

BEFORE THE GUAM PUBLIC UTILITIES COMMISSION



IN THE MATTER OF:) GPA Docket 15-16
)
The Petition of the Guam Power Authority))
for Approval of the Award of the Energy) **ORDER**
Storage Contract to LG CNS.)
)
_____)

INTRODUCTION

1. This matter comes before the Guam Public Utilities Commission ["PUC"] upon the Petition of the Guam Power Authority ["GPA"] for Approval of the Award of the Energy Storage Contract to LG CNS.¹

BACKGROUND

2. The proposed 40MW Energy Storage System has been before the PUC on a number of previous occasions.
3. In 2014, the PUC approved bond funding for the Energy Storage System ["ESS"] in the amount of \$35M.²
4. In 2015, after a thorough review of the Invitation for Bids, the PUC authorized GPA to undertake the procurement of the proposed Energy Storage System.³
5. Thereafter, GPA hired Andriano E. Balajadia, P.E., and his subcontractor Electric Power Systems, to assist with the development of the bid documents and provide technical support during the ESS procurement process. The total contract cost was \$367,219.⁴
6. Originally, the project was expected to take one year to complete and be finished by December 2016; however, GPA amended the project bid from one 40MW facility to a project involving the installation and interconnection of a 24MW ESS at the GPA

¹ GPA Petition for Approval of the Award of the Energy Storage System to LG CNS, GPA Docket 15-16, filed February 8, 2017.

² PUC 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.

³ PUC Order, GPA Docket 15-16, the Petition of the Guam Power Authority for Approval of Procurement of the Energy Storage System, GPA Docket 15-16, dated July 16, 2015, at p. 5.

⁴ Guam Consolidated Commission on Utilities Resolution No. 2017-06, Authorizing Management of Guam Power Authority (GPA) to Award the Energy Storage Phase I Contract to LG CNS, adopted January 24, 2017, at p. 1.

Agana Substation and a 16MW ESS at the Talofoto Substation. The Talofoto ESS project was conceived to provide power and system reliability and renewable energy integration.⁵

7. Through Invitation for Multi-Step Bid No. GPA-182-15, GPA solicited the services of an Engineer/Procure/Construct (EPC) contractor to provide a “turn-key” project based on the following:
 - The ESS projects will be commissioned within 12 months after the award of the contract
 - The technology proposed for the ESS will have at least 1 year of commercial operations history in a utility environment
 - The ESS will deliver energy directly to the existing GPA transmission system
 - The ESS will have a minimum 20-year warranty
 - A 25-year performance-based Operations and Maintenance (O & M) contract will be provided with the ESS.⁶
8. Four bids were submitted in response to the IFB; however, two bids were disqualified.⁷
9. Based upon the evaluation of the Evaluation Committee, it recommended that LG CNS be awarded the contract for the Energy Storage System. The approved bid of LG CNS for design and construction of the 24MW Agana project was \$16,799,554; for the 16MW Talofoto project, \$18,199,516. The total design and construction cost is \$34,999,070.⁸ A breakdown of the bid cost is attached to the PUC Counsel Report as Exhibit “1”.⁹

⁵ Amendments to IFB No.: GPA-082-15

⁶ Guam Consolidated Commission on Utilities Resolution No. 2017-06 *supra*, at pgs. 1-2.

⁷ Phone conversation between GPA Counsel Graham Botha and PUC Counsel Frederick Horecky on February 20, 2017; Response of Special Project Engineer Lorraine O. Shinohara to PUC questions, dated February 15, 2017.

⁸ Memorandum from the Evaluation Committee to the Supply Management Administrator, Re: Multi-Step Bid No. GPA-082-15, dated January 23, 2017.

⁹ LG CNS Priced Proposal dated January 13, 2017.

10. The Fixed Operations and Maintenance Fee for the entire 25 year period is set forth in Exhibit "2", a copy of which is attached to the PUC Counsel Report.¹⁰ The yearly amounts for both ESS projects range from over \$200,000 in the first year to over \$400,000 in the 25th year.¹¹
11. The Guam Consolidated Commission on Utilities approved LG CNS as the lowest and most qualified bidder and awarded the contract to LG CNS.¹²
12. PUC Counsel submitted his Report dated February 20, 2017.¹³

DETERMINATIONS

13. In response to the GPA IFB, LG CNS submitted an extensive Technical Proposal, which included product descriptions, drawings, proposed warranty, O & M agreement, and legal, financial and other information required by GPA.¹⁴
14. LG CNS is a corporation which operates worldwide, with headquarters in locations including Korea, Japan, and the United States.¹⁵
15. In the past two years, LG CNS has deployed at least 4 ESS projects; it has 29 years of experience and almost 10,000 employees. It is connected with other worldwide companies such as LG Energy and LG Chem, which provide extensive services in the energy field, including manufacturer of lithium ion batteries for ESS projects.
16. LG CNS currently serves as the contractor for a 52MW ESS project with Korea Electric Power Corporation.
17. LG CNS has a detailed and extensive work plan for its ESS proposal, which outlines its approach for the entire process, from mobilization to commissioning and environmental cleanup.¹⁶

¹⁰ Memorandum from the Evaluation Committee to the Supply Management Administrator, Re: Multi-Step Bid No. GPA-082-15, dated January 23, 2017.

¹¹ Id.

¹² Guam Consolidated Commission on Utilities Resolution No. 2017-06, *supra*, at p. 2.

¹³ PUC Counsel Report, GPA Docket 15-16, dated February 20, 2017.

¹⁴ LG CNS Technical Proposal through to IFB No.: GPA-082-15, Part 1, December 5, 2016.

¹⁵ www.lgcns.com, Company Overview.

¹⁶ LG CNS Technical Proposal, Part 1, pages 24-66.

18. LG CNS has analyzed the frequency load shedding issues and the need for renewable energy integration. LG CNS contends that “regulation by battery will help manage the frequency spikes for the whole system.”¹⁷
19. It further posits that “ESS Technology, when it is combined with renewables, is one of the best options to support renewable stabilization and ... a proven technology for frequency regulation...”¹⁸
20. LG CNS has agreed that it will comply with the specific requirement for the 24MW ESS in Agana to maintain the 24MW rated power output for 15 minutes while satisfying the 12-hour Frequency Regulation Duty Cycle. The 16MW ESS in Talofofo will control the ramp-rate of the 25MW solar farm to 1% of rated power output per minute (250kW/min.) at the guaranty success rate of 97%.¹⁹
21. In general, LG has manufacturing facilities around the world, and a staff of engineers and personnel that can assist with any issues that arise on Guam with regard to the ESS projects. LG CNS also has Operations and Maintenance experience with ESS projects comparable in size to that which will be constructed on Guam.
22. From a review of the LG CNS Technical Proposal and other documents, it appears that LG CNS should be able to undertake and implement the proposed projects on Guam. LG CNS appears to be a company with the requisite experience and skills to implement the ESS projects on Guam.
23. LG CNS has also agreed to undertake the Operations and Maintenance Contract for the ESS projects for a period of 25 years. On various occasions in its Bid documents, LG CNS states its opinion that it is advantageous to have the same contractor do the construction and implementation of the ESS project, as an EPC, and also undertake the Operation and Maintenance Contract for the 25 year period.
24. From the inception of this Bid, GPA has insisted that the selected Contractor provide a 20 year service and parts warranty in its proposal. LG CNS provided a proposed warranty agreement in its technical proposal which appeared to comply with the bid requirements. Under the warranty proposed, LG CNS would have extended the

¹⁷ Id. at p. 16.

¹⁸ Id. at p. 17.

¹⁹ Id. at pgs. 54-55.

warranty for an additional 5 year warranty period, or up to 25 years, for the life of the O & M contract.²⁰

25. However, GPA has determined that it will not use the LG CNS proposed warranty, but will adhere to the warranty requirements in Volume II, Technical Qualification Requirements of Multi-Step GPA-082-15, Section 3.3.10. A copy of the Warranty provision is attached as Exhibit "2" to the PUC Counsel Report. At present, GPA believes that the cost of the additional 5 year warranty is too great; however, it retains the option to purchase the additional warranty at a later time, if prudent.²¹ GPA has the option of extending the warranty another 5 years at any time after the contract is awarded for the additional price indicated under Additive Bid Item 4 in the Priced Proposal.²²
26. On February 15, 2017, GPA submitted complete files of all IFB documents, including the proposed Contract between LG CNS America Inc. and the Guam Power Authority.²³
27. The revised Contract includes such matters as the total design and construction fee owed of \$34,999,070, and the yearly Fixed O & M Annual Fees for the 24MW Agana and 16MW Talofofo projects. The Contract incorporates Volume II, Section 3.3.10 of the IFB, which is the Warranty provision.
28. The contract and projects thereunder are specified as a "turn-key" project, to insure that when LG CNS turns over the project to GPA, it will immediately be ready for use as an energy storage system.²⁴ The Contract, §5.2, provides for payment terms upon monthly billings and for a ten percent (10%) retention amount. The payments required under the Contract are consistent with §4.15, Contract Price, and §4.16 the payment Schedule, of Volume I: Commercial Terms & Conditions, Multi-Step GPA-082-15.
29. The Contract has standard provisions that should protect GPA's interest.

²⁰ LG CNS Technical Proposal, Part 1, p. 72.

²¹ Phone Conversation between GPA Counsel Graham Botha and PUC Counsel Fred Horecky on February 21, 2017.

²² Email1 from Special Projects Engineer Lorraine Shinohara to PUC Counsel Fred Horecky dated February 21, 2017.

²³ Contract-Energy Storage System Phase I, submitted February 15, 2017.

²⁴ Phone conversation between GPA Counsel Graham Botha and PUC Counsel Frederick Horecky on February 20, 2017; Response of Special Project Engineer Lorraine O. Shinohara to PUC questions, dated February 15, 2017.

30. With regard to the proposed funding, PUC has already approved the \$35M in bond funds for the two ESS projects (Agana and Talofofo). In addition, GPA seeks approval for the fixed annual O & M amounts, ranging from over \$200,000 to over \$400,000, over a 25-year O & M period.²⁵ GPA seeks to fund the annual O & M payments through its O & M Budget. The total amount for such fixed fees will be over \$7M for the twenty five year period.
31. In light of the nearly \$35M price tag for the ESS projects, the fixed fee amounts bid by LG CNS for the 25 year O & M Contract appear to be reasonable. LG CNS's Bid was one-half that of the other bidder LSIS.²⁶
32. GPA also requests to fund the bid development support contract with Andriano Balajadia, P.E., in the amount of \$367,219, through the FY2018 CIP Budget. The amount of the Balajadia Contract was already paid from the \$35M Bond funds. Therefore, funds will be needed from the FY2018 CIP Budget to pay the ESS project costs.
33. Because the amount of \$367,219 for the Balajadia contract was used from the \$35M, there is only a balance of \$34,632,781 for the design and construction of the ESS. The bid from LG CNS for the design and construction is \$34,999,070. The amount is \$366,289 over the available balance. This overage will be funded through the FY2018 CIP Budget.²⁷
34. GPA and LG CNS have addressed safety issues concerning the ESS projects. Section 4.8 of the LG CNS Technical Proposal addresses safety issues and mitigation techniques. If a fire occurs, the automatic fire suppression system will release a gas to suppress it. In addition, the battery cells are designed to prevent fires. Tests have been done on the batteries that show, even when the cell temperature rises to 150 degrees Celsius, any risks such as explosions are not expected.²⁸

²⁵ GPA Petition for Approval of the Award of the Energy Storage System to LG CNS, GPA Docket 15-16, filed February 8, 2017.

²⁶ Phone conversation between PUC Counsel Fred Horecky, GPA Counsel Graham Botha, and Special Projects Engineer Lorraine Shinohara on February 21, 2017.

²⁷ Email 2 from Special Projects Engineer Lorraine Shinohara to PUC Counsel Fred Horecky dated February 21, 2017.

²⁸ Email1 from Special Projects Engineer Lorraine Shinohara to PUC Counsel Fred Horecky dated February 21, 2017.

ORDERING PROVISIONS

Upon consideration of the record herein, the Petition of GPA, the PUC Counsel Report, and for good cause shown, on motion duly made, seconded, and carried by the affirmative vote of the undersigned Commissioners, the Guam Public Utilities Commission **HEREBY ORDERS** that:

1. GPA's Award of the Energy Storage Contract to LG CNS is approved.
2. The Contract between LG CNS America Inc. and GPA is approved.
3. The annual fixed fees for the 25 year O & M Contract are approved.
4. The payment of the amount of \$367,219 from the FY 2018 CIP Budget, to reimburse the design and construction cost overage for the ESS projects, is approved.
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 §§12103(b) and 12125(b), and Rule 40 of the Rules of Practice and Procedure before the Public Utilities Commission.

Order
Award of the Energy Storage
Contract to LG CNS
GPA Docket 15-16
February 23, 2017

Dated this 23rd day of February, 2017.



Jeffrey C. Johnson
Chairman



Rowena E. Perez
Commissioner




Michael A. Pangelinan
Commissioner



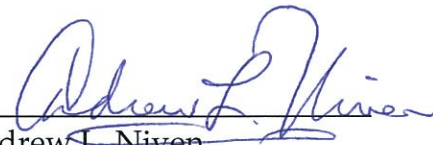
Filomena M. Cantoria
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