July 25, 2018

To All Prospective Respondents

Request for Qualifications for the Puerto Rico Electric Power Authority Utility Scale Energy Storage System Project

Request for Clarifications #001 - #005

We make reference to the Request for Qualifications of the Puerto Rico Electric Power Authority Utility Scale Energy Storage System Project ("RFQ") by the Puerto Rico Public-Private Partnerships Authority ("Authority") on June 22, 2018.

According to Section 1.9 of the RFQ, a Respondent may submit a request for clarification ("**RFC**") to the Authority for explanation or interpretation of any matter contained in the RFQ.

The following information is included in this Addendum #1:

I. Responses to Requests for Clarifications / Information received.

RFC # 001

- **Per Section 2.3, if the eventual system may be scaled as large as 40 MW / 160 MWh (a "4 hour system"), can the initial system also be a 4 hour system (e.g. 20 MW / 80 MWh or 5 MW / 20 MWh)?**
- **Can the Proponent have demonstrated Technical Qualifications and Financial Qualifications by the time of project commissioning (i.e. conditions precedent)?**
- **Can a Proponent bid into a future phase of the project without bidding into the initial 20 MW / 20 MWh phase?**

RESPONSE

The initial system is anticipated to be as described in the Request for Proposals (RFP). Details of any other options will be included when the Request for Proposals is issued.

RFC # 002

- **Must the Proponent (short listed Respondent) be the same as the one submitting the offer to the RFP or it can be done by an affiliated company, subsidiary, etc.**
- **Is it possible for two or more different Proponents (short listed Respondents) to form a consortium to respond to the RFP?**

RESPONSE

Only proponents that respond to the RFQ and are qualified may respond to the RFP. Also, two or more proponents may form a consortium for this project. However, the consortium will have to respond to the RFQ (which requires that all consortium members submit their qualifications) and be qualified in order to be able to respond to the RFP.

RFC # 003

- **Appendix 3 describe six primary control modes requested of the system. Is the 20MW BESS plant expected to spend a primary amount of it operational time offering ancillary services such as Frequency Response and Volt/VAR support versus being in standby for a capacity offering? How would you prioritize the 6 requested modes and what percent of total run time is the asset expected to be in each mode or combination of modes? Can you provide an indicative schedule for control modes of the asset?**
- **Is the requested 20MW requested nameplate continuous discharge or peak power? Is a longer duration system than 20MWh being considered?**
- **For the frequency response mode, can you specify the droop curve and dead band expected of BESS inverter by PREPA?**
- **For voltage support, will response voltage signal be read at point of common coupling or somewhere else on the feeder of interest? Can you confirm the voltage response will be expected at a 115 kV nominal voltage?**
- **Is the low voltage ride through capability as specified in industry standard UL1741SA standard acceptable or do you expect to need to modify set points and duration times?**
- **For the integration with the utility SCADA, is there a preference on the interoperability standard and communication protocol used? Are industry standard data models (IEC 61850, IEC 60870-5-104) acceptable via an RTAC or an equivalent gateway acceptable? Can you provide a sample SCADA point list expected for the PREPA integration?**

RESPONSE

The technical information in the RFQ is intended to provide a general description of the type of project that is being anticipated. The specific technical questions as well as more detailed site information will be clarified once the RFP is made public.

RFC # 004

- **The RFQ states that 60MVARs are required at the point of interconnection. Is this intended to be the VARs required for the 20MW/20MWh plant? Or the future 40MW/160MWh plant?**

RESPONSE

The 60 MVAR requirement is intended to be for the 20MW/20MWh plant. However, more details will be provided in the RFP.

RFC # 005

- **Energy capability and power capacity to inject nominal active power output (20 MW at the Point of Interconnection) for 1.0 hour. Is the expectation to always inject 20MW for 1.0h output to 20MW for up to 1.0h? (Similar to voltage?)**
- **Can you please provide a description of the transition from Rapid Spinning Reserve and Fast Frequency Response to Frequency Control and Regulation?**
- **Is the P value pre-set or dynamic?**
- **What is the prioritization between Short Duration Dispatchable Generation Source and Fast Frequency Response to Frequency Control and Regulation?**
- **Are 365 cycles/yr including all real power applications or do they only include Short Duration Dispatchable Generation Source?**
- **Is Q value pre-set or dynamic?**
- **Can you please describe the transitions/priority between the different voltage applications?**
- **Is there a "2. High Voltage Operational Range" section missing?**
- **The +/- 60 MVAR reactive power requirement for 20 MW will increase the inverter size (and cost) substantially – can you please confirm that this is indeed needed?**

RESPONSE

These specific technical questions will be addressed in the RFP. In addition, there will be a period for comments during the RFP.