.

¹² Volume III, Draft Energy Storage Contract, Invitation for Multi-Step Bid No. GPA-XXX-15, Energy Storage System Phase I.

¹³ GPA Petition for Approval Procurement of the Energy Storage System, GPA Docket 15-16, filed June 19, 2015.

¹⁴ PUC Counsel Report, GPA Docket 15-16, dated July 13, 2015.

¹⁵ PUC Order and Law Order Approving Long-Term Debt, GPA Docket 14-09, In Re: Guam Power Authority's Request to Issue GPA Revenue Bonds, dated July 31, 2014.

¹⁶ Slater, Nakamura & Co., LLC, Memorandum on Review of Energy Storage System, GPA Docket 14-09, dated November 25, 2014, at p. 4.

¹⁷ Id.

¹⁸ Slater, Nakamura & Co., LLC, Report on the Review of the Proposed Bond Financing under GPA Docket 14-09, filed July 27, 2014, at p.10.

19. Concerning the structure of the project, GPA will be responsible for the entire cost of the ESS System. The selected Contractor will be responsible for the construction of the ESS and its operation and maintenance over the 25-Year period.
20. An issue has been raised as to whether GPA could utilize a Compressed Air Energy System" could be a part of the ESS project. GPA has taken the position that CAES applications for stored energy systems are far much slower systems than are required for the GPA contingency reserve application. GPA submits that a stored air system cannot meet the contingency reserve requirement of the GPA system due to its response characteristics.¹⁹
21. GPA's Consultant, Dave Burlingame, has stated that ESS is a proven technology. It should be extremely reliable in achieving the results sought by GPA in terms of Fault induced Delayed Voltage Recovery.
22. GPA indicates that the ESS will be operational within one year after the award of the contract.
23. The useful life of battery storage systems depends upon the type of battery used and the opinions of the suppliers. This issue will have to be revisited when GPA determines the technology which it intends to use for the ESS.
24. GPA has asserted that the ESS system will improve system reliability, improve power quality and reduce underfrequency outages by 77%.
25. ESS Systems are in commercial operation in the United States. GPA's Consultant indicated that there are a number of such systems in operation, and one in particular in his state of residence, Alaska. The Alaska ESS System provides 25MW of reliable power to the power system.

ORDERING PROVISIONS

After review of the record herein, including GPA's Petition to Procure an Energy Storage System, the GPA Feasibility Study, and the PUC Counsel Report, for good cause shown, on motion duly made, seconded and carried by the undersigned

¹⁹ Electric Power Systems Inc. Consulting Engineers, CAES-Existing Projects, Slide Presentation, July, 2015.

Commissioners, the Guam Public Utilities Commission **HEREBY ORDERS** that:

1. GPA's Petition to procure a Energy Storage System is granted.
2. The current level of authorized funding for the ESS is \$35M.
3. Before entering into a final contract with the selected Contractor for the ESS, GPA is required to submit such contract to the PUC for prior review and approval. Neither the terms of the Final Contract, nor the price for the Energy Storage System, are known at the present time.
4. GPA should ensure that the terms and conditions of the Final Contract fully and adequately protect the interests of GPA and the ratepayers.
5. GPA is ordered to pay the Commission's regulatory fees and expenses, including, without limitation, consulting and counsel fees and the fees and expenses of conducting the hearing proceedings. Assessment of PUC's regulatory fees and expenses is authorized pursuant to 12 GCA §§12002(b) and 12024(b), and Rule 40 of the Rules of Practice and Procedure before the Public Utilities Commission.

Dated this 16th day of July, 2015.



Jeffrey C. Johnson
Chairman



Rowena E. Perez
Commissioner

Michael A. Pangelinan
Commissioner

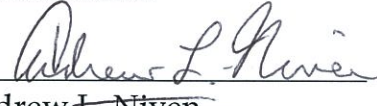
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