GUAM POWER AUTHORITY
ATURIDÅT ILEKTRESEDÅT GUÅHAN
P.O.BOX 2977 • HAGÅTÑA, GUAM U.S.A. 96932-2977

August 11, 2023

AMENDMENT NO.: IX

TO

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

FOR

RENEWABLE ENERGY RESOURCE ACQUISITION PHASE IV

Prospective Bidders are hereby notified of the following notation, changes, responses and inclusions to inquiries received from Bidder No. 6 dated February 8, 2023 and June 5, 2023, Bidder No.: 5 dated March 6, 2023, May 30, 2023 and January 10, 2023, Bidder No.: 13 dated March 6, 2023 and May 22, 2023, Bidder No.: 10 dated March 7, 2023 and June 15, 2023, Bidder No.: 9 dated February 7, 2023, Bidder No.: 10 dated February 7, 2023, Bidder No.: 1 dated May 19, 2023 and June 12, 2023, Bidder No.: 7 dated May 30, 2023, Bidder No.: 11 dated June 20, 2023:

NOTE:

The updated Qualitative Proposal Excel File can be found and downloadable on GPA Procurement webpage at https://go.opengovguam.com/bids/available/gpa.

CHANGES:

1. *REMOVE* Pages 12c and 13c of 263 and *REPLACE* with Pages 12d and 13d of 263 (see attached)

   Under, Volume I, Commercial Terms and Conditions, Item 1. Introduction,

   Changes to Table 1: Bid Milestone as follows:

	Bid Milestones	From Date	To Date
*	Bid Announcement	12/01/2022	10/02/2023
	Submit Questions	12/01/2022	02/07/2023

	Cut-Off Date for Receipt of Questions		02/07/2023 4:00 P.M. CHamoru Standard Time; (CHST)	
	Cut-Off Date for Receipt of Questions Relative to Bid Amendment No. VII Only		05/30/2023 4:00 P.M. CHamoru Standard Time; (CHST)	
*	GPA Review and Answer Questions		02/08/2023	08/14/2023
*	Bidders Prepare Technical Proposals (Unpriced)		08/14/2023	10/02/2023
*	Cut-Off Date for Receipt of Technical Proposals (Unpriced)		10/02/2023 2:00 P.M. CHamoru Standard Time; (CHST)	
*	EVALUATION	Technical Proposal Evaluation	10/4/2023	10/17/2023
*	Step One:	Notification of Qualified Bidders	10/19/2023	10/20/2023
	EVALUATION	Cut-Off Date for Receipt of Priced Proposals	11/06/2023 2:00 P.M. CHamoru Standard Time; (CHST)	
		Opening of Price Proposals (Public Opening)	11/07/2023 2:00 P.M. CHamoru Standard Time; (CHST)	
*	Step Two:	Evaluation of Price Proposal	11/08/2023	11/10/2023
*		Notification of Successful Bidder(s)	11/13/2023	11/17/2023
	System Integration Study		TBD	TBD
	Contract Finalization		TBD	TBD
	Contract Approval & Recommendation to Award		TBD	TBD
	Public Utilities Commission Review		TBD	TBD

Contract Signing	TBD

2. *REMOVE* Page 15 of 263 and *REPLACE* with Page 15a of 263 (see attached):

   Under Volume I: Commercial Terms and Condition, Item 1.2.4 Historical Renewable Resource Data, website link has changed:

   FROM:
   http://guampowerauthority.com/special/renew1.php

   TO NOW READ:
   * https://admin.guampowerauthority.com/uploads/Historical_Renewable_Energy_Data_798ad58342.pdf?updated_at=2023-04-11T05:17:28.371Z

3. *REMOVE* Page 14 of 263 and *REPLACE* with Page 14a of 263 (see attached):

   Under Volume I: Commercial Terms and Condition, Item 1.2.1 Generation Overview, webpage link has changed:

   FROM:
   http://guampowerauthority.com/gpa_authority/strategicplanning/2012IRP.php

   TO NOW READ:
   * https://admin.guampowerauthority.com/uploads/GPA_2022_Integrated_Resource_Plan_b16ef41f9e.pdf?updated_at=2022-09-20T07:24:07.680Z

4. *REMOVE* Page 107a of 263 and *REPLACE* with 107b of 263 (see attached):

   Under, Volume II: Technical Qualification Proposal Requirements, g. Control System Software, 2nd paragraph is changed:

   FROM:
   Both grant projects would require integration with all BESS inverters for the purpose of centralizing control of all BESS to provide grid services to GPA's power system. This amendment requires all Phase IV Bidders integrate and use the PXiSE control systems as part of their proposal. GPA based this decision on:

   - Reduction of technical risk of integration with systems to be developed under the above grant projects
   - Reduction of risk due to Intellectual Property complexities that may result from separate control system vendors and PXiSE
   - Cybersecurity

   TO NOW READ:
   * Both grant projects would require integration with all BESS inverters for the purpose of centralizing control of all BESS to provide grid services to GPA's power system. This amendment requires all

Phase IV Bidders integrate and use the PXiSE control system, or an equivalent or better control system, as part of their proposal. GPA based this decision on:

- Reduction of technical risk of integration with systems to be developed under the above grant projects
- Reduction of risk due to Intellectual Property complexities that may result from separate control system vendors and PXiSE
- Cybersecurity

5. *REMOVE* Page 102c of 263 and *REPLACE* with Page 102d of 263 (see attached):

Under, Volume II: Technical Qualification Proposal Requirements, Item 1. Overview, ENERGY AND CAPACITY paragraph is changed:

FROM:

- ENERGY AND CAPACITY: The renewable energy resource shall deliver an annual minimum energy (AC) as specified in the Bidder's Qualitative Proposal with a maximum export capacity of 60 MW (AC) at the interconnection point; this may be a combination of several generation units at one or more sites. However, the nameplate capacity that can be installed may be lower than 60 MW at 115 kV, subject to the maximum additional MW capacity that the GPA system can handle as determined by a System Integration Study. The System Integration Study will be completed within 120 days after evaluation of the Price Proposal(s) and initial notification of the most qualified Bidders. For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 60% of the resource to be DC-coupled to the energy storage system with the remaining 40% AC-coupled to the GPA grid. Therefore, 60% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid. The energy storage system shall also provide ramp-rate control for the power delivered from 40% of the total project capacity such that the ramp-rates are kept within 1% per minute at the guaranteed success rate of 95% during the energy production period. However, before or after a GPA curtailment, this rate may be exceeded at the request of the GPA Power System Control Center operators. GPA will not pay for the energy delivered to the GPA grid that did not meet the guaranteed success rate.

TO NOW READ:

* ENERGY AND CAPACITY: The renewable energy resource shall deliver an annual minimum energy (AC) as specified in the Bidder's Qualitative Proposal with a maximum export capacity of 60 MW (AC) at the interconnection point; this may be a combination of several generation units at one or more sites. However, the nameplate capacity that can be installed may be lower than 60 MW at 115 kV, subject to the maximum additional MW capacity that the GPA system can handle as determined by a System Integration Study. The System Integration Study will be completed within 120 days after evaluation of the Price Proposal(s) and initial notification of the most qualified Bidders. For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. Therefore, 50% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid. The energy storage system shall also provide ramp-rate control for the power delivered from 50% of the total project capacity such that the ramp-rates are kept within 1% per minute at the guaranteed success rate of 95% during the energy production period. However, before or after a GPA curtailment, this

rate may be exceeded at the request of the GPA Power System Control Center operators. GPA will not pay for the energy delivered to the GPA grid that did not meet the guaranteed success rate.

INCLUSIONS:

1. ADD Page 224c of 263 - Transmission One Line 11-15-2022.pdf – Page 1 (see attached).
   Dededo Indoor Sub Switchgrear Drawings – Page 2 (see attached).

2. *REMOVE* Page 197a of 263 and *REPLACE* with Page 197a.1b of 263 (see attached):

   Under Volume V: Required Forms, APPENDIX A, Proposal Checklists, DOCUMENT RECEIPT CHECKLIST, include the following to the list of Appendices:
   * APPENDIX Q – SCADA Requirements

3. ADD Page 245b of 263 – Appendix Q: SCADA Requirements (see attached).

4. ADD Page 224d of 263 – Pulantat Substation One Line Diagram Sheet (see attached).

5. *REMOVE* Page 254a of 263 and *REPLACE* with Page 254b of 263 (see attached):

   Under PART 2 – TECHNICAL DATA, Item 10. Interconnection and Transmission Information to ADD:

   * 10.3 Total Interconnection Cost: ($/MWH):

Bidder No.: 6 dated 02/08/2023:

QUESTION:
1. Due to the busy nature of construction companies on Guam, we would like to request that the submission deadline for the bids be extended up to May 15, 2023.

ANSWER:
Please refer to the updated Bid Milestones table in the most recent amendment to this bid for the updated submittal due dates.

QUESTION:
2. We would like to request also that submission of the Price Proposal be separate from submission of the Technical Proposal, and that Price Proposal deadline be one month after notification that bidder is deemed qualified.

ANSWER:
Please refer to the updated Bid Milestones table in the most recent amendment to this bid. The Technical Qualification Proposal shall be submitted on or before the Cut-Off Date for Receipt of Technical Proposals (Unpriced). The Priced Proposal shall be submitted on or before the Cut-Off Date for Receipt of Priced Proposals.

Bidder No.: 5 dated 03/06/2023:

QUESTION:

1. As you know, We Bidder No.: 5 are currently preparing the bid proposal.

   So, please provide the GPA's grid information below. We would like to have a grid impact study before bidding to offer the competitive tariff.

   We would truly appreciate it if you could send it as soon as possible.

   Request Information

   1. Annual Power System Data (PSS/E Format)

   - Sequence file

   - Dynamic Data (PSS/E Dynamic Data, it should be initialized)

   2. Reliability Standards

   - N-x contingency (What number of X is needed)

   - Overflow % of transmission line at the contingency

   - Typical CCT (Critical Clearing Time) with the transmission level

   - Secure voltage range (0.9 pu ~ 1.05pu)

   - ZIP Load Ratio

ANSWER:

The bidder's request to complete the grid impact study, or system integration study, before the proposals are submitted is not necessary. The system integration study was completed after the opening of the Price Proposals for GPA's previous Renewable Energy Resource Acquisitions Phase I, II and III.

Bidder No.: 13 dated 03/06/2023:

QUESTION:

1. Regarding your Invitation for Multi-Step Bid ("IFB") below, we, Bidder No.: 13, would like to request you to extend deadline of bid submission for technical and price proposal.

   - Name of Bid: Renewable Energy Resource Acquisition Phase IV
   - Bid No.: Multi-Step GPA-012-23
   - Current deadline of submission: April 14, 2023
   - Requested extension of deadline of submission: 2 to 3 months

   Upon reviewing the bid documents including amendments, we need more time to prepare land secured, interconnection check and to arrange project financing for this tender.

We are asking for your kind consideration.

ANSWER:

Please refer to the updated Bid Milestones table in the most recent amendment to this bid for the updated submittal due dates.

Bidder No.: 10 dated 03/07/2023:

QUESTION:

1. Please refer to Pay 15, section 1.2.4 Historical Renewable Resource Data – the link provided is not working. How can we obtain the information/data for review/reference?

ANSWER:

The historical renewable resource data can be found in the link below:

https://admin.guampowerauthority.com/uploads/Historical_Renewable_Energy_Data_798ad58342.pdf?updated_at=2023-04-11T05:17:28.371Z

Kindly refer to No. 2 of *CHANGES* above.

Bidder No.: 9 dated 02/07/2023:

QUESTION:

1. (Volume I, §1)
   Confirm that "firm, non-intermittent power" means that solar power generated during daytime hours is to be injected into the GPA grid during GPA specified hours and not that the bidder must guarantee a specific amount of power during specific hours.

ANSWER:

For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. Therefore, 50% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid between the nighttime hours of 6:00 PM to 6:00 AM, or outside of these hours if deemed necessary by the GPA Power System Control Center operators. The amount of power to be delivered to the GPA grid shall be based on the available stored energy and determined by the GPA Power System Control Center operators. The remaining 50% of the total project capacity will deliver ramp-rate controlled power to the GPA grid between the daylight hours of 6:00 AM to 6:00 PM.

Kindly refer to No. 5 of *CHANGES* above.

QUESTION:

2. (Volume I, Table 1)
   Will GPA accept and respond to requests for clarifications to its answers to questions?

ANSWER:

Yes, GPA will accept and respond to requests for clarifications to previously submitted responses if received within one week after the responses were posted on the GPA website.

QUESTION:

3. (Volume I, §1.2.1)
   Please provide a link to 2022 IRP.

ANSWER:

The 2022 Integrated Resource Plan can be downloaded from the following link:

https://admin.guampowerauthority.com/uploads/GPA_2022_Integrated_Resource_Plan_b16ef41f9e.pdf?updated_at=2022-09-20T07:24:07.680Z

Kindly refer to No. 3 of *CHANGES* above.

QUESTION:

4. (Volume I, §1.2.2)
   The link to the map of the Islandwide System Transmission Line Diagram does not appear to work. Please provide the correct link or the diagram itself.

ANSWER:

Please refer to the GPA Islandwide System Transmission Single Line Diagram added to Appendix K.

Kindly refer to No. 1 of *INCLUSIONS* above page 1.

QUESTION:

5. (Volume I, §1.2.2)
   Electrical System Overview – Does GPA have reports on current solar saturation levels and transmission line capacity around the island? Will GPA be providing those to the bidders to allow for the proper sizing of prospective systems to integrate into the GPA infrastructure?

ANSWER:

The Mangilao solar farm transmission lines (X-423 to X-186, X-425 to X-180, X-426 to X-134) and the Dandan solar farm transmission line (X-394 to X-128) are fully saturated. For the transmission line capacities, please refer to the table below for GPA's peak load power flow results.

Guam Power Authority Base Case Power Flow

Peak Load Case

FROM	FNAME	FKV	TO	TNAME	TKV	CK	ST	P	Q	MVA	AMPS	%RATE	RATE	UNIT	AF	AT	AREA
2202	Har345B3	34.50	2219	Har345B1	34.50	1	1	-29.3	-4.6	29.6	495.1	24.7	2008.2	Amp	1	1	1
3300	Agrko13	12.02	6005	Aggreko	0.46	1	1	-22.6	-5.5	23.3	1093.2	57.7	41.0	Mva	1	1	1
2214	Yig345B1	34.50	3300	Agrko13	12.02	1	1	-22.6	-4.4	23.1	381.0	46.6	50.0	Mva	1	1	1
2210	And345B1	34.50	2214	Yig345B1	34.50	1	1	-15.6	0.4	15.7	259.9	28.8	903.7	Amp	1	1	1
2004	Apr345	34.50	2017	Tenjotap	34.50	1	1	-12.1	-2.9	12.4	210.1	23.2	903.7	Amp	1	1	1
2005	Oro345	34.50	2007	CSTapX20	34.50	1	1	-8.4	-1.2	8.5	144.8	29.8	485.3	Amp	1	1	1
2202	Har345B3	34.50	2203	Ded345B1	34.50	1	1	-7.5	-6.1	9.7	161.9	17.9	903.7	Amp	1	1	1
2202	Har345B3	34.50	2222	NFin345	34.50	1	1	-7.5	-1.0	7.6	126.6	14.0	903.7	Amp	1	1	1

2005 Oro345	34.50	2010 CSTapX21	34.50	1	1	-7.0	-1.9	7.2	123.0	13.6	903.7 Amp	1	1	1
2008 CldSt345	34.50	2010 CSTapX21	34.50	1	1	-6.5	-3.4	7.3	123.9	21.8	569.0 Amp	1	1	1
2105 Tum345B1	34.50	2202 Har345B3	34.50	1	1	-6.2	-2.1	6.5	109.4	12.1	903.7 Amp	1	1	1
2108 SV345B1	34.50	2202 Har345B3	34.50	1	1	-5.0	-4.1	6.5	108.5	12.0	903.7 Amp	1	1	1
2218 GiatTap	34.50	2219 Har345B1	34.50	1	1	-3.3	-2.7	4.2	70.7	7.8	903.7 Amp	1	1	1
2217 GIA345B1	34.50	2218 GiatTap	34.50	1	1	-3.2	-2.8	4.3	71.6	10.2	702.9 Amp	1	1	1
2214 Yig345B1	34.50	3212 Yigo T30	13.80	1	1	-3.1	2.9	4.3	70.6	15.8	27.0 Mva	1	1	1
2212 Pag345B1	34.50	2220 Mang345B	34.50	2	1	-2.4	-0.0	2.4	40.3	4.5	903.7 Amp	1	1	1
2102 Bar345	34.50	2216 GAA345B1	34.50	1	1	-2.2	-2.6	3.4	57.4	6.4	903.7 Amp	1	1	1
2108 SV345B1	34.50	2110 HafaTap	34.50	1	1	-2.0	2.0	2.8	47.2	5.2	903.7 Amp	1	1	1
2101 Aga345	34.50	2106 Ani345B1	34.50	1	1	-1.9	2.0	2.8	47.2	5.3	903.7 Amp	1	1	1
2208 NCS345	34.50	2222 NFin345	34.50	1	1	-1.4	-0.7	1.6	26.5	5.5	485.3 Amp	1	1	1
2209 Pott345	34.50	2210 And345B1	34.50	1	1	-1.4	-0.6	1.5	25.7	5.3	485.3 Amp	1	1	1
2003 Tal345	34.50	2004 Apr345	34.50	1	1	-0.9	0.1	0.9	15.7	3.1	518.8 Amp	1	1	1
2004 Apr345	34.50	2005 Oro345	34.50	1	1	-0.8	3.6	3.7	62.9	7.0	903.7 Amp	1	1	1
2003 Tal345	34.50	3003 TalofT80	13.80	1	1	-0.6	0.7	1.0	16.2	7.7	12.5 Mva	1	1	1
2216 GAA345B1	34.50	2217 GIA345B1	34.50	1	1	-0.5	-1.4	1.5	25.1	3.6	702.9 Amp	1	1	1
1101 Aga115	115.00	2111 AgESS345	34.50	1	1	-0.4	-0.5	0.6	3.0	2.1	30.0 Mva	1	1	1
2111 AgESS345	34.50	6007 AgESS440	0.44	1	1	-0.4	-0.5	0.6	10.2	2.1	30.0 Mva	1	1	1
2209 Pott345	34.50	2222 NFin345	34.50	1	1	-0.3	-0.1	0.3	4.7	1.0	485.3 Amp	1	1	1
2212 Pag345B1	34.50	2220 Mang345B	34.50	1	1	-0.2	-0.2	0.3	4.7	0.5	903.7 Amp	1	1	1
210 Mache_CT	13.80	3210 MacheT90	13.80	1	1	-0.0	-0.0	0.0	0.6	0.0	418328.1Amp	1	1	1
2220 Mang345B	34.50	2221 MangESS	34.50	1	1	-0.0	-0.0	0.0	0.6	0.0	0.0 Amp	1	1	1
2003 Tal345	34.50	6008 TaESS440	0.44	1	1	-0.0	-0.5	0.5	8.5	1.7	30.0 Mva	1	1	1
14 OrteUnts	13.80	3005 OroteT11	13.80	1	1	-0.0	-0.0	0.0	0.0	0.0	418328.1Amp	1	1	1
2204 Mar345B1	34.50	3205 MarboT14	13.80	1	1	-0.0	-0.0	0.0	0.0	0.0	5.0 Mva	1	1	1
17 MEC 9	13.80	1005 Pit115B1	115.00	1	1	-0.0	-0.0	0.0	0.0	0.0	56.0 Mva	1	1	1
2018 Dandan	34.50	6006 Dandan_PV	0.48	1	1	0.0	-0.0	0.0	0.0	0.0	33.2 Mva	1	1	1
205 Marbo CT	13.80	2204 Mar345B1	34.50	1	1	0.0	0.0	0.0	0.0	0.0	20.0 Mva	1	1	1
12 Cabras_3	13.80	1001 Cab115EB	115.00	1	1	0.0	0.0	0.0	0.0	0.0	50.0 Mva	1	1	1
13 Cabras_4	13.80	1001 Cab115EB	115.00	1	1	0.0	0.0	0.0	0.0	0.0	50.0 Mva	1	1	1
2005 Oro345	34.50	3006 OroteT12	13.80	1	1	0.0	0.0	0.0	0.0	0.0	12.5 Mva	1	1	1
2005 Oro345	34.50	3005 OroteT11	13.80	1	1	0.0	0.0	0.0	0.0	0.0	14.0 Mva	1	1	1
2222 NFin345	34.50	3215 NFin T119	13.80	1	1	0.0	0.0	0.0	0.0	0.0	19.5 Mva	1	1	1
2003 Tal345	34.50	2018 Dandan	34.50	1	1	0.0	-0.0	0.0	0.2	0.0	472.9 Amp	1	1	1
1001 Cab115EB	115.00	1005 Pit115B1	115.00	1	1	0.0	4.4	4.4	21.1	2.3	908.7 Amp	1	1	1

2222 NFin345	34.50	3214 NFin T118	13.80	1	1	0.0	0.0	0.0	0.5	0.2	19.5 Mva	1	1	1
2103 RBa345B1	34.50	3105 RadBaT24	13.80	1	1	0.0	0.1	0.1	1.6	1.0	9.4 Mva	1	1	1
2001 Cab345	34.50	4001 CbrsStUp	4.16	1	1	0.2	0.2	0.2	3.9	3.3	7.0 Mva	1	1	1
2009 SRF345	34.50	3015 SRFT18	13.80	1	1	0.3	0.1	0.3	5.3	2.2	14.0 Mva	1	1	1
2208 NCS345	34.50	4201 NCS T47	4.16	1	1	0.4	0.3	0.5	8.0	9.2	5.3 Mva	1	1	1
2005 Oro345	34.50	3016 OroteT28	13.80	1	1	0.5	0.4	0.6	10.6	4.4	14.0 Mva	1	1	1
2011 Pul345	34.50	2102 Bar345	34.50	1	1	0.6	-1.2	1.3	22.8	2.5	903.7 Amp	1	1	1
2002 Pit345	34.50	3002 Piti T8	13.80	1	1	0.7	0.3	0.8	12.9	3.8	20.0 Mva	1	1	1
2103 RBa345B1	34.50	3104 RadBaT23	13.80	1	1	0.7	0.5	0.9	14.9	9.5	9.4 Mva	1	1	1
2011 Pul345	34.50	3009 PulanT95	13.80	1	1	1.0	1.0	1.4	23.4	6.9	20.0 Mva	1	1	1
2208 NCS345	34.50	2219 Har345B1	34.50	1	1	1.0	0.4	1.1	18.7	3.9	485.3 Amp	1	1	1
2003 Tal345	34.50	2011 Pul345	34.50	1	1	1.6	-0.3	1.6	26.8	3.0	903.7 Amp	1	1	1
2104 Tam345B1	34.50	2110 HafaTap	34.50	1	1	2.0	-2.0	2.8	47.4	6.7	702.9 Amp	1	1	1
2209 Pott345	34.50	3207 PotsT110	13.80	1	1	1.7	0.8	1.8	30.4	34.8	5.2 Mva	1	1	1
2101 Aga345	34.50	3101 Agana T9	13.80	1	1	2.0	0.8	2.1	36.1	10.7	20.0 Mva	1	1	1
2211 Mac345B1	34.50	2220 Mang345B	34.50	1	1	2.6	-0.0	2.6	44.3	4.9	903.7 Amp	1	1	1
2217 GIA345B1	34.50	4213 GIAT Trm	4.16	1	1	2.8	1.4	3.1	52.3	33.2	9.4 Mva	1	1	1
2005 Oro345	34.50	2009 SRF345	34.50	1	1	3.0	2.0	3.6	61.3	10.8	569.0 Amp	1	1	1
2005 Oro345	34.50	2009 SRF345	34.50	2	1	3.0	2.0	3.6	61.3	10.8	569.0 Amp	1	1	1
2219 Har345B1	34.50	3202 HarmnT22	13.80	1	1	3.0	1.2	3.2	54.2	23.2	14.0 Mva	1	1	1
2103 RBa345B1	34.50	2212 Pag345B1	34.50	1	1	3.5	-1.6	3.8	63.8	13.1	485.3 Amp	1	1	1
2002 Pit345	34.50	3001 Piti T7	13.80	1	1	3.6	-0.2	3.6	61.0	34.6	10.5 Mva	1	1	1
2210 And345B1	34.50	3209 AnderT16	13.80	1	1	3.9	0.0	3.9	65.1	9.8	40.0 Mva	1	1	1
2101 Aga345	34.50	2103 RBa345B1	34.50	1	1	4.3	-1.0	4.4	73.5	15.1	485.3 Amp	1	1	1
2014 Ten345	34.50	2017 Tenjotap	34.50	1	1	4.9	3.2	5.9	98.6	10.9	903.7 Amp	1	1	1
11 TenjoDsl	13.80	2014 Ten345	34.50	1	1	4.9	3.3	6.0	246.6	19.8	30.0 Mva	1	1	1
2101 Aga345	34.50	2104 Tam345B1	34.50	1	1	5.6	-3.3	6.5	108.8	12.0	903.7 Amp	1	1	1
2105 Tum345B1	34.50	3107 TumonT60	13.80	1	1	5.6	0.6	5.6	93.9	18.7	30.0 Mva	1	1	1
2009 SRF345	34.50	3014 SRFT17	13.80	1	1	5.7	3.9	6.9	117.4	49.2	14.0 Mva	1	1	1
2203 Ded345B1	34.50	2210 And345B1	34.50	1	1	5.9	1.3	6.0	99.7	14.9	702.9 Amp	1	1	1
2012 Uma345	34.50	3011 UmatT120	13.80	1	1	6.0	-0.3	6.0	101.5	19.9	30.0 Mva	1	1	1
2004 Apr345	34.50	3004 Apra T70	13.80	1	1	6.0	-0.4	6.0	101.2	47.9	12.5 Mva	1	1	1
2004 Apr345	34.50	2012 Uma345	34.50	1	1	6.0	-0.2	6.0	101.6	11.2	903.7 Amp	1	1	1
2005 Oro345	34.50	3012 OroteT13	13.80	1	1	6.4	1.6	6.6	112.5	47.2	14.0 Mva	1	1	1
2008 CldSt345	34.50	3007 CldST25	13.80	1	1	6.5	3.4	7.3	123.9	52.0	14.0 Mva	1	1	1
10 TalofDsl	13.80	3003 TalofT80	13.80	1	1	6.5	-0.4	6.5	267.9	0.1	418328.1Amp	1	1	1

9 ManenDsl	13.80	3009 PulanT95	13.80	1	1	6.6	-1.2	6.7	274.0	0.1	418328.1Amp	1	1	1
2210 And345B1	34.50	3208 AnderT15	13.80	1	1	6.9	-0.6	7.0	115.5	17.4	40.0 Mva	1	1	1
2108 SV345B1	34.50	3113 SanVT122	13.80	1	1	7.0	2.1	7.3	122.5	24.4	30.0 Mva	1	1	1
2002 Pit345	34.50	2017 Tenjotap	34.50	1	1	7.2	-0.1	7.2	120.8	13.4	903.7 Amp	1	1	1
2002 Pit345	34.50	2101 Aga345	34.50	1	1	8.0	-1.5	8.1	136.2	15.1	903.7 Amp	1	1	1
2204 Mar345B1	34.50	2212 Pag345B1	34.50	1	1	8.0	3.3	8.6	143.3	29.7	485.3 Amp	1	1	1
2203 Ded345B1	34.50	2204 Mar345B1	34.50	1	1	8.0	3.4	8.7	143.2	15.9	903.7 Amp	1	1	1
1103 Tam115B1	115.00	1201 Har115B1	115.00	1	1	8.0	4.5	9.2	44.7	5.0	908.7 Amp	1	1	1
2002 Pit345	34.50	2007 CSTapX20	34.50	1	1	8.5	1.4	8.6	144.8	29.8	485.3 Amp	1	1	1
2104 Tam345B1	34.50	3106 TamunT50	13.80	1	1	8.6	1.5	8.8	146.8	39.1	22.4 Mva	1	1	1
2210 And345B1	34.50	2222 NFin345	34.50	1	1	9.3	1.9	9.4	156.8	17.4	903.7 Amp	1	1	1
2104 Tam345B1	34.50	2105 Tum345B1	34.50	1	1	9.7	-3.6	10.4	173.8	19.2	903.7 Amp	1	1	1
2214 Yig345B1	34.50	2219 Har345B1	34.50	1	1	10.0	1.5	10.1	167.0	18.5	903.7 Amp	1	1	1
2106 Ani345B1	34.50	3110 AnigT100	13.80	1	1	10.1	0.4	10.1	170.7	33.8	30.0 Mva	1	1	1
2105 Tum345B1	34.50	3109 TumonT61	13.80	1	1	10.3	-1.9	10.5	175.7	37.8	28.0 Mva	1	1	1
2101 Aga345	34.50	2102 Bar345	34.50	1	1	10.7	1.2	10.8	181.5	20.1	903.7 Amp	1	1	1
2216 GAA345B1	34.50	3213 GAA T105	13.80	1	1	10.8	1.9	11.0	184.1	43.8	25.0 Mva	1	1	1
2219 Har345B1	34.50	3201 HarmnT21	13.80	1	1	11.3	3.6	11.9	198.4	39.6	30.0 Mva	1	1	1
2104 Tam345B1	34.50	3108 TamunT51	13.80	1	1	11.9	2.2	12.1	202.3	43.1	28.0 Mva	1	1	1
2002 Pit345	34.50	2106 Ani345B1	34.50	1	1	12.1	-1.4	12.2	205.0	22.7	903.7 Amp	1	1	1
2211 Mac345B1	34.50	2216 GAA345B1	34.50	1	1	12.6	2.8	12.9	215.9	24.0	903.7 Amp	1	1	1
1005 Pit115B1	115.00	2002 Pit345	34.50	1	1	12.8	4.1	13.4	64.6	13.4	100.0 Mva	1	1	1
2102 Bar345	34.50	3103 BarriT75	13.80	1	1	13.5	2.5	13.7	231.7	61.3	22.4 Mva	1	1	1
2002 Pit345	34.50	2010 CSTapX21	34.50	1	1	13.5	5.6	14.6	245.3	27.2	903.7 Amp	1	1	1
2212 Pag345B1	34.50	3211 PagaT115	13.80	1	1	14.0	2.0	14.1	237.5	47.2	30.0 Mva	1	1	1
2001 Cab345	34.50	2002 Pit345	34.50	1	1	15.3	4.0	15.9	266.1	14.7	1807.4 Amp	1	1	1
1001 Cab115EB	115.00	2001 Cab345	34.50	1	1	15.5	4.4	16.1	77.8	14.4	112.0 Mva	1	1	1
2203 Ded345B1	34.50	3204 DededT55	13.80	1	1	16.4	2.5	16.5	273.2	55.1	30.0 Mva	1	1	1
2211 Mac345B1	34.50	3210 MacheT90	13.80	1	1	17.8	3.5	18.1	303.7	64.7	28.0 Mva	1	1	1
2101 Aga345	34.50	3102 AganaT65	13.80	1	1	18.1	4.2	18.6	312.6	62.1	30.0 Mva	1	1	1
208 Ded CT#1	13.80	2203 Ded345B1	34.50	1	1	18.9	8.3	20.7	847.5	68.9	30.0 Mva	1	1	1
209 Ded CT#2	13.80	2203 Ded345B1	34.50	1	1	19.0	8.2	20.7	850.8	69.1	30.0 Mva	1	1	1
211 Yigo__CT	13.80	3212 Yigo T30	13.80	1	1	19.4	-3.3	19.7	807.0	0.2	418328.1Amp	1	1	1
1005 Pit115B1	115.00	1201 Har115B1	115.00	1	1	28.0	6.1	28.7	138.3	15.4	908.7 Amp	1	1	1
1101 Aga115	115.00	2101 Aga345	34.50	1	1	30.9	6.4	31.6	152.9	28.2	112.0 Mva	1	1	1
1001 Cab115EB	115.00	1101 Aga115	115.00	2	1	32.7	6.2	33.3	160.6	17.7	908.7 Amp	1	1	1

15 TEMES 13.80 2002 Pit345 34.50 1 1 25.6 -2.1 25.7 1083.8 43.8 59.0 Mva 1 1 1
1001 Cab115EB 115.00 1101 Aga115 115.00 1 1 32.7 6.2 33.3 160.6 17.7 908.7 Amp 1 1 1
2202 Har345B3 34.50 2211 Mac345B1 34.50 1 1 33.1 6.1 33.7 562.1 62.3 903.7 Amp 1 1 1
1101 Aga115 115.00 1103 Tam115B1 115.00 1 1 34.8 6.8 35.4 171.7 18.9 908.7 Amp 1 1 1
1201 Har115B1 115.00 2219 Har345B1 34.50 1 1 36.0 11.6 37.8 183.7 33.8 112.0 Mva 1 1 1
1 Cabras_1 13.80 1001 Cab115EB 115.00 1 1 37.8 15.9 41.0 1690.4 51.2 80.0 Mva 1 1 1
16 MEC 8 13.80 1005 Pit115B1 115.00 1 1 41.0 9.5 42.1 1760.1 75.1 56.0 Mva 1 1 1

QUESTION:

6. (Volume I, §1.2.2)
   Electrical System Overview – Will GPA provide the specifications for the specific substations upon request?

ANSWER:

The complete substation specifications can be provided to the winning Bidder after the contract is awarded. However, before the contract is awarded, the level of detail that can be released may be limited. Please identify the type of specifications needed and GPA may provide it if allowable.

QUESTION:

7. (Volume I, §1.2.2)
   Electrical System Overview – Will GPA provide the transmission line capacity for specific areas of the island upon request? Specifically requesting the current capacity for Route 17.

ANSWER:

Please refer to the table for GPA's peak load power flow results provided in the response for Question #5. Also refer to the information in the table for the 34.5 kV transmission line X-124 to X-038 from Talofofo Substation to Apra Heights Substation.

QUESTION:

8. (Volume I, §1.2.2)
   Electrical System Overview – Will GPA provide the substation capacity for specific locations if not otherwise identified within the specifications? Specifically requesting the current capacity at the Dandan substation.

ANSWER:

1) Please refer to the table below.

ITEM	SUBSTATION	OPERATED BY	XFMR	CAPACITY (MVA)	Voltage (kV)	Interconnection Allowed? (Yes/No)	Available Space for Additional Breaker? (Yes/No)	Estimated Interconnection Capacity? (MWac)
1	AGANA SUBSTATION	NAVY	T-9	20	34.5/13.8	NO	NO	

2	AGANA SUBSTATION	GPA	T-65	30	34.5/13.8			
3	AGANA SUBSTATION	GPA	T-400	112	115/34.5/13.8			
4	ANDERSEN SUB	NAVY	T-15	40	34.5/13.8	NO	NO	
5	ANDERSEN SUB	NAVY	T-16	40	34.5/13.8			
6	ANIGUA SUBSTATION	GPA	T-100	30	34.5/13.8	NO	NO	
7	APRA SUBSTATION	Joint Use	T-70	12.5	34.5/13.8	NO FOR T-70; SPACE AVAILABLE FOR 115 KV TRANSFORMER THAT CONTRACTORS WILL NEED TO INSTALL	SPACE AVAILABLE FOR 115 KV TRANSFORMER AND BREAKER THAT CONTRACTOR WILL NEED TO PURCHASE AND INSTALL	
8	BARRIGADA SUBSTATION	GPA	T-75	22.4	34.5/13.8	NO	NO	
9	CABRAS PLANT	GPA	START UP	7	34.5/4.16	No		
10	CABRAS PLANT	GPA	MAIN #1	80	115/13.2			
11	CABRAS PLANT	GPA	AUX #1	7	13.8/4.16			
12	CABRAS PLANT	GPA	MAIN #2	80	115/13.2			
13	CABRAS PLANT	GPA	AUX #2	7	13.8/4.16			
14	CABRAS PLANT	GPA	T-300	112	115/34.5/13.2			
15	CABRAS PLANT	GPA	MAIN #3	50	115/13.8			
16	CABRAS PLANT	GPA	AUX #3	6.3	13.8/4.16			
17	CABRAS PLANT	GPA	MAIN #4	50	115/13.8			
18	CABRAS PLANT	GPA	AUX #4	6.3	13.8/4.16			
19	COLD STORAGE	NAVY	T-25	14	34.5/13.8	No		

20	COLD STORAGE	NAVY	GT-6		34.5			
21	DEDEDO CT#1	GPA	T-191	30	34.5/13.8	No		
22	DEDEDO CT#2	GPA	T-192	30	34.5/13.8			
23	DEDEDO SUBSTATION	GPA	T-55	30	34.5/13.8	NO FOR T-55; SPACE AVAILABLE FOR NEW T-54 TRANSFORMER THAT CONTRACTOR WILL NEED TO PURCHASE AND INSTALL	SPACE AVAILABLE FOR 34.5 KV TRANSFORMER; CONTRACTOR WILL NEED TO PURCHASE 13.8 KV SWITCHGEAR	
24	MEC PLANT	MEC	UNIT 8	56	115/13.8	No		
25	MEC PLANT	MEC	UNIT 9	56	115/13.8			
26	GAA SUBSTATION	GPA	T-105	30	34.5/13.8	NO	NO	
27	HARMON SUBSTATION	GPA	T-500	112	115/34.5/13.8	NO	NO	
28	HARMON SUBSTATION	GPA	T-501	112	115/34.5/13.8			
29	HARMON SUBSTATION	Joint Use	T-21	30	34.5/13.8			
30	HARMON SUBSTATION	NAVY	T-22	14	34.5/13.8			
31	HARMON SUBSTATION	Out of Service	T-44		34.5/13.8			
32	MACHECHE SUBSTATION	GPA	T-90	28	34.5/13.8	NO	NO	
33	MARBO SUB	NAVY	T-14	5	34.5/13.8	NO	NO	
34	MARBO SUB	NAVY	MARBO CT	20	34.5/13.8	No		
35	NCS, FINEGAYAN	NAVY	T-47	5.3	34.5/4.16	NO	NO	
36	OROTE PLANT	NAVY	T-10	14	34.5/13.8	NO	NO	
37	OROTE PLANT	NAVY	T-11	14	34.5/13.8			

38	OROTE PLANT	NAVY	T-12	14	34.5/13.8			
39	OROTE PLANT	NAVY	T-13	14	34.5/13.8			
40	OROTE PLANT	NAVY	T-28	14	34.5/13.8			
41	PAGAT SUB	GPA	T-115	30	34.5/13.8	NO	NO	
42	PITI SUBSTATION	Joint Use	T-7	10.5	34.5/13.8	NO	NO	
43	PITI SUBSTATION	GPA	T-700	100	115/34.5/13.8			
44	PITI SUBSTATION	NAVY	T-8	10.5	34.5/13.8			
45	POTTS JUNCTION	AIR FORCE	T-110	5.2	34.5/13.8	NO	NO	
46	PULANTAT SUBSTATION	GPA	T-95	30	34.5/13.8	NO FOR T-95; SPACE AVAIALABLE FOR T-96 TRANSFORMER THAT CONTRACTOR WILL NEED TO PURCHASE AND INSTALL	SPACE AVAILABLE FOR 34.5 KV AND 13.8 KV SWITCHGEAR THAT CONTRACTORS WILL NEED TO REFURBISH AND ENERGIZE	
47	RADIO BARRIGADA	NAVY	T-23	9.4	34.5/13.8	NO	NO	
48	RADIO BARRIGADA	NAVY	T-24	9.4	34.5/13.8			
49	SAN VITORES SUBSTATION	GPA	T-122	30	34.5/13.8	NO	NO	
50	SRF SUBSTATION	NAVY	T-17	14	34.5/13.8	NO	NO	
51	SRF SUBSTATION	NAVY	T-18	14	34.5/13.8			
52	TALOFOFO SUBSTATION	GPA	T-80	12.5	34.5/13.8	NO	NO	
53	TAMUNING SUBSTATION	GPA	T-50	22.4	34.5/13.8	NO	NO	
54	TAMUNING SUBSTATION	GPA	T-51	28	34.5/13.8			

55	TAMUNING SUBSTATION	GPA	T-600	11 2	115/34.5/ 13.8			
56	TANGUISSON PLANT	PEGI	MAIN #1	33. 6	34.4/13.8	Out of Service		
57	TANGUISSON PLANT	PEGI	AUX #1	3.1	13.8/2.4			
58	TANGUISSON PLANT	PEGI	MAIN #2	33. 6	34.4/13.8			
59	TANGUISSON PLANT	PEGI	AUX #2	3.5	13.8/2.4			
60	TANGUISSON PLANT	PEGI	STATI ON PWR	2.5	34.5/2.4			
61	TEMES PLANT	TEM ES	T-2	59	34.5/13.8	No		
62	TENJO POWER PLANT	GPA	T-35	30	34.5/13.8	No		
63	TENJO POWER PLANT	GPA	T-36	33. 3	34.5/13.8			
64	TUMON SUBSTATION	GPA	T-60	30	34.5/13.8	NO	NO	
65	TUMON SUBSTATION	GPA	T-61	28	34.5/13.8			
66	UMATAC SUBSTATION	GPA	T-120	30	34.5/13.8	YES	CONTRACT ORS WILL NEED TO INSTALL 13.8 KV SWITCHGEA R AND BREAKER	20
67	YIGO SUBSTATION	GPA	T-30	30	34.5/13.8	NO	NO	
68	MOBILE SUBSTATION 30 MVA	GPA	MOB-30	30	34.5/13.8	No		
69	MOBILE SUBSTATION 14 MVA	GPA	MOB-14	14	34.5/13.8	No		
70	DANDAN SUBSTATION	GPA				YES	Yes	25 MW shifted at night; 40 MW if UG transmiss ion line is

								upgraded to 2-750 Cu
71	MANGILAO SUBSTATION	GPA				No		

QUESTION:

9. (Volume I, §1.2.2)
   Electrical System Overview – Link goes to a blank page. Is there information that was intended to be conveyed to bidders on this page that is not contained within the RFP documents? If so, please provide it.

ANSWER:

Please refer to the response for Question #4.

QUESTION:

10. (Volume I, §2.10.3)
    Please provide an example of the net present value GPA expects to use; specifically, what will be included in the "cost of integrating" (as noted in Section 2.10.1) as well as clarification if hourly costs will be used for the cost of existing non-renewable generation.

ANSWER:

GPA will not accept proposals above $0.179 per kWh, unless the value of the interconnection cost is deemed acceptable by GPA.

QUESTION:

11. (Volume I, §4.33)
    Standard Work Schedule – Please provide the "published GPA hours and holiday" document.

ANSWER:

Work scheduled and performed by the CONTRACTOR on GPA's premises shall be between the hours of 7:30 AM to 4:30 PM.

The following are the observed holidays:
New Year's Day: January 1
Martin Luther King, Jr. Day: Third Monday in January
Guam History and Chamorro Heritage Day: First Monday in March
Memorial Day: Last Monday in May
Independence Day: July 4
Liberation Day: July 21
Labor Day: First Monday in September
All Souls' Day: November 2
Veterans' Day: November 11
Thanksgiving: Fourth Thursday in November
Our Lady of Camarin Day: December 8
Christmas: December 25

QUESTION:

12. (Volume I, §4.34)
    Interference with Operations – Is there a list/map of GPA facilities/equipment? If so, please provide it.

ANSWER:

The list includes all facilities and/or equipment owned and operated by GPA, such as the equipment within the GPA substations, transmission lines, distribution lines, etc. However, if such interference is unavoidable, the GPA representative will establish the necessary procedures under which the interferences will be allowed.

Please also refer to the following link for more information on GPA's inventory and non-inventory technical specifications: https://go.opengovguam.com/bids/tech_docs/gpa.

QUESTION:

13. (Volume II, §1)
    Are the items bulleted in this section mandatory requirements that all projects must meet, or can bidders propose projects that do not meet all of these requirements? If not mandatory, how will GPA value each of these requirements compared to projects that do not meet each requirement?

ANSWER:

All of the items listed are mandatory unless stated otherwise.

QUESTION:

14. (Volume II, §1, 1st Bullet)
    Please provide a definition (or reference to applicable GPA tariff or IEEE standard) for "grid-forming" and "black-start"; does GPA consider these terms interchangeable or is there a difference between the terms. Please provide the testing requirements GPA will use to certify a resource to provide such services (e.g., the amount of black-start capacity the project is required to provide to the Islandwide Power System and the duration the project must provide such capability). Does GPA require that the project have black-start capability 24/7 (e.g., must the project retain sufficient energy in its BESS to provide black-start at all times)?

ANSWER:

The Contractor's system may be required to assist GPA's network operations during power system restoration after a system-wide black out or in the aftermath from a natural disaster such as a typhoon, tropical storm, or other event to assist the whole grid or to form and serve power to a separate islanded microgrid within the GPA system.

It is GPA's intent that after a severe weather event such as those listed in the Table below or after a power system blackout, the Contractors system be able to:

- Grid form GPA's system to bring back the entire grid after a blackout; or,
- Form and supply power to an islanded microgrid until other portions of GPA's Grid are being restored.

This means that the Contractor's system must be able to form a microgrid, provide appropriate voltage and frequency to the microgrid loads at all times, and operate for several hours up to the limits of the initial BESS state of charge for up to safe limits duration of the BESS (a minimum of 4-

hour). Contractor may meet the 12-hour dispatch requirement either through a long-duration BESS or through separate shorter duration BESS. In the latter case, each BESS would be operated sequentially to provide power for a longer period of time.

The nature of these requirements will depend on the interconnection point to the GPA Grid where the Contractor's system is installed. It will also depend upon the characteristics of the Contractor's system. Therefore, at least six months prior to system commissioning, GPA will address these with the completion of an operational plan and policy for black-start and grid-forming responsibilities specific for the Contractor's systems. Regardless of interconnection point, the Contractor's system shall comply with the intentional island clause (8.2) of IEEE Std 1547-2018. This clause mainly focusses on transitioning from and transitioning back to connected/paralleled operation with the Area EPS (i.e. GPA Grid).

QUESTION:

15. (Volume II, §1, 2nd Bullet)
    Confirm "annual Minimum energy (AC)" is measured in MWh (AC) at the interconnection point.

ANSWER:

Yes, the annual minimum energy (AC) is measured in MWh (AC) at the interconnection point.

QUESTION:

16. (Volume II, §1, 2nd Bullet)
    Please clarify the statement "However, the nameplate capacity that can be installed may be higher than 80 MW..." does this mean that a bidder can propose a project with an export capacity of more than 80 MW(AC) as measured at the interconnection point? Is there any limit on the amount of generation installed at the project site so long as the system is limited to a maximum export capacity of 80 MW(AC) at the interconnection point? For example, could a project with 200 MW(DC) of solar generation capacity, 200MW(DC) of DC-DC converter capacity, and 80 MW(AC) of AC-DC inverter capacity be proposed? What about the same project but with 100MW(AC) of inverter capacity with a plant controller limitation that limited the output of the inverters to no more than 80MW(AC)?

ANSWER:

The statement in question should read: "However, the nameplate capacity that can be installed may be <u>lower</u> than 60 MW at 115 kV, subject to the maximum additional MW capacity that the GPA system can handle as determined by a System Integration Study." Please refer to the amendment to page 102 of 263 of the bid document correcting this error.

QUESTION:

17. (Volume II, §1, 3rd Bullet)
    Please confirm that the requirement is that the project be capable of storage any energy generated between 6am and 6pm on site for dispatch by GPA between 6pm and 6pm and not that the project provide its full capacity for the period 6pm to 6am. For example, an 80 MW(AC) project that generated and stored 250 MWh of energy on a given day would make that energy available for dispatch by GPA between 6pm and 6am and not that an 80MW(AC) project would have 960 MWh of energy available every day for dispatch by continuously from 6pm to 6am?

ANSWER:

For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 50% of the resource to be DC-coupled to the energy storage system with

the remaining 50% AC-coupled to the GPA grid. Therefore, 50% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid between the hours of 6:00 PM to 6:00 AM, or outside of these hours if deemed necessary by the GPA Power System Control Center operators.

It is not required for the project to provide constant maximum output between the hours of 6:00 PM to 6:00 AM, unless it has sufficient stored energy to do so. The power of the renewable energy resource that is generated and stored in the energy storage system between the hours of 6:00 AM to 6:00 PM shall be dispatched at the point of interconnection for 12 hours, between the hours of 6:00 PM to 6:00 AM, as required by the GPA Power System Control Center operators or a SCADA control point. Dispatchable power is delivered on demand and at various MW output levels at the request of GPA's Power System Control Center. The total capacity and energy available for dispatching shall be provided to the GPA Power System Control Center through a SCADA point every second.

QUESTION:

18. (Volume II, §1, 3rd Bullet)
    Will GPA dispatch the project's full available capacity each day prior to 6am (i.e., will GPA empty the batteries each night)? If not, does GPA still pay for energy that would have been generated but could not be stored because GPA did not fully dispatch the project the previous day?

ANSWER:

GPA intends to reduce the battery SOC to its manufacturer recommended minimum each night. However, GPA will not pay the Contractor Curtailment fees for dispatching limited outputs based on the power system demand. GPA will only pay Curtailment fees due to failure or maintenance of the interconnection facilities occurring after the one-year warranty has expired. However, if the Contractor fails to meet the Guaranteed Net Annual Generation (MWH/YR) because of GPA's inability to dispatch all of the energy produced by the Contractor due to limits based on the power system demand, GPA will pay the lost revenue up to the Guaranteed Net Annual Generation (MWH/YR) if substantiated by the Contractor. GPA will try to maximize dispatching of the energy as much as possible.

QUESTION:

19. (Volume II, §1, 6th Bullet)
    Does the project need to be capable of providing Rapid Reserve 24/7 or only when there is sufficient generation or stored energy available? For example, if there is an under- frequency event at 5:59am and GPA has fully dispatched the ESS does the project need have reserve capacity available for a rapid reserve event? Is response to an over-frequency event also required?

ANSWER:

The ESS shall, at all times, be ready to dispatch its available stored energy to provide rapid reserve in response to under-frequency and over-frequency events. It is not required for the project to have reserve capacity available for a rapid reserve event.

QUESTION:

20. (Volume II, §1, 10th Bullet)
    Does GPA's requirement for an option to buy-out all or portions of equity apply during the development and construction periods or only after the project begins commercial operation? Can GPA provide more details about its expectation for a reduction in contract price at various levels of buyout? In particular

how does GPA intend to address ITC recapture risk as project level debt? For example, projects typically have significant amounts of long-term debt that is supported by the revenue from GPA based on the contracted rates; does GPA intend to refinance and/or pay off project level debt as part of a partial buy-out?

ANSWER:

The buy-out price is the price at which GPA may purchase 25%, 50%, 75%, or 100% of the capital portion of the project from Seller, the successful Bidder. If GPA purchases a portion or all of the capital portion of the project, then GPA expects that the price per kWh it pays for energy will be correspondingly reduced. The new price for kWh will be reduced as a result of the buy-out by GPA of a portion or all of the project's capital cost (debt). GPA will address the ITC recapture risk prior to the buy-out initiation.

QUESTION:

21. (Volume II, §2)
Does GPA have any requirement of AC or DC coupling between the, for example, solar generation and BESS or is the bidder to determine the best solution?

ANSWER:

For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. Therefore, 50% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid between the hours of 6:00 PM to 6:00 AM, or outside of these hours if deemed necessary by the GPA Power System Control Center operators.

QUESTION:

22. (Volume II, §2)
Does GPA have any sizing requirements or ratios between the generation capacity, BESS charging or discharging capacity, BESS storage capacity, or inverter capacity other than the limitation of no more than 80 MW(AC) export capacity at the interconnection point?

ANSWER:

Please refer to the bid document amendment in which the maximum export capacity is lowered from 80 MW (AC) to 60 MW (AC). Bidders shall design the project capacity to meet the bid requirements and their guaranteed net annual generation.

QUESTION:

23. (Volume II, §2.2.2.1.b, c, d, e, f)
Please confirm that these requirements are mandatory for the project overall and not specifically of the BESS (e.g., the AC-DC inverters/PCS connected to GPA's system are the project components that would provide real and reactive AC power as part of a renewable energy coupled with BESS project rather than the battery system itself).

ANSWER:

These requirements apply to the project's Energy Storage System, but these may also be required of the entire project if applicable.

QUESTION:

24. (Volume II, §2.4.2.2, Table 3)
Substation Hardware Specification – Please provide a list of breakers used by GPA.

ANSWER:

GPA uses Siemens SF6 outdoor breakers and Myers indoor breakers.

QUESTION:

25. (Volume II, §2.5.2)
Does GPA have future projected LEAC rates? If so, please provide these projections.

ANSWER:

No, GPA currently does not have any future projected LEAC rates. Please refer to the following link for the current LEAC rates: https://guampowerauthority.com/leac. GPA may or may not use the projected LEAC rates to determine the economic evaluation of the proposals.

QUESTION:

26. (Volume II, §2.5.2, §2.5.3)
Please confirm the maximum escalation rate. Section 2.5.2 states "Prices shall escalate at a fixed rate of 0.5% annually..." while Section 2.5.3 says "GPA will not accept bids with a year-over-year (YOY) escalation rates greater than 1.0% per year."

ANSWER:

Please refer to the updated page 113 of 263 in a recent amendment to this bid. GPA will allow a maximum of 1.0% annual escalation. However, Bidders are encouraged to submit proposals with less than 1.0% annual escalation.

QUESTION:

27. (Volume II, §3.6)
Environmental Permits and Impacts – The RFP states that bidders must put together a schedule for the completion of an ESA or an EIS but also states the bidders must provide an Environmental Assessment. Is this Environmental Assessment due upon delivery of the proposal? Is the Environmental Assessment only required of bidders that receive a reward?

ANSWER:

Bidders must provide a schedule for the formal ESA or EIS in their proposal. However, the proposal must also include a Site Environmental Assessment as described in section 3.6.2. This Site Environmental Assessment will be evaluated during the Technical Proposal Evaluation.

QUESTION:

28. (Volume II, §3.6)
Environmental Permits and Impacts – What level of environmental assessment is required for this submission?

ANSWER:

The Bidder's proposal should include all of the requested information described in section 3.6 and its subsections. The information provided will be evaluated during the Technical Proposal Evaluation.

QUESTION:

29. (Volume II, §3.6)
    Environmental Permits and Impacts - Are proposals submitted with an attached Environmental Assessment complete given more points under Step One: Qualitative Scoring?

ANSWER:

The Bidder's proposal should include all of the requested information described in section 3.6 and its subsections, including a Site Environmental Assessment as described in section 3.6.2. This Site Environmental Assessment will be evaluated during the Technical Proposal Evaluation. The quality of the Environmental Assessment provided will be reflected in the scoring.

QUESTION:

30. (Volume III, §4.5)
    In regard to "…GPA shall purchase and receive, or cause to be received, all Renewable Energy generated by the Facility…" and provided all contractual Front of the Meter energy is provided to GPA will GPA allow an additional Behind The Meter system to be built at a facility?

ANSWER:

Upon mutual agreement, GPA and the Contractor may negotiate for lower-priced energy from additional systems built at the facility. The Contractor shall not sell any of the energy produced to any other entity other than GPA.

QUESTION:

31. (General)
    Are the awards selected solely upon low bid or are there criteria that will be considered if they add value to the GPA infrastructure?

ANSWER:

Bidders may propose optional prices for additional scope not required specifically in the bid. Bids that add value to the GPA infrastructure may receive more points in the evaluation of the Technical Qualification Proposals. However, awards are selected solely on the lowest base bid.

QUESTION:

32. (General)
    What characteristics does GPA look for in a partner/contractor? Will these characteristics be used in the selection criteria?

ANSWER:

GPA desires a contractor and bid that meets all of the requirements identified in the bid document. Bids that meet these requirements will have a higher chance of proceeding to the Step Two Evaluation of the Priced Proposals. The evaluation factors that will be used for selection can be found in the Qualitative Evaluation Scoresheet in Table 2 of Volume IV.

QUESTION:

33. (General)
    Does GPA have an Approved Vendor List for equipment manufacturers? If so, please provide the list.

ANSWER:

GPA does not have an Approved Vendor List for equipment manufacturers. GPA evaluates the equipment specifications for compliance with GPA's requirements.

QUESTION:

34. (General)
Is there a minimum level of experience with utility scale construction (MW Built) required by GPA for this submission?

ANSWER:

Yes, Bidders shall demonstrate at least one year of experience with utility-scale construction. Bidders with more experience on utility-scale projects of similar technology and similar size may receive higher scores in the Technical Proposal Evaluation.

QUESTION:

35. (MS GPA-012-23 Amd III Final)
Is the due date for the Qualitative Proposal and the Price Proposal the same?

ANSWER:

Please refer to the updated Bid Milestones table in the most recent amendment to this bid. The Technical Qualification Proposal shall be submitted on or before the Cut-Off Date for Receipt of Technical Proposals (Unpriced). The Priced Proposal shall be submitted on or before the Cut-Off Date for Receipt of Priced Proposals.

QUESTION:

36. (MS GPA-012-23 Amd IV Final)
Regarding the answer to Question 2, when connecting to a 34.5kV line, when will GPA determine if the "limit may be 30 MW (AC) or lower depending on the line ampacity"?

ANSWER:

This will be determined after the completion of the System Integration Study.

<u>Bidder No.: 10 dated 02/07/2023:</u>

QUESTION:

1. Page 26 Section 2.10.3: State that GPA's evaluation of priced proposals shall compare the $ per MWh priced proposals to GPA's cost to produce the same energy from its existing non-renewable resources.

    - How much is the reference price of GPA's cost to produce the same energy from its existing non-renewable resources?

ANSWER:

GPA will not accept proposals above $0.179 per kWh, unless the value of the interconnection cost is deemed acceptable by GPA. However, this does not imply that GPA will not reject proposals lower than $0.179 per kWh.

QUESTION:

2. Page 108 Section 2.3.1 state that the minimum export capacity that a Bidder may offer is 5MW.

- We kindly request for minimum capacity be allowed to be lower than 5MW, to conform with allowed ITC threshold.

ANSWER:

GPA declines this request. A single project site shall have a minimum export capacity of 5 MW.

QUESTION:

3. Page 108 Section 2.4.1: State that bidder will deliver renewable energy to a GPA determined interconnection point on GPA's 115 KV or 34.5 kv transmission system.

    - We kindly request for GPA to allow 5MW and smaller capacity to connect at 13.8 kv transmission system.
    - We also kindly request for GPA to waive the 1% penalty factor for smaller capacity connecting to 13.8 kv to help make the project economically feasible.

ANSWER:

- GPA declines this request. A single project site shall have a minimum export capacity of 5 MW to the 34.5 kV or 115 kV GPA transmission system. However, a proposal may consist of one or more solar PV facility sites that may or may not be continuous.
- GPA declines this request.

QUESTION:

4. Page 103 Section 1, Bullet #6 Energy Storge System (ESS):

    - What is the minimum ESS capacity for shifting?
    - Does GPA want to shift 100% energy to the night peak hours?
    - Can shifting requirement be changed from 100% to 50% firm delivery?

ANSWER:

- A single project site shall shift a minimum export capacity of 5 MW.
- For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. Therefore, 50% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid between the nighttime hours of 6:00 PM to 6:00 AM, or outside of these hours if deemed necessary by the GPA Power System Control Center operators. The amount of power to be delivered to the GPA grid shall be based on the available stored energy and determined by the GPA Power System Control Center operators. The remaining 50% of the total project capacity will deliver ramp-rate controlled power to the GPA grid between the daylight hours of 6:00 AM to 6:00 PM.
- Please refer to the response above.

QUESTION:

5. Can we provide Unaudited Financial Statements that are certified by the Chief Financial Officer of the Company along with a Dun & Bradstreet (D&B) Credit Rating in lieu of Audited Financial Statements? The following inconsistencies in the Bid Documents on this subject are as follows:

    a. Page 20: 2.9.1.4 – Supplementary Information #4.: States Audited financial information for the last five years on Bidder's firm and all subcontractors that will be used in this contract. If they have one,

Bidders must include their Dun & Bradstreet Number or Other Major Credit Rating Agency rating, or comparable, independent verification of their credit standing.

- This states that information must be Audited, and it makes the credit rating optional because the wording, "If they have one."

b. Page 32 #3, Required Forms and Supplemental Information (Bullet #3): States Audited financial information on BIDDER's firm and all subcontractors that will be used in the performance management of GPA's Fuel Bulk Storage Facility. BIDDERS must include their Dun & Bradstreet Number or Other Major Credit Rating Agency rating.
   - This states that information must be Audited, and it makes the credit rating required because the wording, "BIDDER must include their Dunn & Bradstreet Number"

c. Page 115 3.2 Status of Project Financing #7: States to Provide copies of the most recent audited financial statement of each Bidder, its parent or subsidiary company to be used in this contract. Also, list the current credit rating from Standard & Poor's and Moody's for the sponsor, affiliates, partners, and credit support provider. Unaudited financials certified by the company's Chief Financial Officer and any Dun & Bradstreet rating are acceptable.
   - This states that information can either be Audited or it can be "Unaudited certified by the company's Chief Financial Officer and any Dun & Bradstreet rating"

d. Page 198 Technical Proposal Submittal Checklist, #6.3 Audited Financial Information on Bidder and Sub-Contractors
   - This is the checklist that indicates Audited but does not mention "Unaudited certified by the company's Chief Financial Officer and any Dun & Bradstreet rating"

e. Page 248 Part 1 – Qual Support References, #A1-g states to provide copies of the most recent audited financial statement or annual report for each Bidder, including affiliates of the Bidder. Also, list the current credit rating from Standard & Poor's and Moody's for the sponsor, affiliates, partners, and credit support provider.
   - This section references Audited financial statements, but the Credit Rating shows Standard & Poor's and Moody's rather than Dun & Bradstreet.
   - It does not mention "Unaudited certified by the company's Chief Financial Officer and any Dun & Bradstreet rating"

ANSWER:

Unaudited financials certified by the company's chief financial officer and any Dun & Bradstreet rating are acceptable.

QUESTION:

6. Is the price escalation limited to .5% or can they increase to up to but not exceed 1%? The following inconsistencies in the Bid Documents on this subject are as follows:

   a. Page 112, 2.5.1 Fixed Pricing for Guaranteed Energy: States Bidders are required to submit fixed pricing for the guaranteed renewable energy delivered for the first contract year. Prices shall escalate at a fixed rate of 0.5% annually for the entire contract period. GPA will apply a 1% penalty factor to the prices of bids interconnecting to the 34.5 kV system. Energy degradation shall be limited to 0.7% annually.
      - This references that the escalation rate shall be at a fixed rate of 0.5% per year but the following paragraph states different.

b. Page 113, 3.5.3 Energy Purchase Price Units: States The bidder shall provide a fixed price bid in $/MWH for the term of the proposed delivery of renewable energy for each ESS proposal options. The price bid shall include the capital and O&M components which shall be referred to should GPA exercise the capital buyout option. All columns in the bid price worksheet must be filled. GPA will not accept bids with year-overyear (YOY) escalation rates greater than 1.0% per year.
    - Does this mean that GPA will accept bids with escalation rates greater than 0.5% but less than 1.0% year-over-year?

ANSWER:

Please refer to the updated page 113 of 263 in a recent amendment to this bid. GPA will allow a maximum of 1.0% annual escalation. However, Bidders are encouraged to submit proposals with less than 1.0% annual escalation.

Bidder No.: 13 dated 05/22/2023:

Under Excel Tab 02 Feb 2023

QUESTION:

1. We, Bidder No.: 13, were recently registered as a prospective bidder for this bid on Feb. 01, 2023. Before then, could you share any other clarifications you already released to all bidders if any?

ANSWER:

Responses to this set of questions were provided in Amendment No.: VIII.

QUESTION:

2. (Volume II Technical, Section 1, Renewable Resource Technology, Page 1)
Does being grid-forming/black-start capable mean it is necessary to work in an off-grid environment?

ANSWER:

Responses to this set of questions were provided in Amendment No.: VIII.

QUESTION:

3. (Volume II Technical, Section 1, Dispatchable Active Power Capability, Page 1)
Is there any penalty to the Seller failing to comply with the 1% ramp rate control?

ANSWER:

Responses to this set of questions were provided in Amendment No.: VIII.

QUESTION:

4. (Volume II Technical, Section 1, Overview, Dispatchable Active Power Capability, Page 1)
We understand that daytime (6:00AM~6:00PM) output is mostly based on PV output and operated under the condition of "with a ramp-up and ramp-down rate limited to 1% of rated power output per minute". However, we attention to the clause "between the hours of 6:00 PM to 6:00 AM". Could you inform us how much AC output is required at this time?

ANSWER:

Responses to this set of questions were provided in Amendment No.: VIII.

QUESTION:

5. (Volume II Technical, Section 1, Overview, Interconnection, Page 2)
   Grid-connected substation ("S/S") inquiries
   Substations information required : Debedo S/S, Talofofo S/S, Apra S/S, Pulantat S/S
   1) Number of banks and bays in each substation
   2) Capacity that can be connected substation, if capacity by bank can be checked (if it is possible to connect more than 60 MWac considering the grid impact, transmission line capacity)
   3) Substation Tied Voltage

ANSWER:

Responses to this set of questions were provided in Amendment No.: VIII.

QUESTION:

6. (Volume II Technical, Section 1, Energy Storage System (ESS), Page 2)
   Is it necessary to provide rapid reserve during operation for ramp rate control?

ANSWER:

Responses to this set of questions were provided in Amendment No.: VIII.

QUESTION:

7. (Volume II Technical, Section 2.2, 2.1, Ride-through and Synchronization Capabilities, Page 4-5)
   Can GPA provide voltage and frequency ride-through setting data in graphical form? Also, is it necessary to maintain operation for 2 seconds when the voltage is zero?

ANSWER:

Responses to this set of questions were provided in Amendment No.: VIII.

QUESTION:

8. (Volume I Commercial, Tax Exemption)
   Does this bid have a tax exemption in terms of import custom duty, import VAT, etc. for all offshore equipment and materials? If only some items are exempt from tax, please inform us which items are eligible for it.

ANSWER:

Responses to this set of questions were provided in Amendment No.: VIII.

Under Excel Tab 29 Mar 2023

QUESTION:

9. (Volume II Technical, Section 1, Overview, Dispatchable Active Power Capability, Page 9 of 11 Amend VI)
   Please provide the technical specifications and operating conditions for each function.

   1) Is the energy dispatch process limited to Active Power during nighttime hours, specifically between 6 PM and 6 AM?
   2) State the minimum/maximum capacities for Power (MW) and Energy (MWh).
   3) Indicate the minimum and maximum continuous output duration periods (in minutes) at the rated power.

Specify the frequency of event occurrences within various time periods, such as yearly, monthly, or daily.
4) Define the minimum and maximum ramp rates (in MW per minute).

ANSWER:

Unfortunately, your inquiry cannot be entertained due to the cut-off date for receipt of questions not relating to Amendment No.: VII was due at 4:00 P.M., Tuesday, February 7, 2023.

QUESTION:

10. (Volume II Technical, Section 1, Overview, Interconnection, Page 2)
Grid-connected substation ("S/S") inquiries
Substations information required : Harmon S/S, Dededo S/S

1) Number of banks and bays in each substation
2) Capacity that can be connected substation, if capacity by bank can be checked (if it is possible to connect more than 60 MWac considering the grid impact, transmission line capacity)
3) Substation Tied Voltage

ANSWER:

Unfortunately, your inquiry cannot be entertained due to the cut-off date for receipt of questions not relating to Amendment No.: VII was due at 4:00 P.M., Tuesday, February 7, 2023.

QUESTION:

11. (Volume II Technical, Section 2.5.1, Fixed Pricing for Guaranteed Energy, Page 11)
The RFP shows that energy degradation should not exceed 0.7% per annually.

1) Please elucidate whether it is mandatory to comply with the stated 0.7% annual degradation limit, considering that the majority of Energy Storage System (ESS) batteries typically exhibit a degradation rate greater than 0.7% per year.
2) Should our proposed solution result in an annual degradation rate surpassing the 0.7% threshold, please provide detailed information on the technical ramifications and penalties we might encounter.

ANSWER:

Unfortunately, your inquiry cannot be entertained due to the cut-off date for receipt of questions not relating to Amendment No.: VII was due at 4:00 P.M., Tuesday, February 7, 2023.

QUESTION:

12. (Volume II Technical, Section 1, Technical Qualification Proposal Requirements, Item 2.5.3 Energy Purchase Price Units, Page 113b of 263)
GPA deleted last sentence, "GPA will not accept bids with year-over-year (YOY) escalation rates greater than 1.0% per year." in Amendment VI.
Does it mean that the bidder shall propose a fixed price bid in $/MWH only or the bidder can propose year-ower-year(YOY) escalation rates per year without any ceiling of eascalation rates freely?

ANSWER:

Unfortunately, your inquiry cannot be entertained due to the cut-off date for receipt of questions not relating to Amendment No.: VII was due at 4:00 P.M., Tuesday, February 7, 2023.

QUESTION:

13. (Volume II Technical, Ownership of transmission lines)
    Who shall have ownership of transmission lines from the project site to the GPA's substation/interconnection point after commercial operation date of the renewable energy project?

ANSWER:

Unfortunately, your inquiry cannot be entertained due to the cut-off date for receipt of questions not relating to Amendment No.: VII was due at 4:00 P.M., Tuesday, February 7, 2023.

QUESTION:

14. (Volume III, Article Two, Page 139 of 263)
    [Bid statement]
    Test Energy: Seller agrees to sell and Buyer agrees to purchase all Test Energy from the Facility. The price of such Test Energy shall be the current rate.
    [Question]
    What is the exact meaning of "the current rate" above?

ANSWER:

Unfortunately, your inquiry cannot be entertained due to the cut-off date for receipt of questions not relating to Amendment No.: VII was due at 4:00 P.M., Tuesday, February 7, 2023.

QUESTION:

15. (Volume I Commercial, Section 2.11.4, Disqualification of Bidder, Page 28 of 263)
    [Question]
    We will participate in this bid as a consortium with our parthers to submit bid documents for "Project A" which capacity is around 60MWac to 80MWac. On the other hand, one of our consortium member is preparing the other project ("Project B"), around 5MWac to 20MWac, for this bid but we do not participate in Project B as a consortium member. In this case, is there any possibility to be disqualified for both of us?

ANSWER:

Unfortunately, your inquiry cannot be entertained due to the cut-off date for receipt of questions not relating to Amendment No.: VII was due at 4:00 P.M., Tuesday, February 7, 2023.

QUESTION:

16. (Volume I Commercial, Section 4.4, Shipment, Delivery, and Acceptance of Goods, Page 40 of 263)
    [Bid statement]
    All materials shall confirm to federal and local codes and standards applicable to this type of work i.e. NEMA, ANSI, IEEE, ASTM etc. All necessary items and accessories not specified herein, but which are required to fully carryout the specified intent of the work, shall be furnished by the CONTRACTOR at no cost to the owner.
    [Question]
    Is UL certificate not mandatorily applicable for this Bid?

ANSWER:

Unfortunately, your inquiry cannot be entertained due to the cut-off date for receipt of questions not relating to Amendment No.: VII was due at 4:00 P.M., Tuesday, February 7, 2023.

Under Excel Tab 22 May 2023

QUESTION:

1. (Amendment No. VII, Section g, Control System Software, Page 3)
   This amendment requires all Phase IV Bidders integrate and use the PXiSE control systems as part of their proposal. GPA based this decision on:
   - Is PXiSE control system required solely for EMS or is it also necessary for SCADA, SA, and AGC?

ANSWER:

The PXiSE control system, or an equivalent or better control system, is required for the EMS only. GPA requires all Phase IV Bidders to integrate and use the PXiSE control system, or an equivalent or better control system, as part of their proposal. Please refer to the change below in "Section g. Control System Software".

Kindly refer to No. 4 of *CHANGES* above.

QUESTION:

2. (Amendment No. VII, Section 2, Energy and Capacity, Page 6)
   1. GPA will allow 60% of the resource to be DC-coupled to the energy storage system with the remaining 40% AC-coupled to the GPA grid.
      - Does the requirement for DC-Coupling refer to a physical connection between the PV Inverter and the PCS? Or does it imply that 60% of the resource should be charged and discharged through the ESS battery?
      - At what specific times should we dispatch Active Power at 60% of capacity and 40% of capacity respectively?
      Should all energy resources be dispatched between the hours of 6:00 PM and 6:00 AM, or should we dispatch 60% and 40% of capacity separately at specific times?

   2. Therefore, 60% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid.
      - Does the ramp-rate control requirement necessitate that the power delivery transition from 0 -> 60MW and 60MW -> 0 be maintained within 1% per minute? Or is it permissible to deliver the full 60MW immediately at the beginning and end of the energy production period?

ANSWER:

1. The percentage allocation of 50% to be DC-coupled and 50% to be AC-coupled is a physical connection. GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. For example, if the total project capacity is 100 MW, then 50 MW shall be DC-coupled to the energy storage system and 50 MW shall be AC-coupled to the GPA grid. Therefore, 50% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid between the nighttime hours of 6:00 PM to 6:00 AM, or outside of these hours if deemed necessary by the GPA Power System Control Center operators. The amount of power to be delivered to the GPA grid shall be based on the available stored energy and determined by the GPA Power System Control Center operators. The remaining 50% of the total project capacity will deliver ramp-rate controlled power to the GPA grid between the daylight hours of 6:00 AM to 6:00 PM.
2. The delivered output to the GPA grid shall be firm, nonintermittent power with a ramp-up and ramp-down rate limited to 1% of rated power output per minute. However, this rate may be exceeded at the request of the GPA Power System Control Center operators.

Bidder No.: 1 dated 05/19/2023:

QUESTION:

1. (Page 3 of 7)
   GPA has three battery energy storage systems incorporated into its power system at Hagatna, Talofofo, and KEPCO Mangilao Solar Power Plant. They all use inverter-battery controls from PXiSE Energy Solutions. GPA has partnered up with PXiSE on two grant proposals awaiting decision from the United States Government:

   • Integration of Autonomous Grid Controller to Support High Penetration of Renewable Energy on Guam's Electric Grid
   • System Wide nFLISR: An Autonomous and Dynamic Network-wide Fault Location, Isolation and Service Restoration System with Active Control

   Both grant projects would require integration with all BESS inverters for the purpose of centralizing control of all BESS to provide grid services to GPA's power system. This amendment requires all Phase IV Bidders integrate and use the PXiSE control systems as part of their proposal. GPA based this decision on:

   • Reduction of technical risk of integration with systems to be developed under the above grant projects
   • Reduction of risk due to Intellectual Property complexities that may result from separate control system vendors and PXiSE
   • Cybersecurity

   Question#1-1
   Considering geographic restrictions, tropical weather conditions, and insufficient technicians on Guam, use of proven and/or certified solution/product is one of the critical success factors for the project. If the Bidders select solution/ product just focusing on low cost, then it may take the Bidders and GPA in stake during the energy production period. This project is a long-term commitment by the Bidders. Thus, we don't have any objection to GPA's amendment to integrate and use the PXiSE control systems as it is a proven solution via GPA's previous ESS and Renewable projects.

   1) However, we would like to ask GPA's confirmation if the PXiSE Local Controller to the Bidders is capable of providing all functions as described in this IFB documents including amendments.

   2) Is it acceptable to use 3rd party's Local Controller to interface with the PXiSE Local Controller, in case the PXiSE Local Controller is not compatible with the proposed inverters or does not provide functions proposed by the Bidder?

   3) Beside the PXiSE Local Controller, is there any GPA recommended or preferred product from the previous projects such as PV module, PV Inverter, ESS PCS, and ESS Battery?

   4) Especially for PV Inverter, ESS PCS, and ESS Battery, we believe that the Bidders shall use UL certified products. PV Inverter shall comply with UL1741, UL62109-1, UL1741 SA/SB. ESS PCS shall comply with UL1741, UL1741 SA/SB. ESS Battery shall comply with UL 9540, UL 9540A. Should the Bidders submit those certifications for GPA's technical evaluation? If the Bidders fail to provide those certifications, then may the Bidders be disqualified for the technical evaluation?

Question#1-2
After the integration of the PXiSE Central Controller (AGC, Autonomous Grid Controller), AGC will send RAPID RESERVE signal to the PXiSE Local Controller and the Bidder's DER (Distributed Energy Resources) will respond accordingly. Please confirm if the Bidders are allowed to submit proposal assuming AGC is in place, which will not require additional cost for Frequency Watch Mode. We assume that Frequency Watch Mode will be the responsibility of the PXiSE Central Controller.

Question#1-3
PXiSE will provide a Central Controller to GPA and a Local Controller to the Bidders. Thus, PXiSE is the one who is able to provide clear DoR (Division of Responsibility) between the two controllers. Please request PXiSE to submit the DoR summary and share it to the Bidders. That will ensure PXiSE to provide required functions to the Bidders and GPA with a mutually exclusive and collectively exhaustive way.

Question#1-4
For the long-term use, on top of capex cost of S/W license and installation service fees, PXiSE normally requires LTSA (Long Term Service Agreement) with 2% annual increase. Is LTSA with PXiSE a mandatory requirement to be submitted to GPA after commissioning? Should it be maintained during the energy production period?

ANSWER:

Question#1-1

1. Based on GPA's current information, the PXiSE local controller is capable of providing all of the functions described in the bid documents. However, Bidders are responsible for confirming with PXiSE, or the vendor of an equivalent product, prior to submitting their proposals.
2. Third party local controller is acceptable provided that the total control response time from receiving a setpoint to full power output at the POI can be accomplished in less than 100 milliseconds continuously at a 10 Hz rate. So far PXiSE controller has been able to interface with many different inverters. Please provide device communications requirements on the inverters when submitting the proposal. However, please refer to the amendment to page 107 of the bid document in which the Bidders are allowed to integrate a control system that is equivalent or better than the PXiSE control system as part of their proposal.
3. GPA does not have preferred manufacturers for PV module, PV inverter, ESS PCS or ESS battery. Bids shall meet the requirements specified in the bid documents.
4. Bidders do not need to provide the UL certifications in their Technical Proposals. However, Bidders shall list the applicable certifications of the equipment proposed. After award of the contract, the manufacturer's data with all required certifications will need to be submitted to GPA for review and approval.

Question#1-2
The PXiSE Central Controller provides power setpoints to local controllers and responsible for primary frequency control at the system level and the PXiSE local controller provides both local real and reactive power control and secondary frequency control (Frequency Watch Mode) at the same time. If a 3rd party local controller is proposed, the local controller shall provide real and reactive power control and frequency watch at the same time.

Question#1-3

The high-level division of control responsibility between the Central and local controllers are listed in the response in Question#1-2, more detailed responsibility of the local controller is provided in the bid documents.

Question#1-4
It is the Bidder's responsibility to setup LTSA terms and maintain services to meet the delivery requirements during the energy production period

QUESTION:
2. (Page 4 of 7)
All GPA purchases of computer, network, communications, and industrial control systems shall comply with the Trade Agreements Act.

Question
Please provide complete set of equipment list, which shall comply with the TAA. Is there any equipment other than followings? PPC (Power Plant Controller), Network Switch, SCADA RTU,
Meters, and Relays.

ANSWER:
The following equipment must comply with the TAA:

- Power Plant Controller (PPC)
- Network Switch
- SCADA RTU
- Meters
- Relays
- Telecommunication Equipment
- SCADA Master Stations
- Distributed Control Systems
- Real-Time Automation Controllers (RTAC)
- Programmable Logic Controllers (PLC)
- Microgrid Controllers (may fall under PPC)
- Industrial Computers
- Routers
- Modems / RF equipment
- Firewalls
- Cybersecurity appliances (e.g., IDS/IPS platform)
- Physical protection systems for substations and other facilities
- Solar Photovoltaic Modules
- Inverters and/or Power Conversion Systems
- DC/DC Converters
- Battery Energy Storage Systems
- Power Plant Control Systems
- The following equipment apply if they have embedded controllers:
    - Transformers
    - Breakers

QUESTION:
3. (Page 6 of 7)

The renewable energy resource shall deliver an annual minimum energy (AC) as specified in the Bidder's Qualitative Proposal with a maximum export capacity of 60 MW (AC) at the interconnection point; this may be a combination of several generation units at one or more sites. However, the nameplate capacity that can be installed may be higher than 60 MW, subject to the maximum additional MW capacity that the GPA system can handle as determined by a System Integration Study.

Question #3-1
The renewable energy resource shall deliver an annual minimum energy (AC) … (AC) looks typo. It is supposed to be (MWH/YR).

Question #3-2
We understand that the maximum additional MW capacity will be determined by a System Integration Study, which will be completed within 120 days after the notification of successful bidders. However, it is very important for the Bidders to estimate the current maximum export capacity at the interconnection point. As such, please provide GPA's estimated maximum export capacity per GPA substation.

Question #3-3
1) Specifically, will GPA allow the Bidders have interconnections to the existing GPA substation at the Mangilao solar plant?
2) If yes, how much MW (AC) can be connected to the Mangilao substation? Isn't there any additional cost from the Mangilao substation to the Pagat substation?
3) How about interconnection to the Dandan substation?

Question #3-4
A maximum export capacity at the interconnection point has been changed from 80 MW (AC) to 60 MW (AC).
1) Will GPA accept a Bidder's proposal that is higher than 60 MW (AC), for example 80 MW (AC), at the interconnection point?
2) Up to 60 MW (AC), at one or more sites, will a Bidder's proposal be considered as one (1) bid for $150,000 bid bond?

ANSWER:

Question #3-1
The AC annotation is intended to clarify that the minimum energy delivered to the grid shall be measured at the AC interconnection point.

Question #3-2
Please refer to the table provided in the response to Question 35 of Amendment VIII, page 32 of 75.

Question #3-3
1. No, interconnection to the GPA Mangilao Substation will not be allowed.
2. N/A
3. Interconnection to the GPA Dandan Substation may be possible. Please refer to the table provided in the response to Question 35 of Amendment VIII, page 32 of 75 for the estimated interconnection capacity at the GPA Dandan Substation.

Question #3-4

1. The maximum export capacity may be limited by the ampacity of the transmission line from the substation to the point of interconnection, other interconnected generation facilities, or under-frequency load-shedding (UFLS) policy. For interconnections at the 34.5 kV level, the limit may be 30 MW (AC) or lower. The limit may be raised for interconnections at the 115 kV level if the transmission line has a higher ampacity, but no greater than 60 MW (AC). Bidders will not be allowed to negotiate with GPA to change the bid price for a bid with an export capacity greater than 60 MW (AC) at one project site. GPA will limit the export capacity to 60 MW (AC) regardless of the project's actual capacity.
2. Yes

QUESTION:

4. (Page 6 of 7)
   For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 60% of the resource to be DC-coupled to the energy storage system with the remaining 40% AC-coupled to the GPA grid. Therefore, 60% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid.

   Question #4-1.
   Please confirm GPA will allow the resource to be AC-coupled to the ESS. While DC-coupled method is providing less system loss, it may limit number of DC-DC connections between PV and ESS. Thus, the Bidders should select AC-coupled method when it requires relatively long periods of ESS dispatch. And more importantly, the DC-coupled method may restrict providing Black Start and Grid Firming functions, which are the mandatory requirements by GPA.

   Question #4-2.
   Regarding the 60%/40%, please confirm if it is referring to 60% production of the renewable energy resource and 40% production of the renewable energy resource. For instance, when we have 100MWh/yr production from the renewable energy resource, we should deliver 60MWh/yr to the ESS for energy-shifting and the remaining 40MWh/yr to the GPA grid with 1% ramp-rate control?

   Question #4-3.
   PV Module has approximately 0.5% yearly degradation and Battery has approximately 1.5% - 3% yearly degradation. Thus, 40% production delivery to the GPA grid during the daytime will increase approximately 1% (ESS degradation less PV degradation) per year as Battery energy capacity (MWh) will decrease accordingly. Regarding the revised 60%/40% requirement, please clarify if GPA would like to maintain 60%/40% during the energy production period, which requires periodic battery augmentation cost.

ANSWER:

Question #4-1.
GPA declines this request. GPA's Renewable Integration Study (aka "System Improvement Study") recommended that all new intermittent utility scale renewable energy projects be DC coupled to a BESS. Part of the reason is to reduce GPA SC MVA requirements.

Question #4-2.
GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. For example, if the total project capacity is 100 MW,

then 50 MW shall be DC-coupled to the energy storage system and 50 MW shall be AC-coupled to the GPA grid.

Question #4-3.
The percentage allocation of 50% to be DC-coupled and 50% to be AC-coupled is a physical connection and shall remain at all times.

QUESTION:

5. (Page 6 of 7)
The energy storage system shall also provide ramp-rate control for the power delivered from 40% of the total project capacity such that the ramp-rates are kept within 1% per minute at the guaranteed success rate of 95% during the energy production period. However, before or after a GPA curtailment, this rate may be exceeded at the request of the GPA Power System Control Center operators. GPA will not pay for the energy delivered to the GPA grid that did not meet the guaranteed success rate.

Question #5-1
Please provide calculation of 1% ramp-rates success rate. Will GPA allow 2% measurement error and yearly degradation of success rate, which were allowed for GPA Renewable Phase II projects?

Question #5-2.
How will GPA calculate unpayable delivered energy caused by the under-performance of the guaranteed success rate? Is this annually calculated? For example, Year1 Guaranteed Net Generation (MWh) x AC-coupled ratio to the GPA grid (40%) x (Year1 Guaranteed Success Rate - Year1 Calculated Success Rate) x Year1 Price ($/MWh)? Will GPA deduct year1 unpayable amount from 1st monthly invoice at year2?

Question #5-3.
In case of the over-performance of the guaranteed success rate, which will contribute GPA system's stability, will GPA provide compensation or credit it for the future under-performance?

ANSWER:

Question #5-1
The one-minute ramp rates will be calculated every second. Therefore, for a given day, there will be 86,400 calculated ramp rates. 82,080 (or 95%) of them will need to be within 1%. GPA will not allow a 2% measurement error and yearly degradation of success rate.

Question #5-2
The 50% AC-coupled output will have a separate meter from the 50% DC-coupled output. GPA will evaluate the success rate annually. For example, if the calculated success rate is 93%, then GPA will not pay for 2% (95%-93%) of the annual energy. This penalty may be deducted from one of the monthly invoices or the Contractor may issue a separate penalty payment check to GPA.

Question #5-3
No, GPA will not allow any credits for future under-performance penalties.

QUESTION:

6. (Page 7 of 7)

ENERGY STORAGE SYSTEM (ESS): The renewable energy resource shall be equipped with an energy storage system (ESS) that meets GPA's requirements as described in Section 2.2.2 Acceptable ESS Technologies. The ESS must provide the following primary functions:

• ENERGY-SHIFTING: The primary purpose of the ESS shall be for energy-shifting, which is to deliver the energy produced at another time or period of the day.

• RAPID RESERVE: The additional function of the ESS is to provide rapid reserve in response to under-frequency events. The total energy exported for these events shall be included in the annual minimum energy requirement.

• RAMP-RATE CONTROL: In this mode, the ESS will supply or absorb real power at the point of interconnection in an attempt to control the power output of the renewable energy resource which is AC-coupled to the GPA grid such that the ramp-rate is limited based on the ramp-rate setpoint. Sufficient SOC management control must be provided for optimal ramp-rate control. Manual and remote changes to the ESS ramp- rate setpoint shall also be allowed if needed.

Question #6-1.
For the 3 primary functions above, while GPA is providing compensation for ENERGY-SHIFTING and RAPID RESERVE, RAMP-RATE CONTROL is just regulation only. Is GPA willing to compensate the energy amount of suppling and absorbing real power at the point of interconnection for the RAMP-RATE CONTROL, which will use the Bidder's ESS asset to provide GPA grid stability?

Question #6-2.
If a Bidder's proposed ESS Technologies (PCS and Battery) lack proven track records and capabilities for the 3 primary functions above, then will a Bidder's proposal NOT accepted by GPA during the technical evaluation?

ANSWER:

Question #6-1.
GPA will not compensate the Contractor for the energy supplied and absorbed for ramp-rate control.

Question #6-2.
The Bidders' Technical Proposals will be evaluated and scored based on the Evaluation Factors listed in the Qualitative Evaluation Scoresheet. Only those with Unacceptable scores will not be accepted by GPA.

QUESTION:

7. (Page 7 of 7)
Bidders shall also provide the other grid services in the table below:

Grid Service	Description
Firm Power Dispatch	Provide Dispatchable Renewable Energy
Operating Reserve	Standby Generation Reserve
Fast Frequency Regulation	Rapid injection or absorption of power in response to changes in frequency to maintain system frequency within a tight bandwidth
Rapid Reserve	Respond to fast frequency decay due to trip of large generators on the GPA system by immediate injection of power to the grid to balance generation and demand and prevent underfrequncy load shedding.
Shaping and Firming	Smoothing out intermitency of the renewable resource.
Black Start	Capability to Black Start other Generators over the Transmission System
Grid Forming	Capability to form and supply Microgrids post-natural disaster (i.e., typhoons) or system blackouts.
Energy Shifting	Long Duration Energy Storage System Function
Volt/Var Optimization	Steady state and dynamic management and optimization of Power System Voltages

Question #7-1.
Firm Power Dispatch, Rapid Reserve, and Energy Sifting are the primary functions, which the Bidder shall provide during the energy production period. How about other grid services? Are these secondary (optional) functions for the future use? If not, please provide details of service rate and technical requirements.

1) Operating Reserve: If this is mandatory function to be provided during the energy production period, then the Bidders should reserve certain amount of energy capacity for 24x7, which will increase the Bidders' proposed price. How much % of the ESS capacity should be reserved for Operating Reserve if it is a mandatory function?

2) Fast Frequency Regulation: Bidder's ESS may be able to provide Fast FR (Frequency Regulation) service after dispatching and before the sun rise. However, it will cause fast decrease of ESS capacity and big increase of 24x7 operation cost accordingly. How will GPA compensate for this service?

3) Rapid Reserve: This is one of the primary functions. We assume that AGC will request the resource to provide Rapid Reserve service within the SOC (State of Charge) capacity at the moment of the AGC request. Please confirm if it is correct.

4) Shaping and Firming: This has the same purpose with the ramp-rate control. We assume that it is for the future use. Please confirm primary control function against intermittency of the renewable resource is the ramp-rate control. If GPA requires Shaping and Firming in the future, the Bidder's rate proposal may subject to change.

5) Black Start and Grid Forming: Please confirm if Black Start and Grid Forming are the mandatory services to be provided during the energy production period in case of a severe weather event or a power system blackout.

6) Volt/Var Optimization: Volt/Var Optimization or Volt/Var Support will cause less energy delivery. Is this optional service for the future use? If not, how will GPA compensate for this service?

Question #7-2.
Regardless of optional future use or mandatory primary use, should the Bidders perform commissioning test for all grid services in the table above?

ANSWER:

Question #7-1.

1. Operating Reserve is a secondary function for future use.
2. Fast Frequency Regulation is a secondary function for future use.
3. Rapid Reserve is a primary function.
4. Shaping and Firming is a secondary function for future use.
5. Black Start and Grid Forming are mandatory services.
6. Volt/Var Optimization is a secondary function for future use.

Awarded proposals must provide GPA multi-objective control of the BESS units so that Guam has total utilization of all BESS units. That means GPA can dictate how the BESS will be dispatched or operated for the benefit of the Guam Power System.

Question #7-2.
Bidders shall perform commissioning tests for all primary functions as well as the grid services indicated in the table.

<u>Bidder No.: 6 dated 06/05/2023:</u>

QUESTION:

1. (Page 3 of 7)
   This amendment requires all Phase IV Bidders integrate and use the PXiSE control systems as part of their proposal.

   Question:
   Please confirm PXiSE control systems comply with all IFB requirements including federal and local codes and standards.

ANSWER:

Based on GPA's current information, the PXiSE local controller is capable of providing all of the functions described in the bid documents. However, Bidders are responsible for confirming with PXiSE, or the vendor of an equivalent or better product, prior to submitting their proposals.

QUESTION:

2. (Page 3 of 7)
   This amendment requires all Phase IV Bidders integrate and use the PXiSE control systems as part of their proposal.

   Question:
   If GPA has additional preferred product such as inverter and battery from the previous projects, please let us know.

ANSWER:

GPA does not have preferred manufacturers for PV module, PV inverter, ESS PCS or ESS battery. Bids shall meet the requirements specified in the bid documents.

QUESTION:

3. (Page 3 of 7)
   This amendment requires all Phase IV Bidders integrate and use the PXiSE control systems as part of their proposal.

   Question:
   It is a requirement for the inverter and battery be UL compliant? Alternatively, are IEC compliant products acceptable? Also should the Bidders submit UL/IEC certifications in their technical proposal, Otherwise, disqualified for the technical evaluation?

ANSWER:

The inverters and batteries shall be UL compliant. Bidders do not need to provide the UL certifications in their Technical Proposals. IEC compliant products are acceptable if they are also UL compliant. However, Bidders shall list the applicable certifications of the equipment proposed. After award of the contract, the manufacturer's data with all required certifications will need to be submitted to GPA for review and approval.

QUESTION:

4. (Page 6 of 7)
   • ENERGY AND CAPACITY: The renewable energy resource shall deliver an annual minimum energy (AC) as specified in the Bidder's Qualitative Proposal with a maximum export capacity of 60 MW (AC) at the interconnection point; this may be a combination of several generation units at one or more sites. However, the nameplate capacity that can be installed may be higher than 60 MW, subject to the maximum additional MW capacity that the GPA system can handle as determined by a System Integration Study. The System Integration Study will be completed within 120 days after evaluation of the Price Proposal(s) and initial notification of the most qualified Bidders.

   Question:
   Unit of Annual Minimum Energy should be "MWh/yr".

ANSWER:

The unit of annual minimum energy is MWh/yr. The AC annotation is intended to clarify that the minimum energy delivered to the grid shall be measured at the AC interconnection point.

QUESTION:

5. (Page 6 of 7, Energy and Capacity)
   • ENERGY AND CAPACITY: The renewable energy resource shall deliver an annual minimum energy (AC) as specified in the Bidder's Qualitative Proposal with a maximum export capacity of 60 MW (AC) at the interconnection point; this may be a combination of several generation units at one or more sites. However, the nameplate capacity that can be installed may be higher than 60 MW, subject to the maximum additional MW capacity that the GPA system can handle as determined by a System Integration Study. The System Integration Study will be completed within 120 days after evaluation of the Price Proposal(s) and initial notification of the most qualified Bidders.

   Question:
   "the Bidder's Qualitative Proposal with a maximum export capacity of 60 MW (AC) at the interconnection point" is meaning that the Bidder's proposal should not be higher than 60 MW (AC) at one (1) interconnection point. Please confirm.

ANSWER:

For interconnections at the 34.5 kV level, the limit may be 30 MW (AC) or lower depending on the line ampacity, other interconnected generation facilities, or under-frequency load-shedding (UFLS) policy. The limit may be raised for interconnections at the 115 kV level if the transmission line has a higher ampacity, but no greater than 60 MW (AC) at one project site.

QUESTION:

6. (Page 6 of 7, Energy and Capacity)

• ENERGY AND CAPACITY: The renewable energy resource shall deliver an annual minimum energy (AC) as specified in the Bidder's Qualitative Proposal with a maximum export capacity of 60 MW (AC) at the interconnection point; this may be a combination of several generation units at one or more sites. However, the nameplate capacity that can be installed may be higher than 60 MW, subject to the maximum additional MW capacity that the GPA system can handle as determined by a System Integration Study. The System Integration Study will be completed within 120 days after evaluation of the Price Proposal(s) and initial notification of the most qualified Bidders.

Question:

"the maximum additional MW capacity that the GPA system can handle as determined by a System Integration Study" please confirm that the most qualified Bidders may have a chance to increase the maximum MW capacity higher than 60 MW (AC) at one (1) interconnection point after the System Integration Study.

ANSWER:

The statement in question should read: "However, the nameplate capacity that can be installed may be lower than 60 MW at 115 kV, subject to the maximum additional MW capacity that the GPA system can handle as determined by a System Integration Study." Please refer to Amendment VIII for the amendment to page 102 of 263 of the bid document correcting this error. The limit for interconnections at the 115 kV level is 60 MW (AC). Bidders will not be allowed to negotiate with GPA to change the bid price for a bid with an export capacity greater than 60 MW (AC) at one project site.

QUESTION:

7. (Page 6 of 7)

For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 60% of the resource to be DC-coupled to the energy storage system with the remaining 40% AC-coupled to the GPA grid. Therefore, 60% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid.

Question:

This is meaning that "GPA will allow 60% of ENERGY PRODUCION of the resource to be DELIVERED to the energy storage system with the remaining 40% of ENERGY PRODUCTION of the resource to be DELIVERED to the GPA grid." For example, if the Bidder's resource produce 10GWh at year1, then 6GWh to the ESS and the remaining 4GWh to the GPA grid. Please confirm.

ANSWER:

The percentage allocation of 50% to be DC-coupled and 50% to be AC-coupled is a physical connection and does not refer to the energy production. GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. For

example, if the total project capacity is 100 MW, then 50 MW shall be DC-coupled to the energy storage system and 50 MW shall be AC-coupled to the GPA grid.

QUESTION:

8. (Page 6 of 7)
   For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 60% of the resource to be DC-coupled to the energy storage system with the remaining 40% AC-coupled to the GPA grid. Therefore, 60% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid.

   Question:
   Due to the nature of ESS battery degradation, without battery augmentation, the remaining 40% production to be delivered to the GPA grid will be increased gradually during the energy production period. Is there a limit on the % of yearly increase from GPA?

ANSWER:

Please refer to the response to Question #7.

QUESTION:

9. (Page 6 of 7)
   The energy storage system shall also provide ramp-rate control for the power delivered from 40% of the total project capacity such that the ramp-rates are kept within 1% per minute at the guaranteed success rate of 95% during the energy production period. However, before or after a GPA curtailment, this rate may be exceeded at the request of the GPA Power System Control Center operators. GPA will not pay for the energy delivered to the GPA grid that did not meet the guaranteed success rate.

   Question:
   Please provide calculation of this success rate. For the previous Phase II projects, GPA allowed 2% measurement error and degradation of success rate. Please let us know allowable measurement error and yearly degradation of the success rate.

ANSWER:

The one-minute ramp rates will be calculated every second. Therefore, for a given day, there will be 86,400 calculated ramp rates. 82,080 (or 95%) of them will need to be within 1%. GPA will not allow a 2% measurement error and yearly degradation of success rate.

QUESTION:

10. (Page 6 of 7)
    The energy storage system shall also provide ramp-rate control for the power delivered from 40% of the total project capacity such that the ramp-rates are kept within 1% per minute at the guaranteed success rate of 95% during the energy production period. However, before or after a GPA curtailment, this rate may be exceeded at the request of the GPA Power System Control Center operators. GPA will not pay for the energy delivered to the GPA grid that did not meet the guaranteed success rate.

    Question:
    Regarding the UNPAYABLE ENERGY DELIVERY, please provide GPA's calculation

ANSWER:

The 50% AC-coupled output will have a separate meter from the 50% DC-coupled output. GPA will evaluate the success rate annually. For example, if the calculated success rate is 93%, then GPA will not pay for 2% (95%-93%) of the annual energy. This penalty may be deducted from one of the monthly invoices or the Contractor may issue a separate penalty payment check to GPA.

QUESTION:

11. (Page 6 of 7)

The energy storage system shall also provide ramp-rate control for the power delivered from 40% of the total project capacity such that the ramp-rates are kept within 1% per minute at the guaranteed success rate of 95% during the energy production period. However, before or after a GPA curtailment, this rate may be exceeded at the request of the GPA Power System Control Center operators. GPA will not pay for the energy delivered to the GPA grid that did not meet the guaranteed success rate.

Question:

Is GPA willing to provide benefits for the energy delivered to the GPA grid that provide more than the guaranteed success rate?

ANSWER:

No, GPA will not allow any credits for future under-performance penalties.

QUESTION:

12. (Page 7 of 7)

ENERGY STORAGE SYSTEM (ESS): The renewable energy resource shall be equipped with an energy storage system (ESS) that meets GPA's requirements as described in Section 2.2.2 Acceptable ESS Technologies. The ESS must provide the following primary functions:

• ENERGY-SHIFTING: The primary purpose of the ESS shall be for energy-shifting, which is to deliver the energy produced at another time or period of the day.

• RAPID RESERVE: The additional function of the ESS is to provide rapid reserve in response to under-frequency events. The total energy exported for these events shall be included in the annual minimum energy requirement.

• RAMP-RATE CONTROL: In this mode, the ESS will supply or absorb real power at the point of interconnection in an attempt to control the power output of the renewable energy resource which is AC-coupled to the GPA grid such that the ramp-rate is limited based on the ramp-rate setpoint. Sufficient SOC management control must be provided for optimal ramp-rate control. Manual and remote changes to the ESS ramp- rate setpoint shall also be allowed if needed.

Question:

Regarding Acceptable ESS Technologies, how will GPA evaluate if the Bidder's proposed ESS Technologies are acceptable or NOT acceptable? Should the Bidders provide major equipment (i.e. PCS and Battery) track records for the all primary functions - ENERGY-SHIFTING, RAPID RESERVE, and RAMP-RATE CONTROL?

ANSWER:

The Bidders' Technical Proposals will be evaluated and scored based on the Evaluation Factors listed in the Qualitative Evaluation Scoresheet. Only those with Unacceptable scores will not be

accepted by GPA. Bidders may receive higher scores if the track records for the major equipment are provided.

Bidder No.: 7 dated 05/30/2023:

QUESTION:

1. INCLUSION #3 (§2.2.6 Compliance with Trade Agreements Act)

   1.1. Since GPA is purchasing a service and not "computer, network, communications, [or] industrial control systems" does this requirement apply to the supply of renewable energy under the Renewable Energy Purchase Agreement contemplated in this IFB as it does not appear that supply of renewable energy is listed in Section 1.3 of GPA's Policy Directive on System & Service Acquisition?

   1.2. If so, which equipment within a Phase IV Bidders project must comply with TAA? Please specifically respond regrading each of the following components:
   - Solar Photovoltaic Modules
   - Inverters and/or Power Conversion Systems
   - DC/DC Converters
   - Battery Energy Storage Systems
   - Power Plant Control Systems
   - Transformers
   - Breakers

   1.3. Is compliance with the GPA Policy Directive on System & Service Acquisition, including compliance with TAA, limited only to Remote Terminal Units owned or other devices by the Phase IV Bidder that directly communicate with any GPA owned systems listed in Section 1.3 of the Policy Directive on System & Service Acquisition?

ANSWER:

a. Yes, it does apply. Cybersecurity compromises to proponent's systems has the risk for bringing down GPA's grid. Thus, compliance with GPA's cybersecurity procurement policies apply. For example, cloud services have similar vulnerabilities and are definitely construed to be within the policy.

b. The following equipment must comply with the TAA:
   - Power Plant Controller (PPC)
   - Network Switch
   - SCADA RTU
   - Meters
   - Relays
   - Telecommunication Equipment
   - SCADA Master Stations
   - Distributed Control Systems
   - Real-Time Automation Controllers (RTAC)
   - Programmable Logic Controllers (PLC)
   - Microgrid Controllers (may fall under PPC)
   - Industrial Computers

- Routers
- Modems / RF equipment
- Firewalls
- Cybersecurity appliances (e.g., IDS/IPS platform)
- Physical protection systems for substations and other facilities
- Solar Photovoltaic Modules
- Inverters and/or Power Conversion Systems
- DC/DC Converters
- Battery Energy Storage Systems
- Power Plant Control Systems
- The following equipment apply if they have embedded controllers:
  - Transformers
  - Breakers

c. No, all purchases of computer, network, software, communications, and industrial control systems shall comply with the Trade Agreements Act. In general, any services, equipment or systems, if compromised can affect the stability, resiliency and security of the grid.

QUESTION:

2. CHANGE #2 (Volume II: Technical Qualification Proposal Requirements, Item 1. Overview ENERGY AND CAPACITY)

2.1. Does the revision of this section create a new requirement that all projects must have a mix of DC and AC coupling? If so, please confirm that the requirement is that 40% of a resource must be AC-coupled to the GPA grid and 60% of a resource must be DC-coupled with an energy storage system. If this is not correct, please provide clarification of the exact requirements or limitations.

2.2. Please clarify the sentence: "For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 60% of the resource to be DCcoupled to the energy storage system with the remaining 40% AC-coupled to the GPA gird."

- Does GPA require any specific coupling approach? Can 100% of a solar resource be DC-Coupled to the storage system? Can a solar resource and the associated storage system both share a common AC bus that is then interconnected to the GPA system if the project's control system operates the project such that the storage system does not import or export power during the day (i.e. the storage system stores 100% of the energy generated by a solar project that it is Accoupled to during the day)?
- What is "the resource"? Is it, for example, the solar modules/panels themselves?
- How is the % of a resource to be measured? Is it in total production (e.g. MWh)?

2.3. Please also clarify the following sentence "Therefore, 60% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid."

- Does this mean that 40% of the total project capacity can deliver directly to the GPA grid without the requirement to store daytime energy for later evening dispatch so long as the ramp rate is managed to 1% per minute?
- What unit is "total project capacity" as used here measured in and where is it measured?

2.4. Would a project that has 100 MWP total of solar modules with i) 50 MWP DC-coupled to energy storage systems that are then connected to the GPA grid with inverters with a combined maximum

capacity of 36 MWAC and ii) the remaining 50 MWP of solar modules connected directly to inverters that are then connected to the GPA grid with a combined inverter capacity of 24 MWAC comply with the requirements of this revised section (provided the ramp rate requirements are met)?

ANSWER:

a. The percentage allocation of 50% to be DC-coupled and 50% to be AC-coupled is a physical connection and does not refer to the energy production. GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. For example, if the total project capacity is 100 MW, then 50 MW shall be DC-coupled to the energy storage system and 50 MW shall be AC-coupled to the GPA grid.

b. Please refer to the response to Question 2.1. The "resource" refers to the solar modules/panels for proposals of this type. The solar resource and the associated storage system shall not share a common AC bus that is then interconnected to the GPA system.

c. Yes, 50% of the total project capacity can deliver directly to the GPA grid without the requirement to store daytime energy for later evening dispatch so long as the ramp rate is managed to 1% per minute. The total project capacity is in MW.

d. Yes.

QUESTION:

3. CHANGE #3 (Volume II: Technical Qualification Proposal Requirements, Item ENERGY STORAGE SYSTEM (ESS))

3.1. Does the newly required "Ramp-Rate Control" only apply to controlling the ramp rate of the associated renewable energy resource (e.g. in the case solar that is AC-coupled to the GPA grid and is delivered directly as generated) or will it be used to control the ramp-rate of the GPA system generally and/or projects elsewhere on GPA's system. If it is used for other projects how many additional cycles per year will GPA require from the project's energy storage system?

3.2. For the added additional grid services, how many energy storage system cycles per year will each service require? Will GPA accept usage limitations (e.g. number of cycles per year, frequency of usage of each service)?

3.3. Does GPA require Phase IV Bidders to include the cost of providing these services in their bid? For each service, how shall bidders present pricing?

3.4. Please clarify that GPA understands that some of these newly requested services can significantly increase the cycle requirements of an energy storage system beyond the 365 cycles per year case that would typically be required for the energy-shifting and rapid reserve services that were originally requested by GPA prior to this Amendment No. VII and that, absent additional clarification from GPA on the number of additional cycles required and other details about each service, GPA may receive significantly varied proposals from Phase IV Bidders that may be difficult for GPA to compare.

ANSWER:

a. The ramp-rate control will not be used to control the GPA system in general and/or projects elsewhere on the GPA system. The ramp-rate control applies to 50% of the total project capacity AC-coupled to the GPA grid. The ramp-rate control also applies to the ramp-up and ramp-down of 50% of the total project capacity DC-coupled to the energy storage system delivering firm, energy-shifted power to the GPA grid. However, this rate may be exceeded at the request of the GPA Power System Control Center operators.

b. The number of cycles per year for the Rapid Reserve function is 75. The number of cycles for the remaining grid services, if applicable, shall be negotiated at a later date after award of the contract. GPA and the Contractor will discuss the relevancy of this request in further detail if needed.

c. No, pricing for the additional secondary grid services will be negotiated after award of the contract.

d. Please refer to the responses for Questions 3.2 and 3.3.

<u>Bidder No.: 5 dated 05/30/2023:</u>

QUESTION:

1. (Amendment No. VII, Page 2, Inclusions: 1)
   Please confirm that Notification of Successful Bidder(s) has same definition of Notice of Award. If not, Please clarify that GPA will issue Notice of Award to Successful Bidder(s)

ANSWER:

This question is not relative to the changes made in Inclusion #1. The changes made to the Notification of Successful Bidder(s) only involve the dates.

QUESTION:

2. (Amendment No. VII, Page 3, Inclusions: 2)
   The bidder basically agrees with the GPA's request and purpose of utilizing the PXiSE control system in the project plant, however, please confirm or clarity for the following topics;

   a. Please confirm whether the utilization of the PXiSE control system is a mandatory requirement from GPA or can be a bidder's option by GPA suggestion.
   b. Please inform the role and responsibility between the bidder and the GPA (or PXiSE) in terms of performance or operation guarantees including response time, success rate, and capacities of the ESS if the application of the PXiSE control system is mandatory.

ANSWER:

a. Please refer to the amendment to page 107 of the bid document in which the Bidders are allowed to integrate a control system that is equivalent or better than the PXiSE control system as part of their proposal. GPA will have the final determination if the proposed control system meets the equivalent or better criteria.
b. The Contractor will ultimately be responsible for all performance or operation guarantees.

QUESTION:

3. (Amendment No. VII, Page 4, Inclusions: 3, Policy Directive on System & Service Acquisition)

Per “In Force Procurement Policy (CRS-0156): All GPA purchases of computer, network communications, and industrial control systems must adhere to the TAA (Trade Agreements Act) and comply with the GPA Policy Directive on System & Service Acquisition in Appendix P.”

Bidder’s understanding is that GPA only purchases renewable energy from the Bidder through a PPA. Please confirm if Bidder still have to adhere to the TAA (Trade Agreements Act) and comply with the GPA Policy Directive on System & Service Acquisition in Appendix P.

If yes, please confirm if “All GPA purchases of computer, network, communications, and industrial control systems” in page 4 of Amendment 7 means equipment which will be handed over to GPA and equipment directly interacts with GPA’s network operation/control system.

ANSWER:

GPA’s cybersecurity policy shall also apply to the PPA’s equipment. For example, GPA’s cybersecurity procurement policy applies to cloud services which do not include the transfer of equipment to GPA. Although the PPA is a service to provide renewable energy, the compromise of the PPA’s systems can lead to catastrophic effects to GPA’s power system and customers, such as the Department of Defense.

QUESTION:

4. (Amendment No. VII, Page 4, Inclusions: 3, Policy Directive on System & Service Acquisition)
Bidder understands that Policy Directive on System & Service Acquisition is directed at GPA personnel and SDLC will be performed by GPA. Also, Bidder understands that Bidder is obliged to comply the Cyber Security Manual for the system that is interfaced with GPA. Please confirm.

   If yes, please provide a manual for cyber security requirements to consider when designing the system for the GPA interface.

ANSWER:

After award of the contract, GPA will provide additional details to guide the Contractor with the submittal of the Contractor’s facility cybersecurity plan for GPA’s review and approval.

QUESTION:

5. (Amendment No. VII, Page 4, Inclusions: 3, Trade Agreement Act)
With regard to the compliance with TAA, the Federal Acquisition Regulation (FAR) sets out TAA Designated Country List and OFAC provides Sanctions List Search.

   Does Bidder have to adhere to both TAA Designated Country List and Sanctions List?

   Also, please confirm if GPA requires confirmation letter from vendors on an official form.

   If yes, please provide such confirmation letter form for both vendors which qualifies for TAA Designated Country List(FAR) and Sanctions List (OFAC) and those fall under “non-TAA or proscribed countries” category as in page 4.

ANSWER:

Yes, the Bidder shall adhere to both TAA Designated Country List and Sanctions List. A statement included in the proposal from the Bidder that no exceptions to the bid specifications are taken will serve as the confirmation letter.

QUESTION:

6. (Amendment No. VII, Pages 5 and 13, Changes: 1)
   Bidders is required to submit Technical and Priced Proposal by the "Cut-off Date for Receipt of each Proposals".

   (Question) By which Cut-off Date Bidders shall submit bid Bond?

ANSWER:

The bid guarantee shall be submitted with the Technical proposals by the cut-off date stated on the latest bid milestone.

QUESTION:

7. (Amendment No. VII, Page 6, Changes: 2)
   GPA will allow 60% of the resource to be DC-coupled to the energy storage system with the remaining 40% AC-coupled to the GPA grid. Therefore, 60% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid.

   (Question) Total project capacity means the name plate capacity?

ANSWER:

The total project capacity is the inverter capacity (AC).

QUESTION:

8. (Amendment No. VII, Page 6, Changes: 3)
   In response to clarification related to grid-forming and black-start capability of BESS,

   Capacity
   GPA confirmed the minimum capacity of 5MW/60MWh (12 hours). Please confirm whether this capacity should be supplied by the bidder as a mandatory in the bid phase or can be supplied as an option. Please confirm that this capacity should be guaranteed based on EOL(End-of-Life) for the entire project period(e.g. 20 years after COD), or should be guaranteed based on BOL(Beginning-of-Life), the beginning of project period(e.g. COD) with taking the decrease of capacity through the project period due to the degradation of battery.

   Frequency of event
   Since the exact frequency of events could not be confirmed, the bidder would like to request a clarification again. In the BESS market, the BESS suppliers guarantee capacity and lifetime depending on the frequency of operation of the BESS considering the degradation trend of battery. Please kindly confirm that the frequency of events can be reflected up to twice a year based on to the historical lists GPA's system blackouts since 2009 in the GPA's answer.

ANSWER:

Capacity
The capacity shall be guaranteed based on the beginning of the Commercial Operation Date (COD).

Frequency of event
Bidders shall include up to four events per year for the facility to form isolated microgrids.

QUESTION:

9. (Amendment No. VII, Page 6, Changes: 3)
   Regarding grid services (Firm Power Dispatch, Operating Reserve, Fast Frequency Regulation, Rapid Reserve, Shaping and Firming, Black Start, Grid Forming, Energy Shifting, Volt/Var Optimization) of the ESS, please confirm that the bidder should include additional ESS capacities dedicated for the each grid service respectively, or that the bidder only need to ensure grid service capability without specifying ESS capacities additionally.

   Please specify technical specifications and operating conditions for each of grid services (Firm Power Dispatch, Operating Reserve, Fast Frequency Regulation, Rapid Reserve, Shaping and Firming, Black Start, Grid Forming, Energy Shifting, Volt/Var Optimization) including the information below.
   a. Minimum capacities of Power and Energy
   b. Minimum/Maximum continuous output duration period(minutes) at the rated power
   c. Event occurrence frequency by a certain period such as year, month, daily, etc.
   d. Minimum/Maximum ramp rate
   e. Interval time(sec.) on receiving control command from GPA systems such as PSCC SCADA or AGC system

ANSWER:

The details and specifications for the secondary grid services shall be negotiated at a later date after award of the contract.

QUESTION:

10. (Amendment No. VII, Page 13, Appendix B – Bid Bond Form and Instructions)
    GPA to advise if the following international banks are acceptable for issuing Bid Bond; or what banks are deemed acceptable to GPA?
    -Mizuho Bank
    -SMBC
    -Credit Agricole
    -Standard Chartered
    -Societe Generale
    -BNP Paribas
    -ANZ

ANSWER:

This question is not relative to the changes made on Page 13 of Amendment VII. The changes made on the Document Receipt Checklist only involve the insertion of Appendix P on the list.

QUESTION:

11. (Amendment No. VII, Page 13, Appendix B – Bid Bond Form and Instructions)
    Please clarify the expiry date of Bid Bond, and is it possible to write down the duration on the bid bond form? (e.g. bid date + 1 year)

ANSWER:

This question is not relative to the changes made on Page 13 of Amendment VII. The changes made on the Document Receipt Checklist only involve the insertion of Appendix P on the list.

Bidder No.: 1 dated 06/12/2023:

QUESTION:

1. (Amendment VIII, Page 1 of 64)
   * The minimum export capacity that a Bidder may office is 5 MW, and the maximum export capacity shall be 60 MW for each project. This may be the combination of several generation units at one site.

   Clarification #1
   Under the IRA, projects will be able to choose between Incentive Tax Credit (ITC) or Production Tax Credit (PTC). Both credits come with potential 10% additional tax credit for 1) meeting certain domestic content requirements, 2) locating in energy communities, or 3) allocating credits for being on qualified low-income property. According to the following IRS Guidance, the island of Guam may be qualified as a low-income property if the project has an interconnection net output of LESS than 5MWac.

   As we have experienced in the restoration of Typhoon Mawar, multiple DERs (Distributed Energy Resources) with various voltage levels (115kV, 34.5kV, and 13.8kV) may have more benefits to grid reliability. Also, considering limited land in Guam including GPA substations, less than 5MWac DERs will not require large land parcels and may not require expansion of existing substations. So, we would strongly like to recommend the allowance of less than 5MWac projects to ensure that GPAs RPS target is met.

   To reiterate, we would like to suggest GPA to allow minimum export capacity that a Bidder may offer LESS than 5MWac, for example a minimum of 4MWac to take advantage of the additional federal tax credits. Compared to large scale MWac projects, smaller projects that are less than 5MWac may not be able to take advantage of bulk order prices from the manufacturers. However, the 10% ITC additional tax credits should be able to offset the loss of bulk order prices with a competitive price offer to GPA.

ANSWER:

This question is not relative to the changes made in Changes #1 of Amendment VIII. The changes only involve the maximum export capacity and not the minimum export capacity.

QUESTION:

2. (Amendment VIII, Page 16 of 64)
   ANSWER:
   1) GPA personnel will perform regular inspections on work for the substation and transmission. For off-island Factory Acceptance Testing (FAT), GPA requires testing for transformers, switchgears, breakers, and SCADA.

   Clarification #2
   Please confirm SCADA is referring to GE G500 RTU. For the RTU, should the Bidders perform FAT?

ANSWER:

Please refer to the SCADA requirements in the newly added Appendix Q in a recent amendment to this bid.

Bidders are required to perform FAT for the RTU. The GE G500 RTU can be tested with the switchgear FAT. The RTU can be at the switchgear plant to perform the SCADA test. For example,

if the breakers are open or closed, it should show the status change on the RTU. Also, when they inject voltage or current into the relays and meters, those values should show on the RTU.

Kindly refer to No. 2 & 3 of *INCLUSIONS* above.

QUESTION:

3. (Amendment VIII, Page 14 of 64)
   ANSWER:
   1) Yes, unaudited financials certified by the company's chief financial officer and any Dun & Bradstreet rating are acceptable.

   Clarification #3
   New DUNS number has been phased out and is now a Unique Entity Identification Number. Please accept a Unique Entity Identification Number.

ANSWER:

GPA declines this request. The Unique Entity Identification Number is used for doing business with the federal government, however GPA is not clear on how this is associated with any credit rating.

QUESTION:

4. (Amendment VIII, Page 23 of 64)
   ANSWER:
   At a minimum, Bidders shall provide information from relays, meters, breakers, RTUs, BESS, PMS and PCS. The complete list shall be coordinated during design and construction. The Contractor shall provide 10% spare points in addition to the final SCADA Interface List.

   Clarification #4
   Cost of PPC (Power Plant Controller) is normally determined by the number of control points. Regarding the 10% spare points in addition to the final SCADA Interface List, is GPA requiring the Bidders to secure additional 10% contingency cost for PXiSE?

ANSWER:

No, the requirement to provide 10% spare points in addition to the final SCADA Interface List is not specifically for the benefit of the PXiSE control system.

QUESTION:

5. (Amendment VIII, Page 25 of 64)
   ANSWER:
   4) If the System Integration Study allows two projects to share a transmission line, GPA may consider negotiating an interconnection cost-sharing agreement between the two Bidders. The criteria for cost-sharing shall be determined during negotiations, however, GPA can only award on the base bid. If two Bidders can benefit from a shared interconnection, GPA may negotiate with each Bidder to reduce the total bid price for each party based on the interconnection savings.

   Clarification #5
   This means that the Bidders should submit price without anticipating interconnection cost-sharing? Please confirm.

ANSWER:

Yes. If there is an opportunity for interconnection cost-sharing between two awarded Contractors, GPA will negotiate the cost-sharing and reduction in overall energy rate.

QUESTION:

6. (Amendment VIII, Page 27 of 64)
   ANSWER:
   2) Proposals must provide evidence of site control. Searching for a site will not be considered as evidence of site control.

   Clarification #6
   If the Bidders fails to provide evidence of site control, then the Bidders will be disqualified or just get lower score in the evaluation?

ANSWER:

Evidence of site control is not a factor for disqualification. However, insufficient evidence may lower the Bidder's total score to below the acceptable minimum level.

QUESTION:

7. (Amendment VIII, Page 31 of 64)
   ANSWER:
   1) A total of four SEL-735 meters are required. One SEL-735 meter is required at the PV output AC-coupled to the GPA grid. Another SEL-735 meter is required at the PV output DC-coupled to the BESS. Another SEL-735 meter is required at the BESS output AC-coupled to the GPA grid. Another SEL-735 meter is required at the point of interconnection.

   Clarification #7
   If the POI is at the BESS output AC-coupled to the GPA grid, then three (3) SEL-735 will be required. Please confirm.

ANSWER:

GPA requires a total of four SEL-735 meters. The point of interconnection (POI) shall be at the combined output of the PV and BESS. It shall not be at the BESS output AC-coupled to the GPA grid.

QUESTION:

8. (Amendment VIII, Page 34 of 64)
   DEDEDO SUBSTATION
   Interconnection Allowed? (Yes/No) NO FOR T- 55; SPACE AVAILABLE FOR NEW T-54 TRANSFORMER THAT CONTRACTOR WILL NEED TO PURCHASE AND INSTALL

   Available Space for Additional Breaker? (Yes/No) SPACE AVAILABLE FOR 34.5 KV TRANSFORMER; CONTRACTOR WILL NEED TO PURCHASE 13.8 KV SWITCHGEAR

   Clarification #8-1.
   How about 34.5kV SWITCHGEAR and 34.5kV GCB? Does DEDEDO SUBSTATION have available banks and/or bays that the Bidders may use? Please provide as-built drawings.

   Clarification #8-2.

DEDEDO SUBSTATION is 34.5kV SUBSTATION. Will GPA accept the Bidder to propose two (2) 30MWac bids with 34.5kV interconnection from one (1) project site, which is same as Phase II? If yes, what equipment/facilities should be purchased and installed by the Bidder for interconnection to DEDEDO SUBSTATION?

ANSWER:

a. The Dededo Indoor Substation has a space for a future X223 breaker that Bidders can connect to. Please refer to the as-built drawing for the Dededo Substation Switchgear added to Appendix K.

   Kindly refer to No. 1 of *INCLUSIONS* above page 2 of 224c of 263.

b. No, only one 30 MW (AC) interconnection at the 34.5 kV level is allowed per project site.

QUESTION:

9. (Amendment VIII, Page 35 of 64)
   PULANTAT SUBSTATION
   Interconnection Allowed? (Yes/No) NO FOR T- 95; SPACE AVAIALABLE FOR T-96 TRANSFORMER THAT CONTRACTOR WILL NEED TO PURCHASE AND INSTALL

   Available Space for Additional Breaker? (Yes/No) SPACE AVAILABLE FOR 34.5 KV AND 13.8 KV SWITCHGEAR THAT CONTRACTORS WILL NEED TO REFURBISH AND ENERGIZE

   Clarification #9-1
   Please confirm T-96 Transformer is the New Transformer that the Bidder should purchase and install for 34.5kV interconnection.

   Clarification #9-2
   How about 34.5kV GCB in case the Bidders have 34.5kV interconnection?

   Clarification #9-3
   REFURBISH? Is this meaning that PULANTAT SUBSTATION has existing 34.5 KV AND 13.8 KV SWITCHGEAR that the Bidders may use if the Bidders REFURBISH AND ENERGIZE? Please provide as-built drawings.

ANSWER:

a. Yes, that is correct.

b. Bidders shall consult with their design engineers for the required equipment for the proposed project.

c. The Pulantat Substation has a bay available for a future X145 breaker, but it will require bus extensions. Bidders shall not interconnect at the 13.8 kV level. Please refer to the as-built oneline drawing for the Pulantat Substation added to Appendix K.

   Kindly refer to No. 4 of *INCLUSIONS* above.

QUESTION:

10. (Amendment VIII, Page 36 of 64)

DANDAN SUBSTATION
Interconnection Allowed? (Yes/No) YES
Available Space for Additional Breaker? (Yes/No) YES
Estimated Interconnection Capacity? (MWac) 25 MW shifted at night; 40 MW if UG transmission line is upgraded to 2-750 Cu

(Page 37 of 64)
Question
1) Regarding the existing 34.5kV Underground (500kcmil) from Dandan to Talofofo, there is an existing empty 6 inches spare conduit. Is it allowable for a Bidder to use it?
2) If yes, what is the maximum MVA POI Capacity when installing new 500kcmil conductor in this spare conduit?
3) If yes, what is the maximum MVA POI Capacity when installing new 750kcmil CU conductor in this spare conduit and replacing existing 500kcmil with 750kcmil CU?
4) If yes, what is the maximum MVA POI Capacity when installing new 750kcmil CU conductor in this spare conduit and NOT replacing existing 500kcmil?

ANSWER:
Proposals for this bid shall not include the use of the existing spare conduit from Dandan to Talofofo.

Clarification #10
Proposals for this bid shall design and install New UG transmission line from Dandan to Talofofo without using the existing spare conduit? Please confirm.

ANSWER:
Proposals for this bid shall not include the use of the existing spare conduit from Dandan to Talofofo.

QUESTION:
11. (Amendment VIII, Page 47 of 64)
ANSWER:
A. GPA will award the contract(s) to the Bidder(s) whose bid meets all of the requirements and yields the lowest net present value of the Annual Fixed Pricing ($/MWh) for the guaranteed renewable energy delivered for all years. GPA, at its discretion, may award one or more contracts to meet the minimum annual energy of 300,000 MWh up to a maximum annual energy of 530,000 MWh. However, GPA reserves the right to choose other technologies for diversification. This selection may include a higher priced proposal. Selections of proposals within the same technology will be based on the lowest evaluated cost as described in the bid document.

Clarification #11
Please provide interest rate when GPA calculate the lowest net present value.

ANSWER:
GPA typically uses a 6% interest rate.

QUESTION:
12. (Amendment VIII, Page 48 of 64)
ANSWER:

The active, or real, power of the renewable energy resource that is generated and stored between the hours of 6:00 AM to 6:00 PM shall be dispatched at the point of interconnection for 12 hours, between the hours of 6:00 PM to 6:00 AM, as required by the GPA Power System Control Center operators or a SCADA control point. Dispatchable power is delivered on demand and at various MW output levels at the request of GPA's Power System Control Center. GPA will not pay the Contractor Curtailment fees for dispatching limited outputs based on the power system demand. GPA will only pay Curtailment fees due to failure or maintenance of the interconnection facilities occurring after the one-year warranty has expired. However, if the Contractor fails to meet the Guaranteed Net Annual Generation (MWH/YR) because of GPA's inability to dispatch all of the energy produced by the Contractor due to limits based on the power system demand, GPA will pay the lost revenue up to the Guaranteed Net Annual Generation (MWH/YR) if substantiated by the Contractor. The required reactive power available depends on the size of the BESS provided. The requirement, independent of BESS capacity, is that the BESS's total apparent power (MVA) shall be sized to provide full rated active power at 80% power factor.

Clarification #12
Is this requiring additional BESS Power Capacity (i.e. PCS, BESS Inverter Capacity)? For example, if the total project capacity (POI capacity) is 100MW, then PCS nameplate capacity may be 60MW, which is 60% of the total project capacity. 60MW PCS nameplate is able to provide active and/or reactive power with power factor at nominal > 0.99, adjustable 1 leading ~ 1 lagging. "full rated active power at 80% power factor" means that GPA is requiring 75MW PCS nameplate capacity (60MW/80%, 125% additional nameplate capacity)? Or 60MW nameplate capacity is acceptable if power factor at nominal is > 0.99, adjustable 1 leading ~ 1 lagging?

ANSWER:
60 MW nameplate capacity is acceptable if the PCS is rated at 75 MVA.

QUESTION:
13. (Amendment VIII, Page 52 of 64)
ANSWER:
The guaranteed energy production refers to the Guaranteed Net Annual Generation (MWh/yr) in Part 2 – Technical Data, item 9.F, page 252 of 263 of the bid document which shall be submitted in the Bidder's proposal.

The guaranteed energy production also refers to the Guaranteed Annual Production indicated in Volume III, 2.1 Commercial Terms, page 139 of 263 of the bid document. However, the reference to the fourth column of Appendix A is a typographical error. The Guaranteed Annual Production is set forth in a fifth column of Appendix A which shall be the same as the Guaranteed Net Annual Generation (MWh/yr) in Part 2 – Technical Data, item 9.F submitted in the Bidder's proposal.

The Draft Contract in Volume III will be updated during the Contract Finalization period to reflect the applicable revisions from the bid document amendments.

Clarification #13
Please provide revision of below excel files to prevent confusion.
1) MS GPA-012-23 RRA PhIV Price Proposal Evaluation 2022-11-01.xls
2) MS GPA-012-23 RRA PhIV Qualitative Proposal 2022-11-01.xlsm

ANSWER:

The Excel files do not need to be revised based on the clarification provided. However, the Draft Contract in Volume III will be updated during the Contract Finalization period to reflect the applicable revisions from the bid document amendments.

QUESTION:

14. (Amendment VIII, Page 251a of 263)
    E2. Site Environmental Assessment (10)
    Discuss proposed actions to address environmental issues stated in the Navy Environmental Assessment including
    • Site development
    • Air quality
    • Water resources
    • Ecology
    • Land use
    • Cultural resources
    • Previous site use
    • Noise level
    • Aesthetic/visual

    Clarification #14-1
    Should this document be consideration of environmental laws, regulations, and executive orders as they may apply to Federal actions? Should it incorporate the Council on Environmental Quality (CEQ) regulations for implementing the NEPA, federal statutes and laws designed to protect the Nation's resources?

    Clarification #14-2
    Should this document be prepared by locally licensed environmental surveyors and/or engineers?

ANSWER:

These questions are not relative to the changes made in Changes #9 of Amendment VIII. The changes only involve the number of points assigned to the Site Environmental Assessment Evaluation Factor.

<u>Bidder No.: 10 dated 06/15/2023:</u>

QUESTION:

1. (Amendment VIII, Page 5 of 64)
   Energy and Capacity section reads:
   "For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 60% of the resource to be DC-coupled to the energy storage system with the remaining 40% AC-coupled to the GPA grid. Therefore, 60% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid."

   <u>Clarification 1.</u> When 60% of the resource is coupled to the energy storage system, LESS than 60% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid. The Bidders should consider ESS efficiency and loss.

Thus, LESS than 60% of the total project capacity will deliver firm, energy shifted power from the energy storage system to the GPA grid. For example, if PV production is 10GWh, 6GWh to be delivered to the ESS and less than 6GWh firm, energy-shifted power to be delivered to the GPA grid.

Please confirm if our understanding is correct.

Clarification 2. Should the Bidders maintain 60% requirement each year during the production period? Otherwise, is it acceptable for the Bidders to meet average 60% during the production period? For example, more than 60%@ year1 and less than 60%@ year30 but average should be 60% for 30 years production period.

ANSWER:

a. The percentage allocation of 50% to be DC-coupled and 50% to be AC-coupled is a physical connection and does not refer to the energy production. GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. For example, if the total project capacity is 100 MW, then 50 MW shall be DC-coupled to the energy storage system and 50 MW shall be AC-coupled to the GPA grid.

b. Please refer to the response to Clarification 1.

QUESTION:

2. (Amendment VIII, Pages 24-25 of 64, Question/Answer 1, Question/Answer 3 & Table in page 32)

Clarification 3. Please allow the Bidders to submit less than 5MWac minimum export capacity under one bid bond. Justification as follows:

Even though small-scale project may have less equipment unit cost benefit than large-scale project, less than 5MWac project may have additional 10% bonus ITC for low-income community under the Inflation Reduction Act, which encourages the Bidders to submit equivalent price proposals with large-scale project.

When we review GPA provided table in page 32 of 64, due to the unavailability of GPA substations, it is challenging situation for the Bidders to propose large-scale projects in various area of Guam. And also, relatively large lands in Guam are owned by Gov Guam, which takes too much time for the Bidders to secure the Gov Guam land and lease of Gov Guam land is only up to 5 years without Legislator's approval. Thus, to meet the GPA's RPS target, wide spread of small-scale projects would be a feasible solution.

Additionally, 13.8kV line's maximum cable rating is 11.5 MVA, which allows less than 5MWac projects to have 13.8kV interconnection. As a long-time local experienced bidder, Typhoon Mawar provided us lessons learned, wide-spread small-scale distributed renewable resources with 13.8kV interconnection will strengthen our local grid together with 115kV base-load power plant and 34.5kV distributed energy resources.

Therefore, please allow the Bidders to propose less than 5MWac with 13.8kV interconnection.

ANSWER:

GPA declines this request. Bidders shall not interconnect at the 13.8 kV level. A single project site shall have a minimum export capacity of 5 MW to the 34.5 kV or 115 kV GPA transmission system. A single proposal may have multiple project sites.

QUESTION:

3. (Amendment VIII, Pages 34 of 64, Table, #23 Dededo Substation)

   Clarification 4. We are planning to submit three (3) bids at one (1) site, which will have two (2) 30MWac with 34.5kV interconnection to the Dededo Substation and one (1) 4.99MWac with 13.8kV interconnection to the point of interconnection near the Dededo Substation. Two (2) 30MWac with 34.5kV interconnection from one (1) site to one (1) substation is the same approach as Mangilao and Malojloj projects in GPA Renewable Phase II.

   Please confirm if our approach is acceptable to GPA.

   Clarification 5. For our three (3) bids from one (1) site proposal, please let us know what equipment/facilities should be upgraded by the Bidder for DEDEDO SUBSTATION.

   Clarification 6. For our review, please provide existing As-Built Drawings, including electrical drawings.

ANSWER:

a. Bidders shall not interconnect at the 13.8 kV level. A single project site shall have a maximum export capacity of 30 MW to the 34.5 kV GPA transmission system or 60 MW to the 115 kV GPA transmission system. However, these limits may be lower if required by the System Integration Study. Also, there must be sufficient transmission capacity at the Dededo Substation to accommodate the Bidder's project as well as the Dededo CT plant.

b. The Dededo Indoor Substation has a space for a future X223 breaker that Bidders can connect to. Bidders shall consult with their design engineers for the required equipment for the proposed project.

c. Please refer to the as-built drawing for the Dededo Substation Switchgear added to Appendix K.

Bidder No.: 13 dated 06/20/2023:

QUESTION:

1. (Amendment No. VIII, 10. REPLACE with 102c of 263, Page 4 of 64)
   When storing and using energy, the energy storage system has charge and discharge losses. According to amendment 8, 60% of the resource to be DC-coupled to the energy storage system with the remaining 40% AC-coupled to the GPA grid, should a bidder meet this 60%:40% ratio in the GPA interconnection point for mandatory 25 years? Or should a bidder meet this 60%:40% ratio of only export capacity from the PV system?

ANSWER:

The percentage allocation of 50% to be DC-coupled and 50% to be AC-coupled is a physical

connection and shall remain at all times. GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. For example, if the total project capacity is 100 MW, then 50 MW shall be DC-coupled to the energy storage system and 50 MW shall be AC-coupled to the GPA grid.

QUESTION:

2. (Amendment No. VIII, QUESTION: 20, Page 23 of 64)
   If one project site is 60MW (AC) and configured to be connected with two interconnection lines with 34.5kV voltage level, can a bidder submit a single 60MW (AC) project proposal or should a bidder submit two 30MW (AC) project proposals?

ANSWER:

A single project site shall have a maximum export capacity of 30 MW to the 34.5 kV GPA transmission system or 60 MW to the 115 kV GPA transmission system. However, these limits may be lower if required by the System Integration Study.

Bidder No.: 11 dated 06/20/2023:

QUESTION:

1. "In Amd. VIII response 63 (page 57) the 'Minimum Production' in Vol. III Sec. 4.8 (which is utilized to calculate Deficient Amounts and Shortfalls) is defined as 'Expected Minimum Annual Generation' which is based on Part 2 - Technical Data, item 9.G. This is a different generation profile than the defined term 'Guaranteed Net Annual Generation' used for Vol. II Sec. 2.5.2, which calculates excess energy production. Consequently, as currently defined in Amd. VIII, the defined terms for the generation profiles utilized to calculate Deficient Amounts and the generation profiles utilized to calculate excess energy are misaligned which contradicts Vol III Sec. 2.5.2 (which states that '... failure to provide this guaranteed Annual Minimum Quantity will subject the Bidder to penalties...'").

   Additionally, the current definitions are commercially impractical given that the incentive is for Bidders to provide the highest possible Guaranteed Net Annual Generation such that excess energy is never produced, without any risk of Deficient Amounts given that the Expected Minimum Annual Generation is a separate profile. For example, imagine that the Expected Minimum Annual Generation is known to be 100MWh/year; the Bidder would still be incentivized to bid a Guaranteed Net Annual Generation of 300MWh+/year to avoid any excess energy, while not risking Deficient Amounts given that is calculated based on the Expected Minimum Annual Generation of 100MWh/year.

   Therefore, we request that the GPA clarify that in its response to Amd. VIII Question 63, it intended to state that Volume III, Section 4.8 should be interpreted to refer to Guaranteed Net Annual Generation and not Expected Minimum Annual Generation."

ANSWER:

The Draft Contract in Volume III will be updated during the Contract Finalization period to reflect the applicable revisions from the bid document amendments.

Bidder No.: 5 dated 01/10/2023:

QUESTION:

19. (Volume II, Page 103, 1. Overview – Energy Storage System (ESS))

For RAPID RESERVE requirement in response to under-frequency events, Bidder requires technical specifications and operating conditions for each function including but not limited to the information below.
a. Minimum capacities of Power(MW) and Energy(MWh)
b. Minimum/Maximum continuous output duration period(minutes) at the rated power
c. Event occurrence frequency by a certain period such as year, month, daily, etc.
d. Minimum/Maximum ramp rate(MW per min.)
e. Control interval time(sec. or msec.)
f. Interval time(sec.) on receiving control command from GPA systems such as PSCC SCADA or AGC system.

Please advise how Bidder shall include Rapid Reserve function in its bid while above information is absent.

ANSWER:

The ESS shall, at all times, be ready to dispatch its available stored energy to provide rapid reserve in response to under-frequency and over-frequency events. It is not required for the project to have reserve capacity available for a rapid reserve event. The number of cycles per year for the Rapid Reserve function is 75. The BESS must be able to inject power into the grid within 100 ms and come to full rated power within 200 ms.

QUESTION:

28. (Volume II, Page 109, 2.4.1. Interconnection)
    a. Please advise what happens if a Bidder's total cost for the interconnection is above GPA;s avoided cost whilst its Contract Price ($/MWh) is the lowest.
    b. Please also provide the details of GPA's avoided cost: the marginal utility cost as determined by GPA's resource planning software.

ANSWER:

(a) The contract price should be inclusive of the interconnection costs. However, on the Part 2 – Technical Data worksheet, Bidders shall provide their total interconnection cost separately in case further negotiations are required. Bidders shall also provide the interconnection cost in $/MWH which represents the interconnection cost already included in the Annual Price in $/MWH indicated on the Price Offer Worksheet.

In these types of bids, GPA always has the option to consider cancelling this bid if all cost proposals are above GPA's avoided cost. Because time is of the essence and these bids may take a long time to set up, GPA will issue an amendment allowing negotiations to bring the contract price below GPA's avoided cost.

Kindly see No.5 of *INCLUSIONS* above.

(b) GPA's avoided cost will be calculated during step two of the bid evaluation process. However, Bidders shall be advised that GPA will not accept proposals above $0.179 per kWh, unless the value of the interconnection cost is deemed acceptable by GPA.

QUESTION:

41. (Volume III, Page 145, 4.5 Seller's and Buyer's Obligation)
    Please provide the Appendix K of PPA.

ANSWER:

Appendix K of Volume III will be updated during the Contract Finalization period and will include the curtailment compensation calculation. The compensation will be calculated using data from the sun irradiance meter and will be based upon the most recent system performance data available, past measurements from the system's revenue meter (to indicate system performance and output), system meteorological data, and other data that is determined to be relevant.

The following may be considered for the expected production calculation in the event of curtailed energy:

- Actual weather conditions (insolation, temperature, wind speeds)
- Actual availability
- Outages outside of both parties' control (force majeure)
- Planned outages (e.g., PV plant maintenance)
- Lost production due to equipment outages - This should NOT be considered for payment, this is a production shortfall caused by the Contractor
- Duration of curtailment (start and stop times)

The Contractor shall provide an annual report documenting all calculations and assumptions for GPA's review and approval.

QUESTION:

47. (Volume III, Appendix G, Page 181, Appendix G Calculation of Curtailed Amount Due to GPA Dispatch Down)
Please inform what equipment is associated to weather data. Bidder understand that only weather station seems to be considered a weather data associated equipment and the accuracy will be checked by GPA.

ANSWER:

GPA recommends weather stations with a smart pyranometer, such as the Kipp & Zonen Smart Pyranometer SMP series.

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

for JOHN M. BENAVENTE, P.E.
General Manager

This bid shall be a Two Step process. Step One will establish a Qualified Bidders List (QBL) based on acceptable submitted non-price Bid information (or Technical Qualification Proposals). Step One is the period from IFB announcement through Notification of Qualified Bidders. Step Two will evaluate the Priced Proposals from the vendors identified on the QBL and which, if any, Qualified Bidder(s) will be awarded a contract(s). Step Two is the period after completion of the Technical Proposal Evaluation and notification of the QBL to the contract award date.

GPA will qualify the Bidders based on their Technical Qualification Proposals and the Qualitative Scoring Workbook. GPA will notify the Bidders selected for the QBL and will proceed with the second step of the bid process to open the sealed bid Priced Proposals of the qualified bidders. GPA will perform a comprehensive evaluation of each bid and select the Bidder(s) with the best bids based on the submitted purchase power price, minimum guarantees, and required technical data.

After the selection of the winning Bidders(s), GPA will conduct system integration studies, at the selected Bidders' expense, to determine system upgrades or improvements required and the associated cost necessary for the selected renewable resource's integration into the GPA transmission system.

If the selected Bidder(s) cannot proceed with the contract, GPA may elect to
1) go to the next best Bidder; or
2) cancel the bid.

Table 1: Bid Milestones indicate the anticipated milestones in the Bid Process.

GPA reserves the right to change the Bid Milestones at its sole discretion. Bidders are encouraged to confirm with GPA any of the scheduled milestones via an official letter to GPA.

Table 1: Bid Milestones

	Bid Milestones	From Date	To Date
*	**Bid Announcement**	12/01/2022	10/02/2023
	Submit Questions	12/01/2022	02/07/2023
	Cut-Off Date for Receipt of Questions	**02/07/2023 4:00 P.M. CHamoru Standard Time; (CHST)**	
	Cut-Off Date for Receipt of Questions Relative to Bid Amendment No.: VII ONLY	**05/30/2023 4:00 P.M. CHamoru Standard Time; (CHST)**	
*	GPA Review and Answer Questions	02/08/2023	08/14/2023
*	Bidders Prepare Technical Proposals (Unpriced)	08/14/2023	10/02/2023

*	**Cut-Off Date for Receipt of Technical Proposals (Unpriced)**		**10/02/2023 2:00 P.M. CHamoru Standard Time, (CHST)**	
*	**EVALUATION Step One:**	Technical Proposal Evaluation	10/04/2023	10/17/2023
*		Notification of Qualified Bidders	10/19/2023	10/20/2023
	EVALUATION Step Two:	**Cut-Off Date for Receipt of Priced Proposals**	**11/06/2023 2:00 P.M. CHamoru Standard Time; (CHST)**	
		Opening of Price Proposals (Public Opening)	**11/07/2023 2:00 P.M. CHamoru Standard Time; (CHST)**	
*		Evaluation of Price Proposal	11/08/2023	11/10/2023
*		Notification of Successful Bidder(s)	11/13/2023	11/17/2023
	System Integration Study		TBD	TBD
	Contract Finalization		TBD	TBD
	Contract Approval & Recommendation to Award		TBD	TBD
	Public Utilities Commission Review		TBD	TBD
	Office of Attorney General Approval ***(Note: Delay due to new procurement review requirement per Office of the Attorney General)**		TBD	TBD
	Contract Signing		TBD	

1.1. Invitation for Bid (IFB) Document Organization

Invitation for Bid (IFB) documents are organized into six separate volumes, as follows:

Volume I — Commercial Terms and Conditions

Volume II — Technical Qualification Requirements

Volume III — Draft Renewable Energy Purchase Agreement

Volume IV — Bid Scoring Mechanism

Volume V — Appendices

In addition, the IFB documents include two (2) sets of electronic spreadsheets (MS Excel Workbooks):

- Qualitative Proposal Scoring.xls
- Price Proposal Evaluation.xls

imbalance. The GPA Islandwide System Transmission Single Line Diagram can be found on the following webpage:

http://guampowerauthority.com/gpa_authority/engineering/gpa_engineering_system_diagrams.php

1.2.3. Guam Weather

Guam's climate is pleasantly warm year-round. The mean annual temperature is 81 degrees; generally, the range is from the low 70s to the middle 80s. The coolest and least humid months, marked by prevailing westerly trade winds, are in December through February. Although the warmest months are from March through August, the refreshing trade winds blow steadily. The annual rainfall totals 80 to 110 inches. There are two seasons, the dry and the rainy. The dry season begins in December through June. The rainy season falls within the remaining months.

Weather	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg Fahrenheit	76	77	78	79	79	80	80	80	79	80	80	79
Avg Centigrade	24	25	26	26	26	27	27	27	26	27	27	26
rainfall inches	5.16	4.26	2.97	4.03	4.49	5.19	9.59	12.16	14.08	14.40	8.51	5.85
rel humidity %	77	76	75	74	73	76	76	81	81	80	80	78
sunshine hrs/day	11.15	11.30	11.51	12.16	12.40	12.58	13.00	12.47	12.24	12.00	11.35	11.18

✱ 1.2.4. Historical Renewable Resource Data

Historical 10 second renewable energy delivery from GPS Solar's 26MW Solar PV facility recorded at the Talofofo Substation is available on the GPA renewable website for download at:

https://admin.guampowerauthority.com/uploads/Historical_Renewable_Energy_Data_798ad58342.pdf?updated_at=2023-04-11T05:17:28.371Z

Data is from March 2016 thru November 2017 and is the total output of the solar facility delivered to GPA.

1.3. IFB Document Media

The five-volume set of IFB documents and all Amendments to this IFB may be made available to Bidders in electronic filing format including:

GPA reminds Bidders to submit the Priced Proposal in a separate sealed envelope clearly marked "Priced Proposal" for Step Two of the bid process.

1.2. GPA Overview

GPA is a public utility corporation that provides electric power service throughout the entire island of Guam. GPA, in conjunction with Private Partners, operates and maintains 13 power plants, with a total rated capacity of 552.4 MW. The authority also has installed and maintains an estimated combined total of 188 miles of 115 kV and 34.5 kV transmission lines and an estimated 495 miles of primary distribution lines, and 26 substations.

In addition, the authority operates and maintains a total capacity of 18 MW for emergency generators to support 128 Guam Waterworks Authority water and sewage pump stations and sewage treatment facilities situated at various locations throughout the island and 10 portable units.

GPA is comprised of several departments or divisions, which include Executive/Administrative, Finance, Computer Services, Engineering, Planning & Regulatory (Environmental), Safety, Human Resources, Customer Service, Facilities, Strategic Planning and Operations Research, Generation, Procurement, Transmission & Distribution (T&D), and Transportation. Majority of the departments are located in the Gloria B. Nelson Public Service Building (GPA Main Office) located in Mangilao. However, T&D, Generation, and Transportation Offices and buildings are located throughout the island.

✱ 1.2.1. Generation Overview

An overview of GPA's generation resources and transmission systems is provided in GPA's Integrated Resource Plan, which can be found at the following webpage:
https://admin.guampowerauthority.com/uploads/GPA_2022_Integrated_Resource_Plan_b16ef41f9e.pdf?updated_at=2022-09-20T07:24:07.680Z

1.2.2. Electrical System Overview

Guam Power Authority has approximately 182 miles of 115KV and 34.5KV transmission lines. There are 6 ea. 115KV and 35 ea. 34.5KV lines connecting 30 substations throughout the island. These Substations have 63 ea. 13.8KV distribution feeders with approximately 592 miles of lines. The Guam Power Authority follows National Electrical Manufacturers Association (NEMA) ANSI C84 for delivery of power and

f. SCADA/EMS/SA/AGC Communications Protocol

The ESS shall have the capability to interface with GPA's SCADA, EMS, Substation Automation (SA) and AGC systems over the latest stable release of serial and IP based DNP 3-Secure Authentication communications protocol.

GPA requires the project control system to report each inverter failure or cessation to the GPA SCADA system. The controller will report any alarm that can lead to a system or individual converter cessation or tripping to the GPA SCADA system. The controller will report all delivered power to GPA from the PV system, curtailed power from the PV system, ESS charging power, ESS power, (real and reactive) delivered to GPA, ESS state charge.

Bidder shall provide Bidder's guaranteed success rate according to the size of ESS in the Qualitative Scoring Workbook. The bidder shall also describe the method of calculating and monitoring the success rate in the technical proposal.

g. Control System Software

GPA has three battery energy storage systems incorporated into its power system at Hagatna, Talofofo, and KEPCO Mangilao Solar Power Plant. They all use inverter-battery controls from PXiSE Energy Solutions. GPA has partnered up with PXiSE on two grant proposals awaiting decision from the United States Government:

- Integration of Autonomous Grid Controller to Support High Penetration of Renewable Energy on Guam's Electric Grid
- System Wide nFLISR: An Autonomous and Dynamic Network-wide Fault Location, Isolation and Service Restoration System with Active Control

✱ Both grant projects would require integration with all BESS inverters for the purpose of centralizing control of all BESS to provide grid services to GPA's power system. This amendment requires all Phase IV Bidders integrate and use the PXiSE control system, or an equivalent or better control system, as a part of their proposal. GPA based this decision on:

- Reduction of technical risk of integration with systems to be developed under the above grant projects
- Reduction of risk due to Intellectual Property complexities that may result from separate control system vendors and PXiSE
- Cybersecurity

2.2.3. Proven Technology

The proposed resource technology and key components must have a minimum of one (1) year of operating experience in commercial utility application.

If the proposed technology is a "scale up" of an existing facility, the operational performance data for the smaller plant must be at least 1/10 the proposed plant size or larger.

2.2.4. Use of GPA Facilities

The use of GPA sites or facilities (with the exception of interconnection facilities) will NOT be permitted in this RFP.

2.2.5. Limits on Renewable Energy Purchases

Due to the nature of the generation control system and related response characteristics of the generators on the GPA system, GPA may limit the amount of energy delivered from renewable resources to no more than 30MW (AC) at the interconnection point.

1. OVERVIEW

In this Invitation for Multi-Step Bid ("IFB"), GPA is seeking competitive bids for renewable energy resources to meet a portion of its overall resource needs. For selected Bidder(s), GPA will execute purchase power agreements for delivery of firm, non-intermittent power from one, or more, renewable generation resources to the 34.5 kV or 115 kV GPA transmission system. GPA intends to procure a total minimum annual energy of 300,000 MWh up to 530,000 MWh (approximately 180 MW to 320 MW), based on proposed sites, in this Phase IV acquisition that can meet the following established requirements:

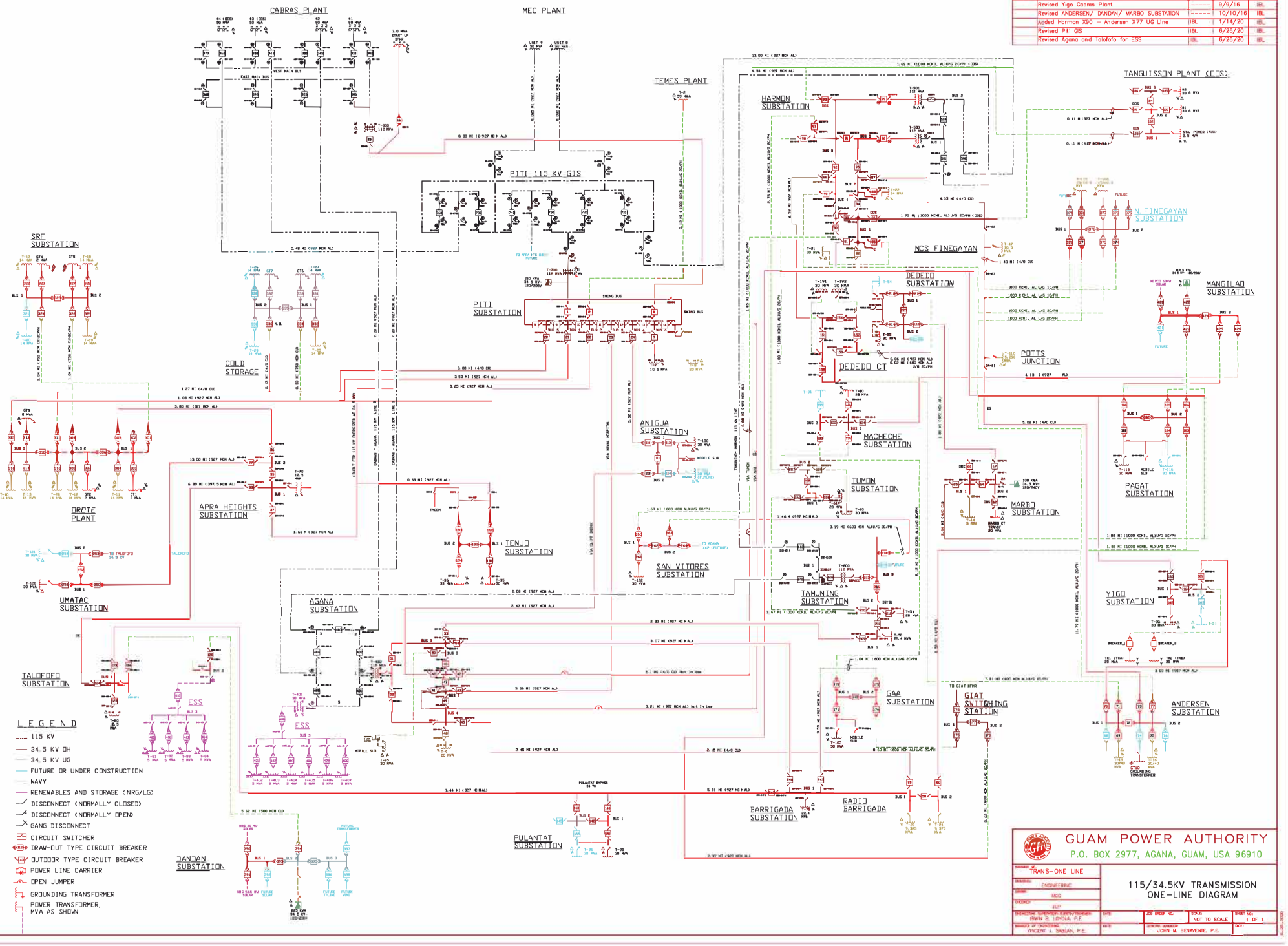
- **RENEWABLE RESOURCE TECHNOLOGY:** The Bidder's resource technology shall be grid-forming / black-start capable and meet the definition of "renewable resource" as described in ***Section 2.2.1 Acceptable Renewable Technologies***.

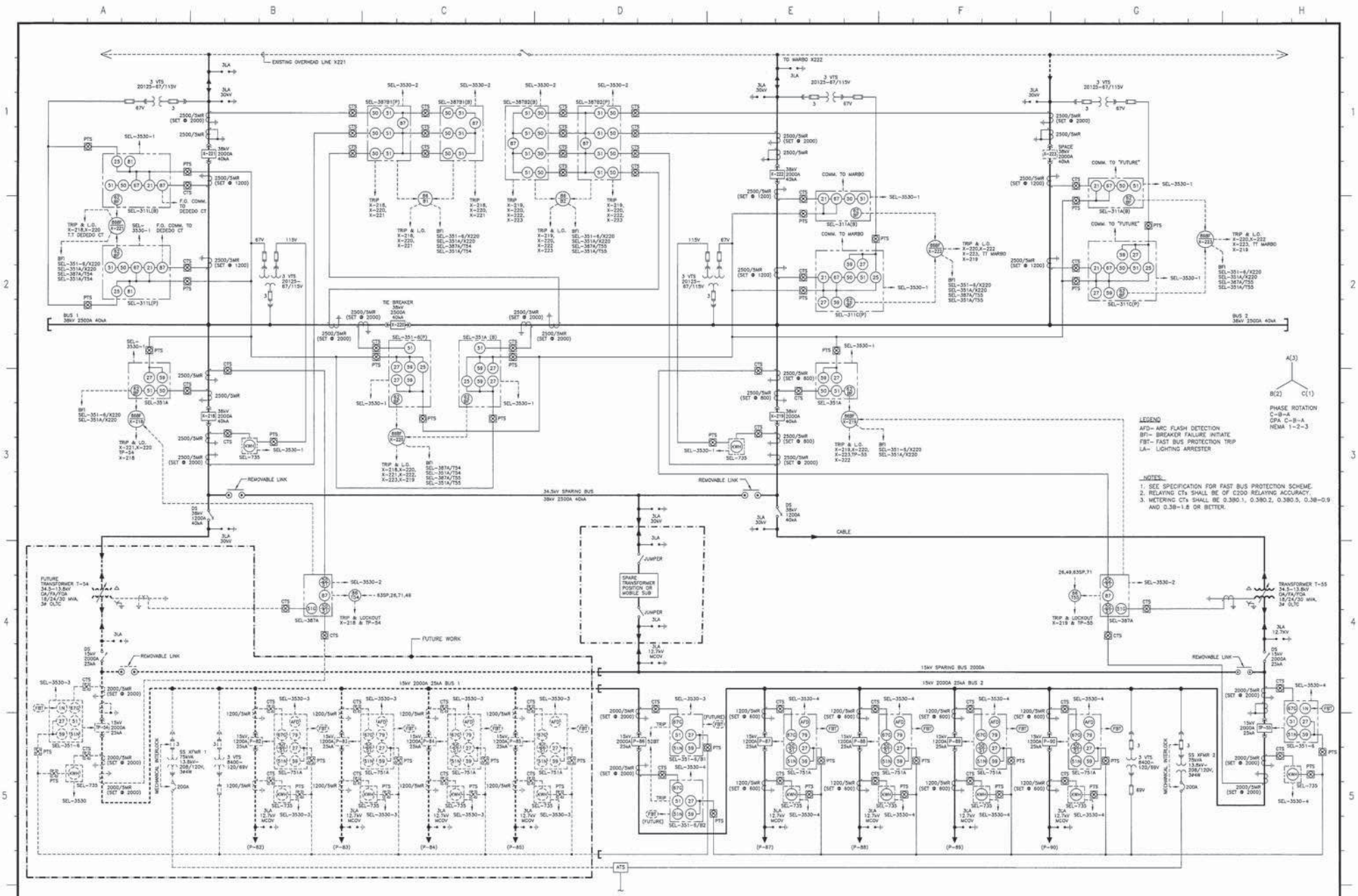
* - **ENERGY AND CAPACITY:** The renewable energy resource shall deliver an annual minimum energy (AC) as specified in the Bidder's Qualitative Proposal with a maximum export capacity of 60 MW (AC) at the interconnection point; this may be a combination of several generation units at one or more sites. However, the nameplate capacity that can be installed may be lower than 60 MW at 115 kV, subject to the maximum additional MW capacity that the GPA system can handle as determined by a System Integration Study. The System Integration Study will be completed within 120 days after evaluation of the Price Proposal(s) and initial notification of the most qualified Bidders. For proposals with an intermittent renewable energy resource coupled with an energy storage system, GPA will allow 50% of the resource to be DC-coupled to the energy storage system with the remaining 50% AC-coupled to the GPA grid. Therefore, 50% of the total project capacity will deliver firm, energy-shifted power from the energy storage system to the GPA grid. The energy storage system shall also provide ramp-rate control for the power delivered from 50% of the total project capacity such that the ramp-rates are kept within 1% per minute at the guaranteed success rate of 95% during the energy production period. However, before or after a GPA curtailment, this rate may be exceeded at the request of the GPA Power System Control Center operators. GPA will not pay for the energy delivered to the GPA grid that did not meet the guaranteed success rate.

- **DISPATCHABLE ACTIVE POWER CAPABILITY:** The active, or real, power of the renewable energy resource shall be dispatchable at the point of interconnection, between the hours of 6:00 PM to 6:00 AM, as required by the GPA Power System Control Center operators or a SCADA control point. The available capacity may also be dispatched outside of these hours if deemed necessary by the GPA Power System Control Center operators. The delivered output to the GPA grid shall be firm, non-intermittent power with a ramp-up and ramp-down rate limited to 1% of rated power output per minute. However, this rate may be exceeded at the request of the GPA Power System Control Center operators. The total capacity and energy available for dispatching shall be provided to the GPA Power System Control Center through a SCADA point every second.

- **DISPATCHABLE REACTIVE POWER CAPABILITY:** The renewable energy resource must provide a dispatchable reactive capability requirement up to 0.80 lag to lead at the point of interconnection as required by the GPA Power System Control Center operators and a SCADA / grid controller automated

AMENDMENT NO.: IX Page 224c of 263 (1 of 2)





REV.	BY	DATE	DESCRIPTION						
D				APPR.	Y.F.HUNG	JAN 06, 2014	UNIT IN INCH [mm]	SCALE NOT	DEDEDO INDOOR SUBSTATION GUAM POWER AUTHORITY
C				CHKD.	K.L.YEH	JAN 06, 2014	GPA PROJECT NO:		
B				DEGN.	J.L.HUANG NAME	JAN 06, 2014 DATE	E-100110		ALLIS ELECTRIC CO., LTD.

TITLE	ONE-LINE DIAGRAM FOR 34.5KV METAL-CLAD SWITCHGEAR			REV. NO.
MFR. NO.	110212115	DWG. NO.	013-H01	SHEET NO.

DOCUMENT RECEIPT CHECKLIST

Document Title	Proponent Initial
Volume I Commercial Terms and Conditions	_____
Volume II Technical Qualification Requirements	_____
Volume III Purchase Power Agreement (Draft)	_____
Volume IV Proposal Scoring Mechanism	_____
Volume V Appendices	
APPENDIX A – Proposal Checklist	_____
APPENDIX B – Bid Bond Form and Instructions	_____
APPENDIX C – Ownership & Interest Disclosure Affidavit	_____
APPENDIX D – Non-Collusion Affidavit	_____
APPENDIX E – Local Procurement Preference Application	_____
APPENDIX F – Performance Bond	_____
APPENDIX G – No Gratuities or Kickbacks Affidavit	_____
APPENDIX H – Ethical Standards Affidavit	_____
APPENDIX I – Declaration of Compliance with US DOL's Wage Determination	_____
APPENDIX J – Restriction Against Sex Offenders	_____
APPENDIX K – Electrical System Drawings	_____
APPENDIX L – Required Interconnection Technical Information	_____
APPENDIX M – §3118 (Cost or Pricing Data) & §6101 ((9) Liquidated Damages) of the Guam Procurement Regulations	_____
APPENDIX N – Historical LEAC – Fuel Recovery Rates	_____
APPENDIX O – Potential Utility Solar Sites	_____
APPENDIX P – Policy Directive on System & Service Acquisition	_____
✱APPENDIX Q – SCADA Requirements	_____
Qualitative Scoring Workbook.xls	_____
Priced Proposal Workbook.xls	_____
Contiguous Amendment Notifications From Amendment No. 1 through _____	_____
Others:	_____

SECTION 16704

SUPERVISORY CONTROL AND DATA ACQUISITION SYSTEM

PART 1 GENERAL

1.0 SCOPE

1.1. This section includes the requirements for the design, manufacture, factory testing and delivery and installation of indoor supervisory control and data acquisition (SCADA) system. The SCADA system shall be complete and ready for operation with 34.5 kV and 13.8 kV switchgear specified in Section 16351 and Section 16352, respectively. The SCADA equipment shall include the following:

- Central processing unit
- Discrete programmable controller
- HMI Monitor, keyboard and mouse
- GPS Clock
- GPS antenna and accessories
- Full-duplex modems. Two (2) each required
- Fiber optic transceivers
- Cables and connectors
- Circuit breakers and accessory devices
- Cabinet with swing doors

1.2. Seismic Category D requirements shall apply. ANSI MC8.1 temperature and humidity requirements shall also apply.

1.2 CONFORMANCE TO STANDARDS AND SPECIFICATIONS

The SCADA system shall meet the requirements of the following standards and specifications, including the latest revisions with respect to material design and tests.

1.2.1 Applicable Standards

Provisions of the following standards shall apply:

IEEE C37.1	Definition, Specification, and Analysis of Systems used for Supervisory Control, Data Acquisition, and Automatic Control
IEEE 999	IEEE Recommended Practice for Master/Remote Supervisory Control and Data Acquisition Communications
NEC	National Electrical Code

NESC National Electrical Safety Code

1.2.2 Deviation and Non-Conformance Requirements

2.2.1 Deviations from this specification or changes in materials or design after the Purchase Order has been placed must be approved by the GPA Engineering Department and acknowledged by a Purchase Order Amendment.

2.2.2 Units received with deviations or non-conformances which are not acknowledged as specified in Sub-Paragraph 2.2.1 are subject to rejection. The Supplier is responsible for any corrective action including but not limited to materials, labor and transportation necessary to dispose of, or make the units conform to the specification.

2.2.3 Notification of defects discovered before or after installation that are believed to be inherent to manufacturing problems or workmanship shall be made and forwarded to the Supplier. The description of the item, documentation of the problem and the described information, disposition and/or follow-up (as appropriate) that GPA expects from the Supplier will be specified. The Supplier's response shall be made within thirty (30) days unless an extension is acknowledged and approved in writing by the GPA Manager of Engineering.

2.2.4 GPA shall be allowed two (2) weeks to review and approve drawings without affecting the shipping date. Delays in delivery due to drawings which are not approved during this review period are the responsibility of the Supplier.

1.2.3 Warranty

The Supplier shall warrant the satisfactory and successful operation of the apparatus furnished under this specification at the rating, under the conditions, and for the service specified for a period of not less than one (1) year. The Supplier shall further warrant the apparatus against defects of design, material and workmanship.

1.3. SUBMITTALS

1.3.1 Equipment outline drawings shall be submitted for approval within 30 days after Notice to Proceed. The remaining Shop Drawings shall be submitted within 60 days after Notice to Proceed. GPA will provide the successful bidder samples for three line and DC Schematics and preferred format for inter-connection diagrams as a guide.

1.3.2 Shop Drawings and data shall include the following:

a. General arrangement, floor plan, elevations and sections, anchor bolt details, overall dimensions and weights.

b. A complete set of ac and dc schematic diagrams

c. SCADA input and output point list.

c. Panel wiring diagrams with terminal block and device connections. Tabular format is not acceptable.

e. External wiring diagrams with terminal blocks and cables

f. Software and SCADA program descriptions.

g. Bill of materials and manufacturers catalog sheets clearly marked.

h. SCADA HMI screen shots (in color)

i. Operations and maintenance manuals with a section on troubleshooting shall be submitted 30 days prior to shipment.

1.3.3 Instructions for installation shall be submitted within 90 days after Notice to Proceed.

1.3.4 Operations and maintenance manuals with a section on troubleshooting shall be submitted 30 days prior to shipment.

1.3.5 Number of Copies

a. Submit two (2) each hardcopies and one (1) electronic soft file (pdf) of shop drawing, pre-printed manufacturers' data, brochures and suppliers' information for review and approval. Electronic copies may be submitted if approved by the Owner.

b. After approval and manufacturing of equipment, submit one (1) electronic soft file (pdf) and five (5) prints of each shop drawing which has been specifically prepared for the Work. Indicate on the drawings that the drawings reflect the as-built condition of the equipment.

c. Submit one (1) electronic soft file (pdf) and five (5) copies of operations and maintenance manuals with a section on trouble shooting and instructions for installation.

d. Submit one (1) copy of the as-built condition shop drawings on AUTOCAD 2013.

1.4 QUALITY ASSURANCE

1.4.1 Factory Tests

Not less than 30 days prior to factory tests, a factory test plan shall be submitted to the Owner for approval. Each item of electrical equipment and similar equipment supplied as spare parts, shall be given the manufacturer's routine factory tests and also other tests as specified, to ensure successful operation of parts of the assemblies. The factory test equipment and the test methods used shall conform to the applicable requirements of ANSI, IEEE and NEMA standards. Five certified copies of the reports of production tests, including complete test data shall be submitted to the Owner. Factory tests will be witnessed by the Owner. Contractor shall be responsible for cost of travel, meals, and accommodations for two (2) GPA personnel for a minimum of three (3) days, or days required to perform and witness a comprehensive Factory Acceptance Testing.

1.4.2 Factory Acceptance Test

Not less than 30 days prior to factory tests, a factory test plan shall be submitted to the Owner for approval. Each item of electrical equipment and similar equipment supplied as spare parts, shall be given the manufacturer's routine factory tests and also other tests as specified, to ensure successful operation of parts of the assemblies. The factory test equipment and the test methods used shall conform to the applicable requirements of ANSI, IEEE and NEMA standards. Five certified copies of the reports of production tests, including complete test data shall be submitted to the Owner.

1.4.2.1 Functional Tests

Tests shall be made on assembled SCADA system for proper programming, operations, direction and calibration. Operational tests shall be performed with the SCADA system interconnected with the switchgear equipment specified in Sections 16351 and 16352 to verify monitoring and control capability intended for normal operation. Testing shall not interfere with switchgear testing and shall done separately.

1.4.2.2 Factory Test Reports

Two (2) hardcopies and one (1) soft file (pdf) of certified test results shall be provided to the Owner within 30 days after performance of factory tests.

1.4.3 Field Acceptance Test

Perform field acceptance tests as specified in elsewhere in these specifications.

1.5 TRAINING

1.5.1 Provide a minimum of three (3) day training for SCADA equipment for Owner's personnel. Training shall consist of classroom and on-site instructions for a minimum of 25 personnel. Supply all necessary reference materials, drawings, and documentation.

1.5.2 Classroom training shall provide a technical overview of SEL-3355 platform, system configuration and communication, screen display (HMI), control and monitoring, alarm processing, input/output points, programming, diagnostics and maintenance requirements.

1.5.3 On-site training shall provide hands-on instructions on SCADA equipment operation in real-time environment. All operating conditions and "what if" scenarios shall be simulated and covered, including remote communications with GPA's energy control system. Interface with protective relays and field equipment shall be reviewed and verified for correct indications and control.

PART 2 PRODUCTS

2.1 GENERAL

The SCADA system shall be housed in a self-standing cabinet and consist of GE G500 Substation Gateway (primary and backup), GE Mulitlin D20S Status Input Module, Schweitzer SEL-3355 computing platform, SEL-2407 GPS clock, interconnecting cables, power strips and breakers as a fully functioning SCADA remote terminal unit that is capable of communicating with the GPA Power Control Center in DNP3.0 protocol. The SCADA system shall be configured for communications with the protective relays, meters and Real-Time Automation Controller (RTAC) Automation Platform, located in the 34.5 kV and 13.8 kV switchgear and retrieve real-time data and engineering data, such as protective relay status, alarms and events access. The SCADA system shall be able to send remote control signals to switchgear line and feeder breakers when the 43L/R switches on the switchgear are in Remote position. Time signals shall be disseminated to all protective relays.

2.2 COMPUTING PLATFORM

The computing platform shall be Schweitzer SEL-3355 (3355#9F79) and Microsoft Windows 10 IoT. The computing platform shall include a 17-inch LCD monitor with keyboard and mouse.

2.3 GPS CLOCK

The GPS satellite clock shall be Schweitzer SEL-2407 (2407#MMDK) with GPS antenna (SEL-9524). Accessories shall include antenna mounting kit, cable, gas tube surge protector and mounting brackets and RG-58 cable with BNC connectors and resistor(s).

2.4 INDUSTRIAL SWITCH / ROUTER

The L3 Cisco Industrial Switch (IE-4010-4S24P) shall include Power Supply (PWR-RGD-AC-DC-250), Software License upgrade (L-IE4000-RTU) to IP Service for L3 features, and a pair (2) of Cisco 1000 Base-LX/LH 1310 nm, 10km, SFP for Single Mode Fiber Transceiver Modules (GLC-LH-SMD) per Industial Switch.

2.5 SCADA SOFTWARE

The GE Substation Gateway shall include required sets of client-server for data acquisition from SEL protective relays, meters and RTAC, communications, event retrieval, relay database access and HMI.

2.6 SCADA HMI DISPLAYS

The following HMI screens shall be provided as minimum.

Substation One-line Diagram with real-time data
Metering Data (revenue and relay metering)
Main and feeder breaker remote controls
Main and feeder breaker status
Transformer status (provision only)
Protective relay status and alarms
43L/R Switch Status
Alarms with acknowledge - reset
Alarm History
Setup Menu (password access)

2.7 CABINET AND ACCESSORIES

The cabinet shall be provided with ventilated front and rear lockable doors with ventilating fan on top panel as shown on the Drawing. The front door shall be hinged as shown. The cabinet shall be equipped with a 19-inch relay rack for component mounting, including the HMI monitor, slide-out keyboard tray, and relays. Unused rack spaces shall be covered with blank panels. Circuit breakers and power strips shall be provided for components installed in the cabinet. Wiring and cable management provisions shall be provided for all external cables entering the cabinet. The cabinet shall be approximately 26” W x 32” D x 72” H and constructed of 14 Gage steel. A ground bus shall be provided.

2.8 WIRING AND ACCESSORIES

2.8.1 The SCADA system shall be completely wired at the factory, ready for installation and connection by others. Terminal blocks and jumper cables shall be properly identified for assembly. Unused terminals on relays and auxiliary contacts shall be brought to conveniently located terminal blocks. Cables and all control and meter connections shall enter from the bottom. The manufacturer shall ensure that sufficient vertical and horizontal clearances are provided for training and terminating these cables without requiring excessive bending or the use of special adapter plates.

2.8.2 All secondary wiring shall be stranded. No. 12 AWG shall be used for control circuits, #10 for CT circuits and #16 for SCADA indication or as indicated in the design drawings. Switchboard wire shall be NEC type SIS, and rated for 600 volts. Insulation jacket shall be gray in color. Splices will not be permitted. Suitable, extra flexible wiring shall be provided over door hinges or other locations where leads may be subjected to flexing.

2.8.3 Ring-tongue terminals shall be used for secondary wiring. Spade, slotted spade, flanged spade, and hook terminals are not acceptable. The strength of the terminals shall be such that the terminals will not break during vibration of the equipment in which the terminals are installed. Ring-tongue terminals shall be Thomas & Betts Stakon.

2.8.4 Terminals shall have insulated ferrules. To assure positive electrical connections, and to avoid damage to the ferrule, it is mandatory that the crimping tool be used in accordance with manufacturer's instructions, and that the proper terminal and crimping tool be used for each wire size. Crimps shall be made with the crimp indentation opposite to the connector seam.

2.8.5 Miscellaneous accessories, such as resistors, fuses, fuse blocks, and capacitors not shown on the Drawings but required for proper operation shall be furnished.

2.8.6 Terminal blocks for grouping of SCADA wiring shall be thermo-plastic insulation type, rated 300 Volts, with test socket screws, knife switch contacts and shall be mounted on rails. The marking system shall be Dekafix consecutive vertical numbering system and Peso white blanks for Owner's marking. Terminal blocks shall be furnished complete with mounting rails, end brackets, end plates, partitions and test equipment. Wiring to the SCADA terminal blocks shall be made with No. 16 wire minimum.

2.8.7 Wiring Format

A. All terminals shall be numbered, and the numbers shall correspond to the numbers on the wiring diagram.

B. All wires shall be identified at their termination points with the opposite end designation

identification by labeled plastic sleeves or equal. Identification shall correspond to the lettered device, numbered terminal format of the wiring diagrams.

2.9 NAMEPLATES

Nameplates shall be furnished and installed for panels, switches, relays and devices, including those internally mounted, and shall be of laminated plastic or formica with white letters on black background and shall be sized for easy reading. Nameplates shall be securely fastened to the panel with stainless steel panhead screws to prevent detachment and loss. Nameplate data shall be submitted for Owner's approval. Designations shall be machine engraved in upper case letters and shall be centered on the nameplates.

2.10 PAINTING

The cabinet shall be thoroughly cleaned of rust, welding scale and grease, and shall be treated to effectuate a bond between the metal and paint which will prevent the formation of rust under the paint. A priming coat shall be applied immediately after the bonding treatment. A final finish shall consist of not less than one coat for concealed surfaces and two coats for exterior surfaces. Final finish shall be light gray, ANSI Color No. 70.

2.11 SPACE HEATERS

Provide heaters that are installed and operable at the time of shipment so that the heaters can be operated immediately upon arrival at the site, during storage, or before installation. Provide connection locations that are marked prominently on drawings and shipping covers and that have temporary leads for storage operation.

2.12 ACCESSORIES AND SPARE PARTS

Accessories, special tools and spare parts required for proper maintenance and testing of the equipment, circuit breakers and devices shall be provided and shall be turned over to GPA upon the completion of the project. Accessories and spare parts shall include the following:

Ten fuses of each rating used.
Four circuit breakers of each type used.
Exhaust fan.
Special tools required for proper maintenance, testing and inspection of the equipment.

2.13 PACKING AND SHIPPING REQUIREMENTS

2.13.1 Because of severe transportation conditions, the Supplier shall pay particular attention to the proper packaging and bracing of the apparatus to assure its safe arrival.

2.13.2 The Supplier shall prepare all materials and equipment for shipment in such a manner as to protect from damage in transit. All small parts and unit components shall be separately boxed or bundled to prevent galling due to rubbing of one part against another. Each item, box or bundle shall be plainly and individually identifiable for content according to item number, GPA P.O. Number, and Supplier's Identifying Number.

2.13.3 A complete itemized Bill of Lading, which clearly identifies and inventories each assembly, sub-assembly, carton, package, envelope, etc., shall be furnished and enclosed with each item or items at the time of shipment.

2.13.4 The SCADA system shall be shipped in crates containing not more than two units each.

PART 3 EXECUTION

3.1 GENERAL

A. Fully assemble and install in accordance with manufacturer's instruction.

B. Remove wedges, ties, and shipping blocks.

C. Do not distort frames. Follow manufacturer's instructions for handling, installing and operating equipment. Ensure personnel working with the equipment fully understand the procedures involved.

D. Make all electrical connections. Use proper calibrated torque wrench when terminating feeder cables.

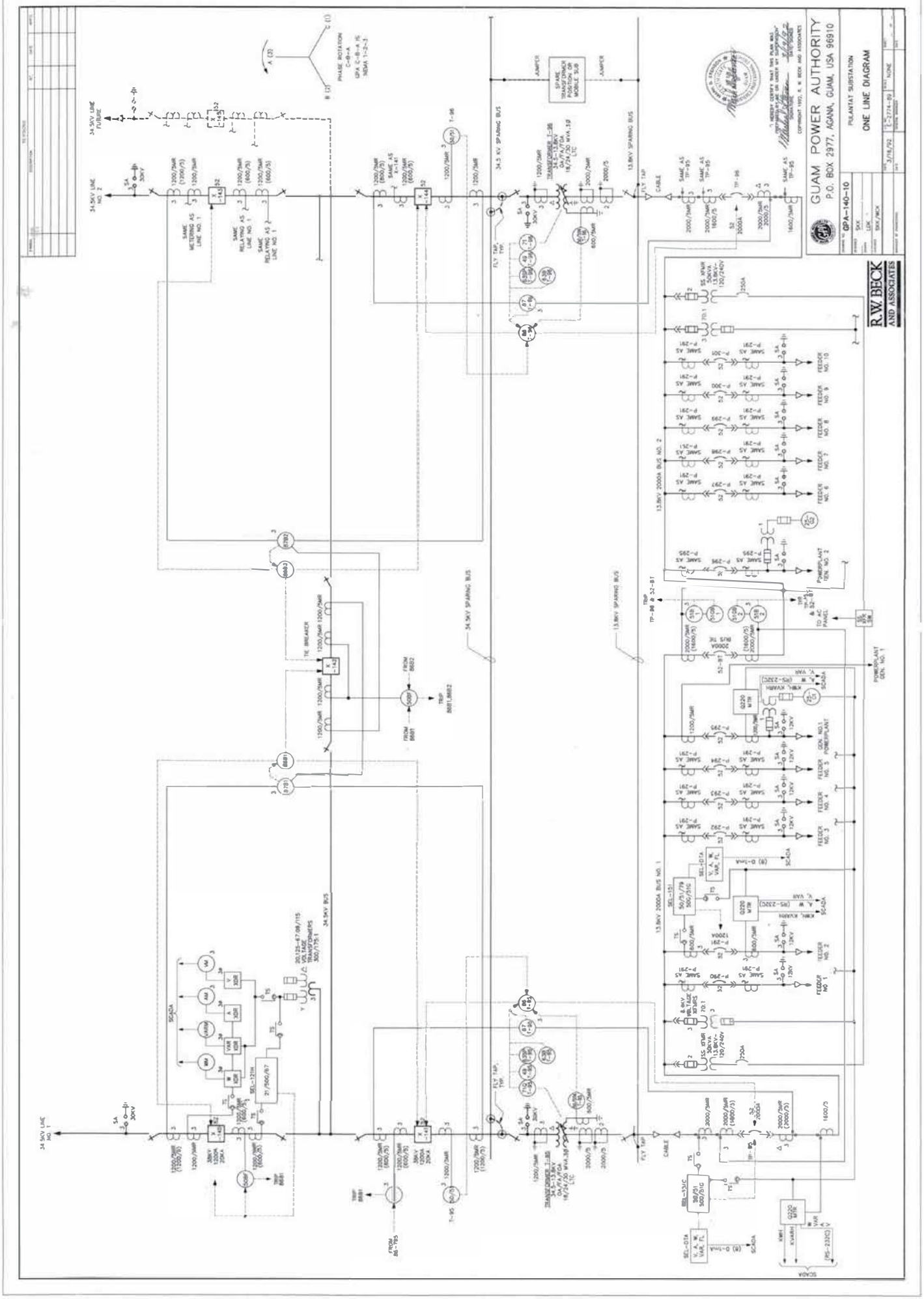
E. Make ground connections.

3.2 FIELD TESTING AND COMMISSIONING

Submit test and commissioning procedures for field testing and acceptance of the SCADA system in accordance with the manufacturer's recommendations, for approval by the Owner. Procedures shall include steps to verify data acquisition, controls and communications between all protective relays, meters, I/O devices, SEL-3355, RTU and GPA PSCC (Power System Control Center) EMSYS (Energy Management System). Accuracies of acquired data shall be verified against calibrated test equipment.

Refer to Section 16998 and 16999 for other field installation testing and startup requirements.

END OF SECTION 16704


GUAM POWER AUTHORITY
P.O. BOX 2977, AGANA, GUAM, USA 96910
PULANTAT SUBSTATION
ONE LINE DIAGRAM
GPA-140-10
R.W. BECK AND ASSOCIATES
34.5KV BUS
13.8KV BUS
34.5KV LINE NO. 1
34.5KV LINE NO. 2
34.5KV LINE FUTURE
SCADA
FEEDER NO. 1
FEEDER NO. 2
FEEDER NO. 3
FEEDER NO. 4
FEEDER NO. 5
FEEDER NO. 6
FEEDER NO. 7
FEEDER NO. 8
FEEDER NO. 9
FEEDER NO. 10
POWERPLANT GEN. NO. 1
POWERPLANT GEN. NO. 2
TIE BREAKER
TRANSFORMER T-95
TRANSFORMER T-96
SPARE TRANSFORMER POSITION OR MOBILE SUB
PHASE ROTATION
A-B-C
GPA C-B-A
NEMA 1-2-3

BIDDER: **PROJECT NAME.: <<<project name>>>** **BIDDER'S NO.: <<< BIDDER'S BID NO >>>**

10. Interconnection and Transmission Information

10.A Interconnection Voltage:
10.B Interconnection Point / Substation:
10.C Interconnecting Transmission Line:
10.D Total Interconnection Cost ($):
***10.E** Total Interconnection Cost ($/MWH):

11. Power Purchase Agreement Information

11.A Term, years:
11.B Contract Net Capacity, KW:

12. Renewable Energy Project Generation Profile

Provide the monthly estimated average net MWh per hour for every hour of the day. GPA requests for operation profile to evaluate the project. Annual projections must equal the Guaranteed net annual generation in 9.F above. **Data provided shall be the solar production net output (excludes ESS & other losses/meter output). GPA will use this data to determine total daily production to be dispatched over its peak period (6PM -10PM) based the ESS capacity entered in 9D above.**

Open Fold *(Show All Years)* Close Fold *(Hide After 1st Year)*

			Hour:																							
CON YR	MON	YR	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	DAYS	Monthly Total MWh
1	Jan	2022																									31	0
1	Feb	2022																									28	0
1	Mar	2022																									31	0
1	Apr	2022																									30	0
1	May	2022																									31	0
1	Jun	2022																									30	0
1	Jul	2022																									31	0
1	Aug	2022																									31	0
1	Sep	2022																									30	0
1	Oct	2022																									31	0
1	Nov	2022																									30	0
1	Dec	2022																									31	0

	Annual Production (MWH)	Guarantee Match? (9.G)	Capacity Factor
Contract Year: 1	0	YES	#DIV/0!
2	0	YES	#DIV/0!
3	0	YES	#DIV/0!
4	0	YES	#DIV/0!
5	0	YES	#DIV/0!
6	0	YES	#DIV/0!
7	0	YES	#DIV/0!
8	0	YES	#DIV/0!
9	0	YES	#DIV/0!
10	0	YES	#DIV/0!

	Annual Production (MWH)	Guarantee Match? (9.G)	Capacity Factor
Contract Year: 11	0	YES	#DIV/0!
12	0	YES	#DIV/0!
13	0	YES	#DIV/0!
14	0	YES	#DIV/0!
15	0	YES	#DIV/0!
16	0	YES	#DIV/0!
17	0	YES	#DIV/0!
18	0	YES	#DIV/0!
19	0	YES	#DIV/0!
20	0	YES	#DIV/0!

	Annual Production (MWH)	Guarantee Match? (9.G)	Capacity Factor
Contract Year: 21	0	YES	#DIV/0!
22	0	YES	#DIV/0!
23	0	YES	#DIV/0!
24	0	YES	#DIV/0!
25	0	YES	#DIV/0!
26	0	YES	#DIV/0!
27	0	YES	#DIV/0!
28	0	YES	#DIV/0!
29	0	YES	#DIV/0!
30	0	YES	#DIV/0!

13. Renewable Energy Project Portfolio Credit Generation Profile

Provide the monthly estimated net portfolio credits per hour for every hour of the day.