



# GUAM POWER AUTHORITY

ATURIDÁT ILEKTRESEDÁT GUÅHAN  
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December 21, 2022

## AMENDMENT NO.: II

TO

INVITATION FOR MULTI-STEP NO.: GPA-012-23

FOR

## RENEWABLE ENERGY RESOURCE ACQUISITION PHASE IV

Prospective Bidders are hereby notified of the following changes and response to an inquiry received from Bidder No. 4 dated December 12, 2022:

### **CHANGES:**

**REMOVE** Page 105 of 263 and **REPLACE** with Page 105a of 263 (see attached).

**Under Volume II: Technical Qualification Proposal Requirements, Item 2.2.2 Acceptable ESS Technologies** is changed

### **FROM:**

The only acceptable ESS technology in this IFB is a Battery Energy Storage System (BESS) with at least one year of commercial operations history in a utility environment.

### **TO NOW READ:**

- \* The acceptable ESS technologies in this IFB are Battery Energy Storage Systems (BESS) and hydrogen fuel cells with at least one year of commercial operations in a utility environment.

### **QUESTION:**

1. The IFB Volume II section 2.2.2 states that:

*The only acceptable ESS technology in this IFB is a Battery Energy Storage System (BESS) with at least one year of commercial operations history in a utility environment.*



HDF Energy was wondering if GPA would be keen to consider a hybrid solution including BESS and hydrogen storage? Indeed, HDF Energy Renewstable® concept combines both BESS (short storage duration) and hydrogen storage (long duration storage) to dispatch renewable electricity day and night to take advantage of both technologies. In addition, the Inflation Reduction Act and associated hydrogen production tax credit might apply to Guam, which would make our offer even more appealing.

Please note that our MWe scale hydrogen fuel cell was inaugurated in 2019 and is currently in operation in Martinique where there is an active PPA with the French utility EDF.

**ANSWER:**

Kindly refer to **CHANGES** above.

All other Terms and Conditions in the bid package shall remain unchanged and in full force.

  
BEATRICE P. LIMTIACO  
General Manager (A)  


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### 2.2.2. Acceptable ESS Technologies

- \* The acceptable ESS technologies in this IFB are Battery Energy Storage Systems (BESS) and hydrogen fuel cells with at least one year of commercial operations history in a utility environment.

#### 2.2.2.1. ESS Technical Requirements

##### a. Real Power and Energy Requirements.

The fully functional operating range of the ESS, with respect to energy, is defined in this specification as 0-100% State of Charge (SOC). This means that if the Bidder's proposed system is recommended or required to operate within the ESS manufacturer's stated specifications with a minimum SOC greater than 0% or a maximum charge less than 100%, then the Bidder must adjust the manufacturer's stated specifications to the fully functioning operating range of the ESS. For instance, if the manufacturer's specifications recommend operating the ESS within the range of 10-90% SOC, the total amount of available energy must be reduced by 20% to correspond to the 0-100% SOC range as defined for this IFB.

##### b. Reactive Power Requirements

The ESS shall have the capability to output up to the nominal real power capacity magnitude on a continuous basis. The real power order of the ESS shall take priority over the reactive power order. If the nominal real power capacity rating cannot be met, Bidders are encouraged to describe the reactive power capabilities of their proposed system and provide a reactive power capability curve. The RI-ESS must provide a dispatchable reactive capability as required by GPA Power System Control Center Dispatchers. The Reactive and Real Power Capability must be communicated to the GPA SCADA Master every two (2) seconds.

##### c. Response Times

The ESS shall have the ability to change its output power from 0-100% of its maximum overload rating within 200 ms. This includes positive and negative real and reactive power.

##### d. Ride-through and Synchronization Capabilities