



***Appendix D-Attachment C-1
Solar MFS Bidder Questions***

for

2021 Request for Proposals

for

***Renewable Resources
For Entergy Arkansas, LLC***

Entergy Arkansas, LLC

August 3, 2021

**APPENDIX D
PRELIMINARY DUE DILIGENCE LIST**

ATTACHMENT C-1

This Attachment C-1 to Appendix D (Preliminary Due Diligence List) to the RFP includes select questions from Appendices 1, 2, 3, 4, and 9 (Attachment 2) of Appendix B-2 (Scope Book) to the RFP. This Attachment C-1 applies to proposals for BOT transactions and Self-Build or Affiliate Options.

PERFORMANCE GUARANTEES (FROM APPENDIX 1 OF APPENDIX B-2)

The following table requests inputs regarding performance guarantees for the Facility. Bidder is required to fill out and provide all information requested in the table. If Bidder's data differs from that specified in the table, Bidder must provide Bidder's corrected data and the justification for the change.

PERFORMANCE GUARANTEES				
N°	CHARACTERISTICS	UNITS	DATA	NOTES
1	MINIMUM CRITERIA			
1.1	Guaranteed PV Plant Capacity (@ Electrical Interconnection Point (EIP))	MWac		
1.2	Minimum PV Plant Capacity (@Electrical Interconnection Point (EIP))	MWac		
1.3	Guaranteed Run Requirement	Duration		Uninterrupted operation during the Project Performance Test for PV Plant Capacity subject to the Failure Mode Guidelines as set forth in Appendix 5 of the Scope Book
1.4	Project Net Electricity Production (P50) in Year 1 (starting at the Substantial Completion Payment	MWh		

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	Date) @ Electrical Interconnection Point (EIP))			
1.5	Guaranteed BESS Power Rating (@Electrical Interconnection Point (EIP))	MWac		
1.6	Minimum BESS Power Rating (@Electrical Interconnection Point (EIP))	MWac		
1.7	Guaranteed BESS Energy Storage Capacity (@Electrical Interconnection Point (EIP))	MWh ac		DC & AC
1.8	Minimum BESS Storage Capacity Electrical Interconnection Point (EIP))	MWh ac		
1.9	BESS RT Efficiency (@ BESS)	%		
1.10	Minimum BESS RT Efficiency (@ BESS)	%		
1.11	Minimum BESS Availability (Required / As Bid)	%	99% /	
1.12	Long-Term BESS Availability (Required / As Bid)	%	97% /	

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ENERGY MODEL (PV_{SYST}) (FROM APPENDIX 2 TO APPENDIX B-2)

The following table requests inputs to and results from the Energy Model (PV_{SYST}). Bidder is required to fill in and provide all information requested in the table. If Bidder's data differs from that specified in the table, Bidder must provide Bidder's corrected data and the justification for the change.

N°	CHARACTERISTICS	UNITS	DATA
1	REFERENCE SITE CONDITIONS	-	
1.1	Global Horizontal Irradiation (GHI) @ ground level	kWh/m ²	
1.2	Diffuse Horizontal Irradiation (DHI) @ ground level	kWh/m ²	
1.3	Ambient temperature	°C	
1.4	Altitude (above sea level)	Ft	
2	WEATHER DATA	-	
2.1	Data source	-	
2.2	Period of data collection	Months	
2.3	Distance from site or spatial resolution	Km	
2.4	Uncertainty	%	
3	MODEL PARAMETERS	-	
3.1	Installed Capacity (DC)	MW _p	
3.2	Nominal Power (AC)	MW	
3.3	Nominal Power at Electrical POI (AC)	MW	
3.4	DC/AC ratio	-	
3.5	PV _{SYST} Software Version		
3.6	Transposition Model		
3.7	Meteorological File Parameters		
3.8	Post Processed Losses	%	
3.9	PV Modules	-	
3.9.1	PV module manufacturer and model	-	
3.9.2	PV module power at STC	W _p	
3.9.3	Technology	-	
3.9.4	Number of PV Modules per string	-	
3.9.5	Total number of PV Modules installed	-	
3.9.6	Total number of strings	-	
3.10	Inverters	-	
3.10.1	Inverter manufacturer and model	-	
3.10.2	Input voltage rating	VDC	

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N°	CHARACTERISTICS	UNITS	DATA
3.10.3	Number of strings per inverter	-	
3.10.4	Number of inverters	-	
3.11	Mounting System	-	
3.11.1	Tilt angle of fixed tilt system or rotation limits of tracking system	°	
3.11.2	Backtracking	Yes / No	
3.11.3	Orientation of PV Modules (azimuth)	°	
3.11.4	Installation type (portrait / landscape)	-	
3.11.5	Rows and columns per mounting structure	- x -	
3.11.6	Ground Coverage Ratio	%	
3.12	Array losses	-	
3.12.1	Module quality loss	%	
3.12.2	Module mismatch losses	%	
3.12.3	String mismatch losses	%	
3.12.4	Light induced degradation losses	%	
3.12.5	IAM losses defined by manufacturer	Yes / No	
3.12.6	Constant thermal loss factor	W/m ² /k	
3.12.7	Wind loss factor	W/m ² /k/ m/s	
3.12.8	Soiling losses January February March April May June July August September October November December	%	Average Annual and Monthly
3.12.9	Ground Albedo January February March		Average Annual and Monthly

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N°	CHARACTERISTICS	UNITS	DATA
	April May June July August September October November December		
3.12.1 0	Spectral correction applied	Yes / No	
3.13	Cabling	-	
3.13.1	DC ohmic losses @STC (Max/Calculated)	%	
3.13.2	AC ohmic losses @STC (Max/Calculated)	%	
3.14	Transformers	-	
3.14.1	Transformer type	-	
3.14.2	Number of transformers	-	
3.14.3	Constant Loss	W	
3.14.4	Peak Power Loss	W	
3.15	System losses	-	
3.15.1	Year 1 (starting at the Substantial Completion Payment Date) degradation	%	
3.15.2	Annual degradation	%	
3.15.3	Light soaking effect	%	
3.15.4	Inverter losses	%	
3.15.5	Auxiliary losses	%	
3.15.6	Unavailability	%	
3.15.7	Combined Uncertainty	%	

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N°	CHARACTERISTICS	UNITS	DATA	
4	ANNUAL PERFORMANCE RESULTS	-	PVsyst Results	Final Results
4.1	Net electricity production	MWh/yr		
4.1.1	Year 1 (starting at the Substantial Completion Payment Date) P50	MWh/yr		
4.1.2	Year 1 (starting at the Substantial Completion Payment Date) P90	MWh/yr		
4.1.3	30-year average, P50	MWh/yr		
4.1.4	30-year average, P90	MWh/yr		
4.2	Specific Yield (Year 1, starting at the Substantial Completion Date, P50)	kWh/k Wp/yr		
4.3	Specific Yield (Year 1, starting at the Substantial Completion Date, P90)	kWh/k Wp/yr		
4.4	Performance Ratio (Year 1, starting at the Substantial Completion Date, P50)	%		
4.5	Performance Ratio (Year 1, starting at the Substantial Completion Date, P90)	%		

DESIGN AND OPERATIONAL DATA (FROM APPENDIX 3 TO APPENDIX B-2)

The following table details design and operational requirements for the Facility. Bidder is required to fill out and provide all information requested in the table. If Bidder's data differs from that specified in the table, Bidder must provide Bidder's corrected data and the justification for the change.

N°	CHARACTERISTICS	UNITS	DATA
1	DESIGN CONDITIONS	-	
1.1	Design lifetime of the plant (Required / As Bid)	years	30 /
1.2	Average elevation	ft a.s.l.	
1.3	Ambient Temperature Recorded (Minimum/Average/Maximum)	°F	
1.4	Design Temperature for Operation (Minimum/Maximum)	°F	
1.5	Design Humidity Ratio (Minimum/Maximum)	Grams of water vapor	

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N°	CHARACTERISTICS	UNITS	DATA
		/ Grams of dry air	
1.6	Design wind speed (per ASCE 7, Risk Category III)	Mph	
1.7	Rainfall (Annual Avg/Annual Max/1-day Max/Design Basis Rainfall Event)	In	
1.8	Typical meteorological year (GHI)	kWh/m ²	
1.9	Seismic Zone	-	
1.10	Available Area required (approx.)	Acres	
2	GENERAL PLANT DATA		
2.1	PV technology type		
2.2	Installed Capacity (total DC peak power)	MWp	
2.3	Nominal Power (AC) (total nominal inverter output)	MW	
2.4	Nominal Power at Electrical POI (AC)	MW	
2.5	DC/AC ratio		
2.6	Nighttime Auxiliary Power (Average/Peak)	MW	
2.7	Annual Nighttime Auxiliary Power (starting at the Substantial Completion Payment Date)	MWh	
2.8	Total area covered by PV arrays	acres	
2.9	Total area of Project	acres	
2.10	Row to row spacing	Ft	
2.11	Ground Coverage Ratio	%	
2.12	Shading losses due to internal row spacing	%	
2.13	Total number of PV panels	Qty	
2.14	Total number of strings	Qty	
2.15	Total number of racking system tables	Qty	
2.16	Total number of combiner boxes	Qty	
2.17	Total number of inverters	Qty	
2.18	Total number of LV/MV transformers	Qty	
3	MONTHLY PERFORMANCE RATIOS	-	
3.1	January	%	
3.2	February	%	
3.3	March	%	
3.4	April	%	
3.5	May	%	

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N°	CHARACTERISTICS	UNITS	DATA
3.6	June	%	
3.7	July	%	
3.8	August	%	
3.9	September	%	
3.10	October	%	
3.11	November	%	
3.12	December	%	
3.13	PR Base	%	
4	YEARLY PERFORMANCE RATIOS	-	
4.1	Year 1 (starting at the Substantial Completion Payment Date)	%	
4.2	Year 2	%	
4.3	Year 3	%	
4.4	Year 4	%	
4.5	Year 5	%	
4.6	Year 6	%	
4.7	Year 7	%	
4.8	Year 8	%	
4.9	Year 9	%	
4.10	Year 10	%	
4.11	Year 11	%	
4.12	Year 12	%	
4.13	Year 13	%	
4.14	Year 14	%	
4.15	Year 15	%	
4.16	Year 16	%	
4.17	Year 17	%	
4.18	Year 18	%	
4.19	Year 19	%	
4.20	Year 20	%	
4.21	Year 21	%	
4.22	Year 22	%	
4.23	Year 23	%	
4.24	Year 24	%	
4.25	Year 25	%	
4.26	Year 26	%	

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N°	CHARACTERISTICS	UNITS	DATA
4.27	Year 27	%	
4.28	Year 28	%	
4.29	Year 29	%	
4.30	Year 30	%	
5	ANNUAL DEGRADATION FACTOR	-	
5.1	Year 1 (starting at the Substantial Completion Payment Date)	%	
5.2	Year 2	%	
5.3	Year 3	%	
5.4	Year 4	%	
5.5	Year 5	%	
5.6	Year 6	%	
5.7	Year 7	%	
5.8	Year 8	%	
5.9	Year 9	%	
5.10	Year 10	%	
5.11	Year 11	%	
5.12	Year 12	%	
5.13	Year 13	%	
5.14	Year 14	%	
5.15	Year 15	%	
5.16	Year 16	%	
5.17	Year 17	%	
5.18	Year 18	%	
5.19	Year 19	%	
5.20	Year 20	%	
5.21	Year 21	%	
5.22	Year 22	%	
5.23	Year 23	%	
5.24	Year 24	%	
5.25	Year 25	%	
5.26	Year 26	%	
5.27	Year 27	%	
5.28	Year 28	%	
5.29	Year 29	%	
5.30	Year 30	%	

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N°	CHARACTERISTICS	UNITS	DATA
6	YEARLY PRODUCTION	-	
6.1	Year 1 (starting at the Substantial Completion Payment Date)	MWh/yr	
6.2	Year 2	MWh/yr	
6.3	Year 3	MWh/yr	
6.4	Year 4	MWh/yr	
6.5	Year 5	MWh/yr	
6.6	Year 6	MWh/yr	
6.7	Year 7	MWh/yr	
6.8	Year 8	MWh/yr	
6.9	Year 9	MWh/yr	
6.10	Year 10	MWh/yr	
6.11	Year 11	MWh/yr	
6.12	Year 12	MWh/yr	
6.13	Year 13	MWh/yr	
6.14	Year 14	MWh/yr	
6.15	Year 15	MWh/yr	
6.16	Year 16	MWh/yr	
6.17	Year 17	MWh/yr	
6.18	Year 18	MWh/yr	
6.19	Year 19	MWh/yr	
6.20	Year 20	MWh/yr	
6.21	Year 21	MWh/yr	
6.22	Year 22	MWh/yr	
6.23	Year 23	MWh/yr	
6.24	Year 24	MWh/yr	
6.25	Year 25	MWh/yr	
6.26	Year 26	MWh/yr	
6.27	Year 27	MWh/yr	
6.28	Year 28	MWh/yr	
6.29	Year 29	MWh/yr	
6.30	Year 30	MWh/yr	

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KEY EQUIPMENT DATASHEETS (FROM APPENDIX 4 TO APPENDIX B-2)

The following table details requirements for the designated equipment. Bidder is required to fill and provide all information requested in the table. If Bidder's data differs from that specified in the table, Bidder must provide Bidder's corrected data and the justification for the change.

MODULE			
N°	CHARACTERISTICS	UNITS	DATA
1	GENERAL		
1.1	Manufacturer		
1.2	Type/Model		
1.3	Cell type		
1.4	Cell configuration		
2	ELECTRICAL DATA		
2.1	Nominal maximum power	W	
2.2	Power tolerance	W	
2.4	Module efficiency	%	
2.5	Rated voltage (Vmp)	V	
2.6	Rated current (Imp)	A	
2.7	Open-Circuit voltage	V	
2.8	Short-Circuit voltage	V	
2.9	Maximum system voltage	VDC	
2.10	Series fuse rating	A	
2.11	Annual degradation factor	%	
2.12	Grounding requirements		
3	TEMPERATURE CHARACTERISTICS		
3.1	Power	%/K	
3.2	Voltage	%/K	
3.3	Current	%/K	
4	MECHANICAL DATA		
4.1	Cell type		
4.2	Cell arrangement		
4.3	Dimensions	Mm	
4.4	Front cover		
4.5	Frame material, if applicable		
4.6	Junction box		
4.7	Cable		
4.8	Weight	Kg	

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MODULE			
N°	CHARACTERISTICS	UNITS	DATA
5	TESTED OPERATION CONDITIONS		
5.1	Operating temperature	°C	
5.2	Max load	Pa	
5.3	Impact resistance		
6	WARRANTIES		
6.1	Product warranty period (Required / As Bid)	Yrs	10 /
6.2	Power warranty (Required / As Bid)	Yrs	25 /
6.3	Certifications		

INVERTER			
N°	CHARACTERISTICS	UNITS	DATA
1	GENERAL		
1.1	Manufacturer		
1.2	Type/Model		
1.3	N° machines		
2	INPUT RATING		
2.1	Rated power	kW	
2.2	Max. DC Input voltage	V	
2.3	MPP voltage range	V	
2.7	N° of MPP trackers		
2.8	Input overvoltage protection		
3	OUTPUT RATING		
3.1	Rated output power	kW	
3.2	Rated grid voltage	V	
3.3	Voltage range	V	
3.4	Max. output current	A	
3.5	Contributory fault current	A	
3.6	Rated frequency	hz	
3.7	Nominal power factor and adjustable range	%	
3.8	THD (rated power)	%	
3.9	Output fuse rating	A	
3.10	Output overvoltage protection		
4	OPERATING PERFORMANCE		
4.1	Maximum efficiency	%	

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INVERTER			
N°	CHARACTERISTICS	UNITS	DATA
4.3	CEC weighted efficiency	%	
4.4	Max. standby consumption	W	
4.5	Max. self-consumption (operation)	W	
5	ENVIRONMENT		
5.1	Operating temperature range	°C	
5.2	Noise level	dB(A)	
5.3	Maximum installation altitude without derating	m a.s.l.	
5.4	Maximum acceptable temperature at Pn	°C	
5.5	Installation type	indoor / outdoor	
5.6	Dimensions/machine (width/height/depth)		
5.7	Weight/machine	Kgs	
5.8	Galvanic isolation		
6	COOLING		
6.1	Cooling method		
6.2	Cooling air requirement	cfm	
6.3	Heating system		
7	OTHERS		
7.1	Communication		
7.2	Emergency stop		
7.3	Positive earth soft connection		
7.4	External auxiliary power for inverter machine		
7.5	Additional circuits for tracker motors		
7.6	Disconnect parameter adjustable		
7.7	All pole sensitive RCB		
7.8	Isolation monitoring		
7.9	Overload behavior		
7.10	Internal DC switch		
8	WARRANTIES		
8.1	Product warranty period (Required / As Bid)	yrs	5 /
8.2	Certifications		

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TRACKER			
N°	CHARACTERISTICS	UNITS	DATA
1	GENERAL		
1.1	Manufacturer		
1.2	Type	Fixed / Tracking	
2	BASIC DATA		
2.1	Ground Coverage Ratio	%	
2.2	Type of foundations		
2.3	Corrosion protection	Yes / No	
2.4	Type of corrosion protection		
2.5	Design wind speed (per ASCE 7, Risk Category III)	Mph	
2.6	Tilt	°	
2.7	Module positions	landscape / portrait	
2.8	Module arrangement		
2.9	kWp per table	kWp	
2.10	Number of tables		
2.11	Dimensions (length/width/height)	M	
3	TRACKER SYSTEM		
3.1	Maximum slope		
3.2	Type of tracking system		
3.3	Tracking range		
3.4	Backtracking	Yes / No	
3.5	Rows per tracker actuator		
3.6	Strings per row		
3.7	Power per tracker	kWp	
3.8	Drive type		
3.9	Power consumption	kWh/MWp/yr	
3.10	Stow Wind Speed	Mph	
3.11	Motors per MWp		
4	WARRANTIES		
4.1	Manufacturer's material & workmanship (Required / As Bid)	yrs	10 /
4.2	Motor, gear, battery, controller (Required / As Bid)	yrs	5 /

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TRACKER			
N°	CHARACTERISTICS	UNITS	DATA
4.3	Certifications		

LV/MV TRANSFORMER			
N°	CHARACTERISTICS	UNITS	DATA
1	GENERAL		
1.1	Manufacturer		
1.2	Type/Model		
1.3	N° of units		
1.4	Intellectual Properties		
1.5	Design - manufacture standards		
1.6	Name of datasheet attached		
2	TRANSFORMER CHARACTERISTICS		
2.1	Type of Transformer		
2.2	3 x single phase or three-phase		
2.3	Core or shell		
2.4	Type of tank		
2.5	Type of cooling		
2.6	Vector group		
2.7	Winding material LV/HV	Al/Cu	
2.8	Rated frequency	hz	
2.9	Transformer life value at IEC conditions		
2.10	Rated power based @ 20°C	kW	
2.11	Higher grid voltage	kV	
2.12	Insulation voltage level	kV	
2.13	Short duration withstand voltage	kV	
2.14	Test voltage (60 hz 1min)	kV	
2.15	Transformation ratio		
2.16	Primary rated current	A	
2.17	First Secondary rated current	A	
2.18	Second Secondary rated current	A	
2.19	Primary no load current	A	
2.20	Excitation current (rated V/110% rated V)	A	
2.21	Maximum inrush current HV	A	
2.22	Maximum withstand short-circuit current	kA	

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2.23	Duration of short-circuit current	S	
2.24	Tappings		
2.25	Load losses at 75°C	W	
2.26	No-load losses	W	
2.27	Short-circuit impedance	%	
2.28	Environmental class		
2.29	Climatic class		
2.30	Fire behavior class		
2.31	Thermal class		
2.32	Dimensions (width/height/depth)	In	
2.33	Weight of complete transformer	lbs	
3	accessories		
3.1	Accessories oil type		
3.2	Shock tightness degree		
3.3	Salt-fogtight		
3.4	T ^a resistance		
3.5	Max. Rated pressure		
3.6	Pressure range		
3.7	Oil level		
3.8	T ^a range		
3.9	PT 100, Dry type		
3.10	T ^a range		
3.11	Output signal		
3.12	Other technical characteristics		
4	OTHERS		
4.1	Temperature rising windings	°F	
4.2	Terminals (location)		
4.3	LV		
4.4	MV		
4.8	Accessories		
5	WARRANTIES		
5.1	Product Warranty Period (Required / As Bid)	mo	18-36 /

BATTERY			
N°	CHARACTERISTICS	UNITS	DATA
1	GENERAL	-	

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BATTERY			
N°	CHARACTERISTICS	UNITS	DATA
1.1	Manufacturer	-	
1.2	Type/Model	-	
1.3	Quantity required	Qty	
1.4	Design – Manufacture Standards	-	
2	RATINGS	-	
2.1	Continuous Real Power - Discharge (Rated/Maximum)	MW	
2.2	Continuous Real Power - Charge (Rated/Maximum)	MW	
2.3	Continuous Apparent Power - Charge (leading and lagging) (Rated/Maximum)	MVA	
2.4	Continuous Apparent Power - Discharge (leading and lagging) (Rated/Maximum)	MVA	
2.5	Continuous Reactive Power (Rated/Maximum)	MVARs	
2.6	Rated Discharge Energy (BOL)	MWh	
2.7	Rated Continuous AC Current	A	
2.8	Output Voltage Range (AC grid voltage)	kV	
2.9	Output Frequency Range	hz	
2.10	Maximum Ramp Rate (charging/discharging)	MW/min	
2.11	Charge Time (Minimum/Typical/Maximum)	hr	
2.12	Recommended Charge Power	MW	
2.13	Typical Charge Time (include any rest period between charge and discharge cycle)	hr	
2.14	Expected Availability of System	%	
2.15	Typical Start Up Time / Shut Down Time	s	
3	EFFICIENCY AND CYCLE LIFE	-	
3.1	Cycle Life @ Full rated power.	qty	
3.2	Total Round Trip Efficiency, 100% DOD Cycles, Full rated power (BOL and EOL)	%	
3.3	Total Round Trip Efficiency, 100% DOD Cycles, 50% rated power (BOL and EOL)	%	
3.4	Total Round Trip Efficiency, 50% DOD Cycles, Full rated power (BOL and EOL)	%	

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BATTERY			
N°	CHARACTERISTICS	UNITS	DATA
3.5	Total Round Trip Efficiency, 50% DOD Cycles, 50% rated power (BOL and EOL)	%	
3.6	Total Round Trip Efficiency, 25% DOD Cycles, Full rated power (BOL and EOL)	%	
3.7	Total Round Trip Efficiency, 25% DOD Cycles, 50% rated power (BOL and EOL)	%	
4	AUXILIARY POWER	-	
4.1	Average Auxiliary Power Required (continuous/peak)	kW	
4.2	Auxiliary Nominal Voltage	VAC	
5	ENVIRONMENT	-	
5.1	Rate Operating Temperature Range (Minimum-Maximum)	°F	
5.2	Noise Level (@ 3ft)	dba	
5.3	Rated Operating Relative Humidity Range (Minimum-Maximum)	%	
5.4	Maximum Installation Altitude Without Derating	ft a.s.l.	
5.5	Installation Type	indoor/ outdoor	
5.6	Battery Container/Enclosure Dimension (length/width/height)	in	
5.7	Weight per Battery Container/Enclosure	lbs	
5.8	Galvanic Isolation	-	
6	BATTERY CONTAINER/ENCLOSURE THERMAL MANAGEMENT	-	
6.1	Startup Time (Typical/Maximum)	s	
6.2	Shutdown Time (Typical/Maximum)	s	
6.3	Estimated Planned Outages	hr/yr	
7	BATTERY CONTAINER/ENCLOSURE THERMAL MANAGEMENT	-	
7.1	Cooling Method	-	
7.2	Configuration (i.e. 2 x 100%)	-	

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BATTERY			
N°	CHARACTERISTICS	UNITS	DATA
7.3	Cooling Air Requirement	cfm	
7.4	Heating System	-	
8	WARRANTIES	-	
8.1	BESS Product Warranty Period (Required / As Bid)	yrs	10 /
8.2	BESS Performance Warranty Period (Required / As Bid)	yrs	20 /

BALANCE OF PLANT			
N°	CHARACTERISTICS	UNITS	DATA
1	COMBINER BOXES		
3.1	Rated output current	A	
3.2	Number of strings		
3.3	Permissible DC voltage	Vdc	
3.4	Protection level, according to IS Codes		
3.5	UV proof	Yes / No	
3.6	String voltage, temperature and surge protection monitoring	Yes / No	
3.7	String current monitoring	Yes / No	
3.8	Output DC switch	Yes / No	
3.9	Surge protection on DC side		
3.10	Design Ambient Temperature (min/max)	°F	
3.11	Halogen-free and self-extinguishing housing	Yes / No	
3.12	Cooling system	Yes / No	
3.13	Earthing	Yes / No	
3.14	Warranties (Required / As Bid)	yrs	2 /
3.15	Enclosure Rating		
2	CABLES		
2.1	Solar String Cable Voltage (rated/max)		
2.2	Solar String Cable Material (conductor/insulator)		
2.3	Solar String Cable Insulator Class		

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BALANCE OF PLANT			
N°	CHARACTERISTICS	UNITS	DATA
2.4	LV Cable Voltage (rated/max)		
2.5	LV Cable Material (conductor/insulator)		
2.6	LV Cable Insulator Class		
2.7	MV Cable Voltage (rated/max)		
2.8	MV Cable Material (conductor/insulator)		
2.9	MV Cable Insulator Class		
2.10	HV Cable Voltage (rated/max)		
2.11	HV Cable Material (conductor/insulator)		
2.12	HV Cable Insulator Class		
3	POWER CONVERSION AUXILIARY EQUIPMENT		
3.1	General		
3.1.1	Total number of step-up transformers per station		
3.1.2	Total number of auxiliary transformers per station		
3.1.3	Temperature range	°F	
3.1.4	Cooling System		
3.1.5	Energy consumption	W	
3.1.6	Dimensions (length/width/height)	in	
3.4	UPS		
3.4.1	Manufacturer		
3.4.2	Type/Model		
3.4.3	Rated Voltage	V	
3.4.4	Rated capacity	kVA	
3.4.5	Time Backup	hr	
3.4.6	Inverters and by pass switch redundant (2 x 100%)	Yes / No	
3.4.7	Protection class		
4	INSTRUMENTATION AND CONTROL		
4.1	Number of operator stations	Qty	
4.2	Meteorological Stations	Qty	
4.2.1	GHI Pyranometer	Qty	

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BALANCE OF PLANT			
N°	CHARACTERISTICS	UNITS	DATA
4.2.2	POA Pyranometer	Qty	
4.2.3	Ambient temperature	Qty	
4.2.4	Module temperature	Qty	
4.2.5	Wind speed (anemometer)	Qty	
4.2.6	Relative Humidity Sensor	Qty	
4.2.7	Soiling Monitoring System/Sensor	Qty	
4.2.8	Data Logger	Qty	
4.2.9	Battery Backup (required/as bid)	hr	12 /
4.2.10	Cloud sensor	Qty	
4.2.11	Other		
5	SPARE PARTS		
5.1	List all recommended initial spare parts for 25 years operation		

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PROJECT SITE ENVIRONMENTAL CHARACTERISTICS (FROM ATTACHMENT 2 TO
APPENDIX 9 OF APPENDIX B-2)

The following table details Project Site environmental data that Seller shall use for the design of the Collector Substation. Bidder is required to fill and provide all information requested in the table. If Bidder's data differs from that specified in the table, Bidder must provide Bidder's corrected data and the justification for the change.

DESCRIPTIONS	DATA (UNITS)
Elevation (substation)	
Contamination Level (light, medium, heavy, extra heavy)*	
Average Annual Temperature	
Average High Temperature	
Extreme High Temperature	
Average Low Temperature	
Extreme Low Temperature	
Average Annual Precipitation	
Maximum 24-hour Rainfall	
Maximum 1-hour Rainfall	
Maximum 24-hour Snowfall	
Ground Snow Load	
Design Ice Load	
Design Wind Speed	
Isokeraunic Level	
Seismic Referenced Code	
Mapped Spectral Response Acceleration at Short Period (0.2- Second) S_s	
Mapped Spectral Response Acceleration at 1-Second Period S_1	
Site Class	
Seismic Design Category	

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*All equipment external bushing creepage distance shall be based on this criterion. If not available, medium (35mm/kV) shall be used. This factor is applied to nominal line to ground voltage.

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