BEFORE THE GUAM PUBLIC UTILITIES COMMISSION

IN THE MATTER OF:	)	GPA Docket 17-06
	)	
Guam Power Authority's Request to Fund	)	
the GPA-Navy Renewables Integration	)	**PUC COUNSEL REPORT**
System Study.	)	
	)	
	)	

INTRODUCTION

1. This matter comes before the Guam Public Utilities Commission ["PUC"] upon the Petition of Guam Power Authority ["GPA"] for Contract Review and Approval of Funding of the GPA-Navy Renewables Integration System Study.[1]

2. GPA seeks approval from the PUC of funding for a GPA-Renewables Integration System Study in the amount of $895,377.

3. GPA proposes the cost for this Study be paid from the remainder of the LNG Initial Start Up application of the 2014 bond funds.

BACKGROUND

4. GPA presently has an operational utility scale photovoltaic solar facility in Dandan of 25.65MW. On October 19, 2016, GPA is expected to close solicitation for Phase II of its Renewable Acquisition for up to 60MW of renewable resource capacity for Power Purchase Agreements.[2]

5. As of the end of July 2016, GPA has processed over 1098 net metering customers totaling over 11MW of installed rated capacity (since 2009). GPA and Navy have successfully negotiated a lease of approximately 164 acres of Navy Land for GPA development of approximately 45MW solar photovoltaic installations.[3]

6. GPA has determined that it needs a study to "holistically evaluate integration of all existing Renewable Energy in the grid including the 1MW of solar on Navy to date, GPA's Solar and Wind projects (~27MW), GPA NEM customers (11MW) and future

[1] GPA Petition for Funding of the GPA-Navy Renewables Integration System Study, GPA Docket 17-06, filed October 7, 2016.
[2] Guam Consolidated Commission on Utilities Resolution No. 2016-59, authorizing Management of the Guam Power Authority (GPA) to Fund the GPA/Navy System Improvement Study for Renewables Integration, adopted on September 27, 2016.
[3] Id. at pgs. 1-2.

renewable energy integration projects including 50MW from Navy, 100MW from Phase II and Phase III, and an evaluation of projected additional NEM customers.[4]

7. The purpose of the study will be as follows:

    - Use the identified impacts to evaluate integration requirements for each group of projects on the Navy and GPA systems;
    - Evaluate the impacts using several generation plans;
    - Analyze a wide array of potential solutions to mitigate the effects of the intermittent generation to the transmission and distribution systems;
    - Recommend plans to reliably integrate these renewable resources to the transmission, distribution, and generation systems.[5]

8. It is anticipated that this study will take 3-6 months to complete.[6]

9. The total cost for this Integration study will be $1,145,377. Mr. Balajadia, a certified local Professional Engineer, has retained the subcontractor Electric Power Systems. The Navy has deemed EPS to be a qualified firm, as it has performed numerous studies for Hawaiian utilities. It has also done prior work for the Guam Power Authority on the energy storage systems.[7]

10. The total cost of this integration study is $1,145,377. The Navy has agreed to pay $250,000 toward the cost of this study.[8]

11. GPA intends to pay the balance of the cost for the Integration Renewables Integration Study, $895,377, from the 2014 Bond Funds originally allocated for LNG

[4] Id at p.2.
[5] Letter from A.E. Balajadia, P.E. to John C. Cruz, Jr., Manager of GPA SPORD, Re: System Improvement Plan for Renewables-Guam Power Authority, dated April 12, 2016 ["Exhibit A" to CCU Resolution No. 2016-59].
[6] Issues for Decision, Resolution No. 2016-59, at 133 of the Commissioner Board Materials for the CCU September 27, 2016 Regular Meeting.
[7] Guam Consolidated Commission on Utilities Resolution No. 2016-59, authorizing Management of the Guam Power Authority (GPA) to Fund the GPA/Navy System Improvement Study for Renewables Integration, adopted on September 27, 2016, at p. 3.
[8] Issues for Decision, Resolution No. 2016-59, at 133 of the Commissioner Board Materials for the CCU September 27, 2016 Regular Meeting; see also GPA-NAVFAC MOA: SYSTEM IMPROVEMENT PLAN FOR RENEWABLES, Contract Number N40192-16-H-5001.

Initial Start Up in the amount of $3M. GPA has indicated that such funds are remaining in the original funded amount, the GPA cost for this study will be funded from bond funds.

ANALYSIS

12. Upon the commercial operation of the 25.65MW Solar PV facility in Dandan, the GPA system has been further impacted by the addition to the grid of 11MW from the net metering program. The net metering program is increasing rapidly and will add more renewable energy to the grid.

13. GPA is concerned about continued integration of intermittent renewable systems without mitigation. As GPA continues to integrate renewables, it believes that it must evaluate integration without sacrificing grid stability and reliability.[9]

14. The problem that GPA faces in integrating renewable energy into the IWPS is real. In its Presentation on New Generation Combined Cycle Plant in October 2016 at the public hearings, GPA demonstrated that the solar energy at the Dandan Plant is intermittent due to cloud cover. A burden is placed upon other generators to increase production when the production of the solar plant decreases.

15. Due to the intermittency of renewable solar energy, GPA has recognized that battery storage is an essential element of the renewable program. It is already seeking to provide such storage for the Dandan Plant and to require bidders to include battery storage in the Phase 2 Renewable program. Battery storage will likely also be required with the anticipated GPA-Navy renewable plants of up to 45MW.

16. A study which seeks to determine how renewable energy can be better integrated into the IWPS is necessary.

17. On numerous occasions GPA has indicated that the introduction of utility scale renewables into the IWPS has caused intermittency and reliability issues. The study is specifically designed to recommend plans to integrate renewable resources into

[9] Issues for Decision, Resolution No. 2016-59, at 133 of the Commissioner Board Materials for the CCU September 27, 2016 Regular Meeting; see also GPA-NAVFAC MOA: SYSTEM IMPROVEMENT PLAN FOR RENEWABLES, Contract Number N40192-16-H-5001.

the transmission, distribution and generation systems. It will evaluate the ability of the transmission system to incorporate the proposed renewable energy projects.

18. Mr. Balajadia has subcontracted Electric Power Systems Inc. to perform the study. EPS will undertake the project tasks and also perform a System Improvement Plan for Renewables for the proposed GPA and Department of Navy renewable energy projects.

19. GPA has established that the proposed Renewables Integration System study is reasonable, prudent and necessary. It would be difficult to imagine that GPA could proceed with various solar projects it is contemplating without undertaking this type of study.

RECOMMENDATION

20. Counsel recommends that the PUC approve the GPA-Navy Renewables Integration System Study.

21. The study is necessary so that GPA can properly integrate renewables into the IWPS.

22. GPA should be authorized to expend the amount of $846,957.78 from the 2014 Bond Fund allocation of $3M to LNG Initial Start Up.

23. A Proposed Order is submitted herewith for the consideration of the Commissioners.

Dated this 22nd day of October, 2016.

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