

**REPLIES TO THE PRE BID QUERIES AGAINST RFP FOR SELECTION OF EPC CONTRACTOR FOR DESIGN, ENGINEERING, SUPPLY, CONSTRUCTION, ERECTION, TESTING, COMMISSIONING OF
2.0 MW_{AC} SOLAR PV PLANT WITH 4.5MWH BATTERY ENERGY STORAGE SYSTEM HAVING 12 YEARS PLANT O&M AT PAVAGADA SOLAR PARK**

Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
2.3.6. Bid Security	26/442	<p>2.3.6.1: The Bidder shall furnish, as part of its Techno-Commercial Bid, a Bid Security in a separate sealed envelope in the amount and currency as stipulated in the RFP.</p> <p>Bids shall be accompanied by Bid Security amount of INR 49 Lakhs/- (Indian Rupees Forty Nine Lakhs) only for the capacity of 2 MWAC with 4.5 MWh BESS as follows:</p> <p>1) Upto Rs.10.00 Lakhs Government of Karnataka has selected ICICI Bank, for provision of e-payment services for e-procurement project. The following modes of payment will be provided by ICICI as a part of e-payment services.</p> <ul style="list-style-type: none"> • Credit Card/Debit Card • Net Banking • NEFT/RTGS • Over-the-Counter (OTC) • IMPS <p>For further detail regarding mode of e-payment of EMD in e-procurement platform, contact e-procurement cell, Government of Karnataka.</p> <p>2) Balance Rs.39 Lakhs in the form of Bank Guarantee covering 30 days after the validity period of the bid including period of extension, if any required by the Owner. -----</p>	<p>Kindly consider single bid security amount of total 49 lakh instead of making it in two parts. Kindly accept single bid security of total amount in the form of Bank Guarantee.</p>	<p>Clause no. 2.3.6.1 shall stand amended as follows:</p> <p>The Bidder shall furnish, as part of its Techno-Commercial Bid, a Bid Security in a separate sealed envelope in the amount and currency as stipulated in the RFP.</p> <p>Bids shall be accompanied by Bid Security amount of INR 41Lakhs/- (Indian Rupees Forty One Lakhs) only for the capacity of 2 MWAC with 4.5 MWh BESS as follows:</p> <p>1) Upto Rs.10.00 Lakhs Government of Karnataka has selected ICICI Bank, for provision of e-payment services for e-procurement project. The following modes of payment will be provided by ICICI as a part of e-payment services.</p> <ul style="list-style-type: none"> • Credit Card/Debit Card • Net Banking • NEFT/RTGS • Over-the-Counter (OTC) • IMPS <p>For further detail regarding mode of e-payment of EMD in e-procurement platform, contact e-procurement cell, Government of Karnataka.</p> <p>2) Balance Rs.31 Lakhs in the form of Bank Guarantee covering 30 days after the validity period of the bid including period of extension, if any required by the Owner. ----- It is mandatory to provide 2 BGs as</p>

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				per e-portal, GoK guidelines.
1.2.6.2. Technical Eligibility Criteria BESS QR	12/442	The Bidder should have consortium agreement/MOU with technical partner who has manufactured or supplied and installed batteries for energy storage system(s) of cumulative installed capacity of 5MWh with dispatchable capacity of 4.5MWh or higher out of which atleast one battery energy storage system should be of 3MWh capacity or higher.	To give the bidders more options in BESS QR to deploy best technology with competitive cost, kindly allow only support letter from BESS manufacturer or qualified EPCs to comply this QR.	The existing clause remains the same.
3.1. Contract and Interpretation	37/44	PV Inverter – Product warranty period of 12 (Twelve), is it a standard warranty?	PV Inverter OEM is offering only 5 years of standard warranty, kindly consider the same time period.	No change in existing RFP conditions
3.1. Contract and Interpretation	37/442	Module Mounting Structures – Product Warranty period of 22 (twenty Two); It is not as per market standard, offering the same will increase the EPC overall costing.	Kindly consider 10 Years as per market standard	No change in existing RFP conditions
3. BESS Round-trip-Efficiency	429/442	Is the RTE of BESS system is fixed in all circumstances?	As the BESS Technology is still evolving, kindly consider standard RTE =80%	No change in existing RFP conditions
3.6.2.1.2.	69/442	Is the DLP is 12 years for entire scope?	The contractor is usually obliged to repair defects that occur in the 12 to 24 months following completion of the performance testing, Kindly consider it and DLP for O&M scope shall be extended till 12 years from the SCOD.	Yes the DLP is for entire scope.
3.1.3.9. Consortium	42/442	Is only two consortium member allowed?	Kindly allow three consortium member including lead bidder.	Number of consortium members shall stand increased to 3 Nos.
3.5.6.6.1.	62/442	human accouchement or tree removal	KREDL should provide the site to contractor free from any kind of accouchement	No change in existing RFP conditions
3.6.1.1.2.	68/442	Is the construction period twelve month?	Considering the global supply chain challenges and covid pandemic ,kindly consider the construction timeline upto twenty four (24) months.	No change in existing RFP conditions
3.6.1.1.2.	68/442	Performance Liquidated Damage:	As the BESS Technology is still evolving, kindly consider the CUF Post Operational Acceptance=21% and until the expiry of O&M Period is 17%	No change in existing RFP conditions

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SectionI: Scope of work_Project Particulars	146/442	Minimum No. of cycles for BESS	In case of solar unavailability, kindly provide the source of charging of BESS system	Covered under clause no. 2H of annexure 2 of page No.428 of RFP
2.2. Grid Characteristics	253/442	The BESS shall be capable of continuous operation under variable voltage, frequency and phase imbalance conditions at the PCC.	Data required about the grid voltage, frequency and Phase imbalance to design the proper system	Grid voltage would be from 33kV to 220kV. It is to be noted that 220kV station is linked to 400kV station.
SectionI: Scope of work_Project Particulars	255/442	Charge – Discharge Cycles One discharge cycle per day is envisaged overall	charging pattern ?? in case solar power not available at any specific day or two .Than what will be consideration at that time ???	Covered under clause no. 2H of annexure 2 of page No.428 of RFP
1.2. Technical Requirements	159/442	PV Module origin	To source and deploy the best in quality PV module, kindly consider its procurement open for all countries.	MNRE Approved List of Modules and Manufactures from time to time shall be used.
Section III: technical Specification 1.	274/442	The Contractor is advised to inspect the site and study the nature of soil, topography and other conditions to decide the extent of scope of area grading, ground compaction, and foundation system to be provided before submission of the Bid	As the site is in the vicinity of already developed Solar project, kindly provide the soil survey, topography and ground water report to save the cost and time.	Bidders need to carry out topographical survey and soil tests afresh
25.2	221/442	The power evacuation system for the plant shall be as per the local DISCOM requirement and appropriate approval. The contractor shall get the route approval from the Employer prior to start of the construction.	As the power evacuation cable is underground kindly provide the detail route of already buried cable from site to Substation-4	Will be provided to the successful bidder.
3.1.1.1	146	PV Inverter-Product Warrant Period of 12 (Twelve)	Please mention its months or Years	No change in existing RFP conditions.
Section I scope of work		Battery technology	Request to include NMC technology	Lithium ion chemistry to be used as per RFP conditions.
		BESS Energy Discharge Duration (C Rate) -C/3. i.e 1.5 Hour for the BESS package of 4.5 MWh BESS (total discharge hour is 3 hrs)	Need to change total discharge hours is 2.25 hrs (0.44C)	The existing clause remains the same

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4. Power Conditioning Unit 4.3.1.	165	The rated/ name plate AC capacity of the PCU shall be AC power output of the PCU at	Bidder understand that the plant AC capacity (Inverters & Inverter duty transformer) of 2MW is at 50 Deg & UPF. Please confirm? Is there any specific conditions of temp and power factor to design AC capacity, please clarify?.	The existing clause remains the same
13. Lightning Protection System 13.2.	186	Protection level for the entire plant shall be Level-III.	Bidder propose Level -IV (107mtr protection radius) ESE type lightning protection system form PV plant, Inverter station and Control room. Please confirm?.	Minimum protection level prescribed in level III.
5. Inverter Transformer and Auxiliary Transformer 5.3	169	Construction	Please clarify the winding material of Inverter Duty transformer.	Copper
Project Particulars	146		Please provide the Autocad layout along with Contour For Better Understanding of Site conditions.	Bidders need to carry out topographical survey and soil tests afresh.
5. Hot Commissioning	389	5.3. SINGLE AXIS TRACKER AVAILABILITY	Please clarify the Height of the tracker from ground when tracker is at zero deg tracking angle.	As per the terms of the RFP conditions.
6. Roads	226	6.2. The Approach road connecting nearest parkroad and the Main gate shall be of 4.0m wide carriage way with 0.5m wide shoulders on either side. The access road connecting Main gate and MCR and internal access road(s) connecting MCR to various facilities/ buildings/ open Installations shall be of 3.0m wide carriage way with 0.5m wide shoulders on either side while the peripheral road shall be of 2.5m wide carriage way with 0.5m shoulders on either side.	Bidder requesting you to specify the type of road to be considered for Internal roads	Approach Road: Cement Concrete road Internal access Roads: Macadam
NA	NA	AC CUF with year wise degradation is not mentioned	As mentioned in 3.6.1.1.2, AC CUF is subjected to penalty, the year wise degradation is needed	Degradation factor for solar PV modules, BESS system and RTE has been covered in Section 1 Scope of work. Attachment 10 captioned "target generation from Solar and BESS System" of notified RFP shall stand deleted.
NA	NA	Year wise BESS degradation as per the excel sheet is irregular	Standard BESS degradation is 3% for first three years and 1.5% for another 9 years as per the document page no. 147	
NA	NA	Round trip efficiency is given only 75% as per the excel sheet	As mentioned in Page No. 428, RTE is subjected to penalty, the given RTE input is to be reconsidered.	

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NA	NA	Civil drawing is not available		Design for Civil drawing for control room will be approved by the KREDL upon submission by the successful bidder.
1.2.6.2.3 b	13	Facilities executed by Bidder's Group Company, Holding Company, Subsidiary Company or Affiliate under the same management as defined in Companies Act, 1956/ 2013	Like financial eligibility criteria, parent company credentials are to be taken for technical eligibility criteria also.	Yes. The Notes provided under clause No. 1.2.6.2.3 addresses the query.
1.2.6.2.1	12	Technical partner criteria for BESS	The technical partner criteria is required for BESS as only fewer installations are done as on date in India as it is emerging sunrise sector. Hence, global installations of technical partner are to be accepted for qualification requirement purpose. However global partner should have an authorized product partner in India for installation and maintenance and comprehensive O&M	As the provision provides for supply and installation of batteries globally, It is suggested to incorporate the following clause after clause no. 1.2.6.2.1. "In case of technical partner being a foreign company, they should set up authorized battery service center in India within one year from date of issue of LOA for carrying out O&M of the project. Supporting documentary proof needs to be attached. However, the Lead Bidder should be an Indian Company.
1.2.6.2.2	13	Technical partner criteria for Solar	The technical partner installed projects of cumulative installed capacity of not less than 2MWAC, out of which one project should be a minimum of 1.5MW or above at single location for public or /Government or private client in India only.	No change in the existing clause.

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
3.6.1.1.2	68	<p>Post Operational Acceptance and until the expiry of O&M Period, the Bidder shall meet the generation equivalent to minimum AC CUF for 21% (Twenty One percent). In case Bidder is not able meet the minimum AC CUF of 21% (Twenty One percent), then the Bidder shall be liable to pay a liquidated damage to compensate for the energy loss during the yearly O&M Period (“Performance Liquidated Damages”).</p> <p>Performance Liquidated Damages = Loss in Energy during O&M Period for a year as per CUF target of 21.0% (Twenty One percent) x22 INR per kWh</p>	<p>Post Operational Acceptance and until the expiry of O&M Period, the Bidder shall meet the generation equivalent to minimum AC CUF for 21% (Twenty One percent). In case Bidder is not able meet the minimum AC CUF of 21% (Twenty One percent), then the Bidder shall be liable to pay a liquidated damage to compensate for the energy loss during the yearly O&M Period (“Performance Liquidated Damages”).</p> <p>Performance Liquidated Damages = Loss in Energy during O&M Period for a year as per CUF target of 21.0% (Twenty One percent) x10 INR per kWh</p>	No change in the existing clause.
3.6.2.1.7	69	<p>If the Contractor fails to commence and complete the work necessary to remedy such defect or any damage to the Facilities caused by such defect within a reasonable time of 48 (forty-eight) hours or may be extended based on the justification provided by the Contractor and at the discretion of KREDL. In case if the contractor fails to rectify the defect within said period of 48 hours, the contractor shall be penalized @ Rs.25,000/per day per MW subject to maximum of 1 month beyond which, the contractor is liable of penalty payment of Rs.1,25,000/- per MW Per day</p>	<p>If the Contractor fails to commence and complete the work necessary to remedy such defect or any damage to the Facilities caused by such defect within a reasonable time of 48 (forty-eight) hours or may be extended based on the justification provided by the Contractor and at the discretion of KREDL. In case if the contractor fails to rectify the defect within said period of 48 hours, the contractor shall be penalized @ Rs.5,000/per day per MWac subject to maximum of 1 month beyond which, the contractor is liable of penalty payment of Rs.10,000/- per MWac Per day. Penalty is too high for the size of the project</p>	No. change in the existing clause.
Attachment 5(f)	105	<p>Proforma of certificate from the CEO/CFO, If applicable in accordance with item as per detailed NIT clause 1.2.7.3</p>	The clause is not available in the rfp document	The clause No mentioned in the header of attachment 5(f) shall stand replaced with clause No. 1.2.6.3.8 instead of 1.2.7.3
1.2	159	<p>Technical requirements Origin - Modules shall be domestically manufactured</p>	<p>Cost economy is achieved in Non-DCR than DCR. Preference to make in India but not mandatory.</p>	MNRE Approved List of Modules and Manufactures from time to time shall be used.

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1.2	160	The PV Modules Supplier should have supplied minimum 2MW capacity globally or 2.5 MW in India in the past 5 years (as on last date of Bid submission). The PV Module supplier shall be Class-I local supplier as per MNRE Order dated 23rd Sep, 2020 and its amendments from time to time on Public Procurement (Preference to Make in India) to provide for Purchase Preference (linked with local content) in respect of Renewable Energy (RE) Sector	With technical QR, the supplier qualifying criteria is not matched. As QR is already mentioned in eligibility criteria, this clause can be omitted.	Original clause No. 1.3 page No. 160 stands deleted.
2.3	252-254	IEC 61427- 2/IS - 16270 Secondary cells and batteries for renewable energy storage for On grid applications - General requirements and methods of test	Equivalent standards also to be considered	Standards and Codes for BESS shall be as applicable as per MOP guidelines from time to time.
2.3		IEC 62485-2 - Safety requirements for secondary batteries and battery installations - to meet requirements on safety aspects associated with the erection, use, inspection, maintenance and disposal: Applicable for Lead Acid and NiCd / NiMH batteries	Not Applicable since the technology is Li-ion.	
2.3		UL 9540 or (IEC TS 62933-5-1 + IEC 62933-5- 2 - Electrical energy storage (EES) systems - Part 5-1: Safety considerations for grid-integrated EES systems – General specification / Standard for Energy Storage Systems and Equipment	Equivalent standards also to be considered	
4.6	257	If the Plane of Array solar irradiation/insolation is less than 2kWh/m2 on a day, the day (i.e. 24 hours) shall be excluded.	Annual global irradiation is 1948KWh/m2/year and 5.33KWH/m2/day. So, 2KWh/m2 represents only 37% absence of daily irradiation is considered. Proposed to 56% which equal to 3KWh/m2/day.	No change in the existing clause.
4.9	260	IEC 61683 Ed. 1 - Photovoltaic systems - Power conditioners - Procedure for measuring efficiency	Not applicable for PCS	No change in the existing clause.
NA	383	For every 0.01 shortfall in PR below the committed PR value, a penalty of 1% of the total Contract Value (i.e., total sum of all the Supply, Service and absolute value of O & M Contract) shall be levied. In case the Contract Performance Security has already been encashed on account of any default/delays, the penalty amount will be recovered from any due payments to the contractor. The plant shall only be accepted by KREDL on demonstration of committed PR value by the contractor post rectifying the PR shortfalls	As CUF and PR is interlinked, Additional penalty shall be removed.	No change in the existing clause.

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
		noted during the PR test.		
NA	428	<p>I. Liquidated Damages for Shortfall in Equipment Availability If the annual equipment availability for BESS is less than 100 during any year, then Contractor shall compensate the Employer an amount calculated as per the following formula.</p> $COM = (100-EA)/EA \times C \times E$ <p>where, COM is Compensation payable to the Employer in Indian rupees EA is Annual BESS Equipment Availability C is INR 22/kWh E is the intended energy output from BESS in kWh during the respective year in guaranteed availability condition.</p>	Penalty is too high for the size of the project	No change in the existing clause.
NA	429	<p>b. Liquidated Damages for Shortfall in Round-trip-Efficiency, if the annual Round-trip-Efficiency for BESS is less than committed value during any year, then Contractor shall compensate the Employer an amount calculated as per the following formula.</p> $COM(RTE) = (85\%-RTE \text{ actual}) \times \text{Energy input to the BESS} \times C$ <p>where, COM is Compensation payable to the Employer in Indian rupees RTE actual is Annual BESS Round-trip-Efficiency achieved(%) Energy input to the BESS is sum of Energy input to the BESS over n cycles in a year (kWh) E is the intended energy output from BESS in kWh during the respective year in guaranteed availability condition. C is INR 22/kWh</p>	Penalty is too high for the size of the project	No change in the existing clause.

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
1.2.6.2.3	13/442	<p>We are a solar EPC Contractor. we have Class -I Electrical Licences in the state of Odisha and Madhya Pradesh</p> <p>We had completed the 100 MW Solar Project in kamuthi, Tamilnadu and construction of 33 kV electrical Substation through our sub –contractors</p> <p>Bidder request you to kindly confirm, whether we are eligible to participate in this clause.</p>		The Bidder has to follow the RFP terms
1.2.6.2.3	13/442	<p>Bidder Request you to amendment the clause as per below: Bidder have executed at least one (1) Electrical Sub-station of minimum 33kV voltage level, consisting of Equipments such as 33kV or above voltage level circuit breakers and power transformer, either as developer or as Contractor. In addition, the bidder/contractor should have required QMS certifications like ISO 9001:2015 and ISO 14001:2015.</p>		The Bidder has to follow the RFP terms
1.2.6.2.3	13/442	<p>Please allow the bidder to participate in this tender using the transmission Substation QR of parent/ holding company</p>		<p>Transmission Substation QR clause no. 1.2.6.2.3 shall stand amended as follows;</p> <p>The bidder or his consortium partner should have MOU with government approved Super Grade License/Class I license and have executed at least one (1) Electrical Sub-station of minimum 33kV voltage level, consisting of equipments such as 33kV or above voltage level circuit breakers and power transformer, either as developer or as Contractor. In addition, the bidder/contractor should have required QMS certifications like ISO 9001:2015 and ISO 14001:2015.</p>
1.2.6.2.2	13/442	<p>Please allow the bidder to participate in this tender using the Solar QR of parent/ holding company</p>		Please refer notes provided to Technical QR

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1.2.6.2 Sub Clause (1.2.6.2.1)	12	We will submit the MOU with Technical partner who manufactured and installed BESS of 5MW capacity. But they are not consortium partner Our other consortium partner is one who executed EPC of 10MW solar utility scale projects We hope this arrangement satisfy Technical eligibility criteria.	Please accept MOU from BESS partner and consortium with two members OR Allow Consortium of three partners	Number of Consortium members shall stand increased to 3.
1.2.6.2 Sub Clause (1.2.6.2.3)	13	Our EPC partner is one executed two numbers of 33KV sub-station for Solar plant. They hold QMS certification of ISO9001:2015 and ISO 14001:2015. We will also be involving Grade-I Electrical contractor registered with BESCO / KREDL while executing this work. Please accept this arrangement as part of Technical eligibility criteria.	EPC experience of having executed work at 33KV level may be considered good to execute this work	The Bidder has to follow the RFP terms
4.3 Tech requirements	165	We request you to standardize on one particular topology like String or Central. MNRE approved ones are limited in numbers for this scale of capacity	Central Inverter is most suitable for this application. Price implication is severe if left to bidders	Original clause is not subject to any change
3.1 Table 2	255	How many cycles (Charge/discharge) per year from BESS		1 cycle as per RFP terms
		Lead time for the supply, installation and commissioning of the project		12 Months from the date of signing the contract agreement
		Whether reverse auction is going to happen after opening the price bid		No.
		Do of battery bank should be limited to maximum 70% considering 12 years O&M		Bidders are obligated to perform as per the RFP conditions
Clause b	399	Battery round trip efficiency shall be accepted with 85%		Bidders are obligated to perform as per the RFP conditions
		Modbus TCP/IP OR Modbus RTU is acceptable for SCADA		The SCADA system of the bidder should match with the SCADA provided by KSPDCL in 220/33kV substation no. 4.

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		Battery VDC should be high. As per the tender it is mentioned 220V OR 110V		Bidders are obligated to perform as per the RFP conditions i.e. 110V
		Battery charger should be CCCV in case of Li-Ion		The Battery charging should be as per standard procedure.
		Please specify the desired permits & licenses		Bidders are obligated to perform as per the RFP conditions duly obtaining necessary permits & licenses as required under the prevailing regulations from time to time.
1.2.6.1.1	9	Is it mandate that the MOA and AOA shall highlight the provisions relating to construction or generation or sale of power/energy/ renewable energy/ solar PV plant development		Yes
		5 MWAC with 5MW/16 MWh BESS is the usable capacity hence the ultimate capacity shall be higher in any case consider DOD, DC Loses, Temperature Factor, Ageing Factor, Efficiency of PV Modules, Inverters, Battery, PCS etc		Please refer the revised RFP dated 05-12-2022
		Amount of Bid Security: INR 63,57,300/- (Indian Rupees Sixty three lakhs fifty seven thousand three hundred) only for the capacity of 5 MWAC with 5 MW/16 MWh BESS is fix or may change due to enhancement in sizing of the desired system		Please refer the revised RFP dated 05-12-2022
1.2.6.2.1	12	We request you to amend the same to 4MW, operational for more than 12months.		Please refer the revised RFP dated 05-12-2022
1.2.6.2.1	12	We request you to amend the same as 5MW to be operational for a month as on biding date		Please refer the revised RFP dated 05-12-2022
3.1.3.9	42	Please allow us to participate with a MOU of Super Grade Electrical contractor or permit to increase the consortium partner to three		Number of Consortium members shall stand increased to 3.
1.2.6.3	14	As the Financial Year 2021-2022 is over, hence request to consider the average annual turnover till FY 2021-2022.		No change in the existing clause

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		We will provide Provisional Balance sheet for the year ending 2021-22		No change in the existing clause
2.3.6 - Bid Security,	Page No. 26-27	We request you to please change this clause as Bid Security Amount INR 49 Lakh made in the form of Bank Guarantee.		Bid Security amount shall stand revised to Rs. 41 Lakhs.
2.3.6 - Bid Security,	Page No. 40	Ideally it is 10 years & relate to wind speed of 150km/H. So here we request you to please change this clause as Module Mounting Structures Product Warranty period of 10 (ten) years		No change in the existing clause
3.3 – Payment Terms	Page No. 51	We request you to please give brief about the Payment terms		Payment terms are as per the RFP conditions
Clause No. 1.2.2 Scope of work	Page No.7	Please confirm whether its single Inverter of multiple of KW as per site?		Bidders are obligated to perform as per the RFP conditions duly assessing the site conditions
Performance Liquidated Damage	Page No. 68	We request you to please minimize the rate of liquidated damages.		No change in the existing clause
Warranties	Page No. 40,	Actual Standard warranty is 5 years & AMC can be taken above 5 years. So, we request you to please change the warranty is 5 years instead of 12 years.		No change in the existing clause
1.2.6.2.1		Single battery storage system of 3MWh		No change in the existing clause
1.2.6.2.3:		The license mentioned is not available, as a part of solar power plant we have installed 11kv and modified substations up to 110kV		No change in the existing clause
		Being gover. Of Kerala undertaking we request to exempt us from EMD to be paid (Rs. 49.Laksh)		No change in the existing clause

**REPLIES TO THE PRE BID QUERIES AGAINST RFP FOR SELECTION OF EPC CONTRACTOR FOR DESIGN, ENGINEERING, SUPPLY, CONSTRUCTION, ERECTION, TESTING, COMMISSIONING OF
2.0 MW_{AC} SOLAR PV PLANT WITH 4.5MWH BATTERY ENERGY STORAGE SYSTEM HAVING 12 YEARS PLANT O&M AT PAVAGADA SOLAR PARK**

Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
		<p>Technical Eligibility Criteria for BESS & Solar - The reference battery energy storage system of 3MWh & 1.5MWAC or higher capacity must have been in successful operation for at least 12 months prior to the date of techno commercial bid submission. To be relaxed as follows.</p> <p>The reference battery energy storage system of 3MWh & 1.5MWAC or higher capacity must have been in successful operation for at least 6 months prior to the date of techno commercial bid submission.</p>		No change in the existing clause
		Kindly confirm that the BESS reference plant located outside India shall be considered.		As the provision provides for supply and installation of batteries globally, It is suggested to incorporate the following clause after clause no. 1.2.6.2.1.
		The Technical partner BESS with whom we shall have a MOU be company incorporated not under the laws of India & incorporated		<p>"In case of technical partner being a foreign company, they should set up authorized battery service center in India within one year from date of issue of LOA for carrying out O&M of the project. Supporting documentary proof needs to be attached.</p> <p>However, the Lead Bidder should be an Indian Company.</p>
			In Project particulars: Design life for PV Systems separate as 25 years and the design life for the BESS as 15 years.	<p>Design life for PV Systems: 25 years.</p> <p>Design life for the BESS: 12 years.</p>
Section 1 Scope of Work	Page 146	<p>Project particulars</p> <p>Design life of PV power plant and BESS - 25 years</p>		<p>Project particulars</p> <p>Design life of PV power plant - 25 years</p> <p>Design life of BESS - 12 years</p>

**REPLIES TO THE PRE BID QUERIES AGAINST RFP FOR SELECTION OF EPC CONTRACTOR FOR DESIGN, ENGINEERING, SUPPLY, CONSTRUCTION, ERECTION, TESTING, COMMISSIONING OF
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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
			Allowing Consortium three parties instead of two parties, kindly do incorporate this suggestion without fail, so that small players like us can be part of the bidding process & more participation come with the best reliable solutions and competitiveness can bring in the project	Number of Consortium members shall stand increased to 3.
			Considered the foreign based BESS equipment's supplier financial credentials for fulfilling the Financial QR, so that small players like us also can participate in the bidding process	Number of Consortium members shall stand increased to 3.
			Consider the Financial QR relaxation for substantial percentage, so that more participation come in the bidding process	Financial QR shall stand amended.
1.2.6.12 Amount put tender	18	Amount put to tender: Rs.48.07/- crores (Indian Rupees Forty Eight Crores seven lakhs only) including GST, freight charges, insurance and NPV of 12 years plant O&M etc.,		Amount put to tender: Rs.40.5912/- crores (Indian Rupees Forty Crores Fifty Nine lakhs and Twelve Thousand only) including GST, freight charges, insurance and NPV of 12 years plant O&M etc.,
1.2.6.3 Annual Turnover	14	Financial Eligibility Criteria: 1.2.6.3.1 The average annual turnover of the Bidder, should not be less than "Rs.96 Crores (Indian Rupees Ninety Six Crores only)" during any two (2) FYs out of the preceding five (5) FYs viz. from FY 2017-18 until FY 2021-22. Other income shall not be considered for arriving at calculation of average annual turnover.		Financial Eligibility Criteria: 1.2.6.3.1 The average annual turnover of the Bidder, should not be less than "Rs.82 Crores (Indian Rupees Eighty Two Crores only)" during any two (2) FYs out of the preceding five (5) FYs viz. from FY 2017-18 until FY 2021-22. Other income shall not be considered for arriving at calculation of average annual turnover.
Attachment 5 (b) Annual Turnover	100	In terms of Detailed NIT Clause no. 1.2.6.3, we confirm that the average annual turnover of the Bidder, is not be less than "Rs.96/- Crores (Indian Rupees Ninety Six crores only)" during any two (2) FYs out of the preceding five (5) FYs viz. from FY 2017-18 until FY 2021-22.		In terms of Detailed NIT Clause no. 1.2.6.3, we confirm that the average annual turnover of the Bidder, is not be less than "Rs.82/- Crores (Indian Rupees Eighty Two crores only)" during any two (2) FYs out of the

**REPLIES TO THE PRE BID QUERIES AGAINST RFP FOR SELECTION OF EPC CONTRACTOR FOR DESIGN, ENGINEERING, SUPPLY, CONSTRUCTION, ERECTION, TESTING, COMMISSIONING OF
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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
				preceding five (5) FYs viz. from FY 2017-18 until FY 2021-22.
1.2.6.3.4 Net worth	15	The Net Worth of the Bidder as on the last day of the preceding financial year FY 2021-22 should not be less than one hundred percent (100%) of the Bidder's paid up share capital, subject to a minimum of INR 14 Crores per annum.		The Net Worth of the Bidder as on the last day of the preceding financial year FY 2021-22 should not be less than one hundred percent (100%) of the Bidder's paid up share capital, subject to a minimum of INR 12 Crores per annum.
Attachment 5 (c) Net worth	101	We hereby confirm that net worth of our company as on the last day of the preceding Financial Year/ Calendar Year FY 2021-22 is not less than 100% (one hundred percent) of its paid-up share capital, subject to a minimum of INR 14 Crores per annum.		We hereby confirm that net worth of our company as on the last day of the preceding Financial Year/ Calendar Year FY 2021-22 is not less than 100% (one hundred percent) of its paid-up share capital, subject to a minimum of INR 12 Crores per annum.
1.2.6.2.1	12	BESS QR: The Bidder should have consortium agreement/MOU with technical partner who has manufactured or supplied and installed batteries for energy storage system(s) of cumulative installed capacity of 5MWh with dispatchable capacity of 4.5MWh or higher out of which atleast one battery energy storage system should be of 3MWh capacity or higher. The reference battery energy storage system of 3MWh or higher capacity must have been in successful operation for atleast 12 months prior to the date of techno commercial bid submission. The bidder should upload the consortium agreement/MOU and submit the hard copy of the original MOU before the bid opening date.	The Bidder should have consortium agreement/MOU with technical partner who has manufactured or supplied and installed batteries or have done the integration for energy storage system(s) of cumulative installed capacity of 5MWh with dispatchable capacity of 4.5MWh or higher out of which atleast one battery energy storage system should be of 3MWh capacity or higher. The reference battery energy storage system of 3MWh or higher capacity must have been in successful operation for atleast 12 months prior to the date of techno commercial bid submission. The bidder should upload the consortium agreement/MOU and submit the hard copy of the original MOU before the bid opening date.	No change in the existing clause
3.6.1.1.2	68	Performance Liquidated Damages = Loss in Energy during O&M Period for a year as per CUF target of 21.0% (Twenty One percent) x22 INR per kWh	Kindly share the calculation of energy price at which LD is being charged.	Based on market rates
3.6.2.1.2	69	The Defect Liability Period shall be twelve (12) Years from	The Defect Liability Period shall be twelve (12)	No change in the existing clause

REPLIES TO THE PRE BID QUERIES AGAINST RFP FOR SELECTION OF EPC CONTRACTOR FOR DESIGN, ENGINEERING, SUPPLY, CONSTRUCTION, ERECTION, TESTING, COMMISSIONING OF 2.0 MW_{AC} SOLAR PV PLANT WITH 4.5MWH BATTERY ENERGY STORAGE SYSTEM HAVING 12 YEARS PLANT O&M AT PAVAGADA SOLAR PARK

Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale										
		the date of Operational Acceptance of the Facilities	Months from the date of Operational Acceptance of the Facilities											
3. BESS Round-trip-Efficiency	429	<p>Liquidated Damages for Shortfall in Round-trip-Efficiency, if the annual Round-trip-Efficiency for BESS is less than committed value during any year, then Contractor shall compensate the Employer an amount calculated as per the following formula.</p> <p>COM(RTE) = (85%-RTE actual) x Energy input to the BESS x C</p>	<p>Kindly share the calculation of energy price at which LD is being charged. It should not be more than APPC charges of state.</p>	Based on market rates										
Appendix 1	120	<p>Plant and Equipment (Module, BESS, Inverter, Balance of Plant and Equipment) and Mandatory Spares</p> <table border="1"> <thead> <tr> <th>Payment milestone</th> <th>Payment Terms</th> </tr> </thead> <tbody> <tr> <td>On receipt of material at Site as a part of the Plant and Equipment subject to inspection and certification by the Facilities Manager/ Third Party consultant appointed by KREDL</td> <td>50% (fifty percent) of Basic Price of the material(Part A+ Part B+ Part C of SOR-1(Price)) + 100% of the Tax</td> </tr> <tr> <td>On achievement of Installation Services and Pre-Commissioning Testing of Plant and Equipment of relevant MW certified and witnessed by KREDL KPTCL, KSPDCL or any other applicable authority (as applicable)</td> <td>30% (thirty percent) of Basic Price of the material (Part A+ Part B+ Part C of SOR-1(Price))</td> </tr> <tr> <td>On Operational Acceptance by KREDL and issuance of Operational Acceptance certificate provided by KREDL, KPTCL, KSPDCL (as applicable)</td> <td>10% (ten percent) of Basic Price of the material(Part A+ Part B+ Part C of SOR-1(Price))</td> </tr> <tr> <td>One (1) Year after the date of Operational Acceptance</td> <td>10% (ten percent) of Basic Price of the material(Part A+ Part B+ Part C</td> </tr> </tbody> </table>	Payment milestone	Payment Terms	On receipt of material at Site as a part of the Plant and Equipment subject to inspection and certification by the Facilities Manager/ Third Party consultant appointed by KREDL	50% (fifty percent) of Basic Price of the material(Part A+ Part B+ Part C of SOR-1(Price)) + 100% of the Tax	On achievement of Installation Services and Pre-Commissioning Testing of Plant and Equipment of relevant MW certified and witnessed by KREDL KPTCL, KSPDCL or any other applicable authority (as applicable)	30% (thirty percent) of Basic Price of the material (Part A+ Part B+ Part C of SOR-1(Price))	On Operational Acceptance by KREDL and issuance of Operational Acceptance certificate provided by KREDL, KPTCL, KSPDCL (as applicable)	10% (ten percent) of Basic Price of the material(Part A+ Part B+ Part C of SOR-1(Price))	One (1) Year after the date of Operational Acceptance	10% (ten percent) of Basic Price of the material(Part A+ Part B+ Part C	<p>We suggest the following payment terms:</p> <p>A. On Plant and Equipment</p> <ol style="list-style-type: none"> 1) 10% against As Advance Payment on: <ol style="list-style-type: none"> (a) Acceptance of Notification of Award and Signing of the Contract Agreement b) Submission of unconditional Bank Guarantees towards Contract Performance Securities in respect of all Contracts. c) Submission of a detailed PERT Network 2) 60% upon dispatch of equipment from manufacturer's works on pro-rata basis through L/C 3) 20% on receipt of equipment at site on pro-rata basis 4) 5% on successful commissioning 5) 5% On operational acceptance <p>B. Installation & Civil Services</p> <ol style="list-style-type: none"> 1) 10% against As Advance Payment on: <ol style="list-style-type: none"> (a) Establishing their office at site in preparatory to commencement of Civil works b) Acceptance of Notification of Award and Signing of Contract Agreement c) Submission of unconditional Bank Guarantees towards Contract Performance Securities 2. 80% On pro-rata basis on completion of installation & Civil Works of equipment's on project manager certification 	As per RFP terms.
Payment milestone	Payment Terms													
On receipt of material at Site as a part of the Plant and Equipment subject to inspection and certification by the Facilities Manager/ Third Party consultant appointed by KREDL	50% (fifty percent) of Basic Price of the material(Part A+ Part B+ Part C of SOR-1(Price)) + 100% of the Tax													
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On Operational Acceptance by KREDL and issuance of Operational Acceptance certificate provided by KREDL, KPTCL, KSPDCL (as applicable)	10% (ten percent) of Basic Price of the material(Part A+ Part B+ Part C of SOR-1(Price))													
One (1) Year after the date of Operational Acceptance	10% (ten percent) of Basic Price of the material(Part A+ Part B+ Part C													

REPLIES TO THE PRE BID QUERIES AGAINST RFP FOR SELECTION OF EPC CONTRACTOR FOR DESIGN, ENGINEERING, SUPPLY, CONSTRUCTION, ERECTION, TESTING, COMMISSIONING OF 2.0 MW_{AC} SOLAR PV PLANT WITH 4.5MWH BATTERY ENERGY STORAGE SYSTEM HAVING 12 YEARS PLANT O&M AT PAVAGADA SOLAR PARK

Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale								
		<table border="1"> <tr> <td></td> <td>of SOR-1(Price))</td> </tr> <tr> <td>Payment of Mandatory Spares after Commissioning and prior Operational Acceptance by KREDL supported by the certification from KREDL/ Third Party consultant appointed by KREDL (as applicable)</td> <td>100% (one hundred percent) of Basic Price of the material (Part A+ Part B+ Part C of SOR-1(Price)) + 100% of the Tax for the receipt of material at Site as a part of Mandatory Spares</td> </tr> </table>		of SOR-1(Price))	Payment of Mandatory Spares after Commissioning and prior Operational Acceptance by KREDL supported by the certification from KREDL/ Third Party consultant appointed by KREDL (as applicable)	100% (one hundred percent) of Basic Price of the material (Part A+ Part B+ Part C of SOR-1(Price)) + 100% of the Tax for the receipt of material at Site as a part of Mandatory Spares	<p>4. 5% on successful commissioning 5. 5% On operational acceptance We request you to please consider 10% of advance payment as well to contractor. 10% of amount to be released after 1 year after operational acceptances is not reasonable as contractor will be giving Contract performance security & O&M security also for this time duration. Also as per standard practice followed by the bidding companies, complete amount of contract shall be cleared at operational acceptance.</p>					
	of SOR-1(Price))											
Payment of Mandatory Spares after Commissioning and prior Operational Acceptance by KREDL supported by the certification from KREDL/ Third Party consultant appointed by KREDL (as applicable)	100% (one hundred percent) of Basic Price of the material (Part A+ Part B+ Part C of SOR-1(Price)) + 100% of the Tax for the receipt of material at Site as a part of Mandatory Spares											
		<p>B. Installation Services</p> <table border="1"> <thead> <tr> <th>Payment milestone</th> <th>Payment Terms</th> </tr> </thead> <tbody> <tr> <td>On achievement of Installation Services and Testing of Plant and Equipment of relevant MW certified by KREDL</td> <td>60% (sixty percent) of Basic Price (Part D+ Part E+ Part F of SOR-1 (Price)) of the completed works as a part of Installation Services (Services and Civil) + 100% of the Tax for the completed the works as a part of Installation Services (Services and Civil)</td> </tr> <tr> <td>On Operational Acceptance by KREDL and issuance of Operational Acceptance certificate provided by KREDL, KPTCL, KSPDCL (as applicable)</td> <td>20% (twenty percent) of Basic Price (Part D+ Part E+ Part F of SOR-1 (Price)) of the completed works as a part of Installation Services (Services and Civil)</td> </tr> <tr> <td>One (1) Year after the date of Operational Acceptance</td> <td>20% (twenty percent) of Basic Price (Part D+ Part E+ Part F of SOR-1(Price)) of the completed works as</td> </tr> </tbody> </table>	Payment milestone	Payment Terms	On achievement of Installation Services and Testing of Plant and Equipment of relevant MW certified by KREDL	60% (sixty percent) of Basic Price (Part D+ Part E+ Part F of SOR-1 (Price)) of the completed works as a part of Installation Services (Services and Civil) + 100% of the Tax for the completed the works as a part of Installation Services (Services and Civil)	On Operational Acceptance by KREDL and issuance of Operational Acceptance certificate provided by KREDL, KPTCL, KSPDCL (as applicable)	20% (twenty percent) of Basic Price (Part D+ Part E+ Part F of SOR-1 (Price)) of the completed works as a part of Installation Services (Services and Civil)	One (1) Year after the date of Operational Acceptance	20% (twenty percent) of Basic Price (Part D+ Part E+ Part F of SOR-1(Price)) of the completed works as		
Payment milestone	Payment Terms											
On achievement of Installation Services and Testing of Plant and Equipment of relevant MW certified by KREDL	60% (sixty percent) of Basic Price (Part D+ Part E+ Part F of SOR-1 (Price)) of the completed works as a part of Installation Services (Services and Civil) + 100% of the Tax for the completed the works as a part of Installation Services (Services and Civil)											
On Operational Acceptance by KREDL and issuance of Operational Acceptance certificate provided by KREDL, KPTCL, KSPDCL (as applicable)	20% (twenty percent) of Basic Price (Part D+ Part E+ Part F of SOR-1 (Price)) of the completed works as a part of Installation Services (Services and Civil)											
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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
			a part of Installation Services (Services and Civil)	
4.1	122	Due Dates for Payment :KREDL will make payment within 45 (forty five) Days from the date of receipt of invoice in complete respect.	Due Dates for Payment: KREDL will make payment within 15 (Fifteen) Days from the date of receipt of invoice in complete respect.	No change in the existing clause.
2. BESS Availability Sub Clause I.	428	Liquidated Damages for Shortfall in Equipment Availability If the annual equipment availability for BESS is less than 100 during any year, then Contractor shall compensate the Employer an amount calculated as per the following formula. COM = (100-EA)/EA x C x E	Liquidated Damages for Shortfall in Equipment Availability If the annual equipment availability for BESS is less than 100 during any year, then Contractor shall compensate the Employer an amount calculated as per the following formula. COM = (95-EA)/EA x C x E Since Availability is required 95%	No change in the existing clause.
VOLUME-I 1. Section I: Notice Inviting Tender (NIT) Clane No. 1.2. Detailed NIT Sub Clause No. 1.2.2. Brief scope of work:	7 / 442 of RFS	"...2MW (AC) Grid Interactive Solar PV Power Plant with (2.2MWp DC) along with 4.5 MWh Battery Energy Storage System (BESS)..." 1. Earth Resistivity Report.		This is part of the bidder's scope
VOLUME-I 1. Section I: Notice Inviting Tender (NIT) Clane No. 1.2. Detailed NIT Sub Clause No. 1.2.2.2	7 / 442 of RFS	"...single circuit 33 kV underground cables including provision of any cable tray support structures along the road side from the solar plant with BESS to the 220/ 33 kV KSPDCL pooling substation..." 1. Whether 33 kV Cable is underground or aboveground. 2. How Many Road Crossings to be considered. 3. At road Crossings, Cable will be laid through Hume Pipe or above Ground through Bridge. 4. As the Cable will be laid within the Boundary, Right of way to be arranged by KREDL only.		1. 33kV cable is underground. 2. Only the road needs to be crossed with Hume pipes. 3. ROW for cable laying will be facilitated by KSPDCL.

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
VOLUME-I 1. Section I: Notice Inviting Tender (NIT) Clane No. 1.2. Detailed NIT Sub Clause No. 1.2.2.3	7 / 442 of RFS	"Supply of components with respect to termination of UG cable at 220/33Kv substation along with laying of 33kv UG cable for 1.5KMs from plant to existing 33kv Terminal Bay by adding additional 33 KV bay with metering at 220/33kV Sub- station No. 04, KSPDCL, Pavagada Solar Park." Kindly explain whether Bay shall be constructed by Bidder at KSPDCL Substation.		Terminal bay is under the scope of KREDL. However, the bidder has to supply, erect & commission the metering CTs, PTs and metering cubical of class 0.2S with associated works.
VOLUME-II 1. Section I: Scope of Work Origin of manufacturer for Solar PV modules	146/442 of RFS	Sourcing from Approved List of Models & Manufacturers (ALMM) as per MNRE or as per the minimum technical specification for Solar PV plant asset out by the MNRE as applicable. 1. Please confirm, Imported modules are allowed ?		Approved List of Models & Manufacturers (ALMM) as per MNRE guidelines from to time shall be used.
VOLUME-II 1. Section I: Scope of Work BESS Energy Discharge Duration (C Rate)	146/442 of RFS	C/3. i.e 1.5 Hour for the BESS package of 4.5 MWh BESS (total discharge hour is 3 hrs) 1. Please clarify, if only single discharge cycle or more than that will be required in a day. Also kindly confirm incase of more than one discharge cycle, discharge cycles will be consecutive or in different time slots.		One cycle per day as per RFP terms.
VOLUME-II 1. Section I: Scope of Work Project Particulars Electrical Interconnection Details	147 / 442 of RFS	"S-4 Substation (220 kV/33kV)" Please provide following details of S-6 Substation (220 kV/33 kV): 1. Single Line Diagram including Metering & Protection. 2. General Arrangement Layout. 3. List of Existing Infrastructure to be Provided for the Proposed 33 kV Bay. a) Auxiliary Power Supply (Normal and Critical) b) Lighting, Lightning and Earthing Infrastructure. c) Power and Control Cable Trench d) Existing Main Control Room Layout. 4. List of Existing Equipment to have common Inventory of Spares. 5. Earth Resistivity Report. 6. location Coordinates of S-4 Substation.		Will be provided to successful bidder. Prospective bidders are encouraged to arrange for site visit before quoting.

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
VOLUME-II 1. Section I: Scope of Work Proposed generation criteria for the Project	147/442 of RFS	21% AC CUF Kindly clarify 1. this is for 1st year or for remaining years ? 2. What is the positive/ negative tolerance if CUF.		Bidders are obligated to perform as per the RFP conditions
VOLUME-II 1. Section II: Design Philosophy	158/442 of RFS	The designed array capacity at STC shall be suitably determined to meet the proposed guaranteed generation output at the point of interconnection by the contractor in his bid. The Contractor shall take care of first year degradation also by installing additional DC capacity as the CUF calculations will not factor the first-year degradation of the modules. 1. Please clarify, DC capacity defined in the tender documents as 2.2MWp is fixed or can be varied for PR guaranteeing. Also please confirm if re-powering can be done by bidder to meet the guaranteed generation		Only the AC capacity of 2MW is fixed.
VOLUME-II 1. Section I: Inverter Transformer and Auxiliary Transformer	167/442 of RFS	1. Kindly clarify if Auxiliary power source during day and night time?		Bidders are encouraged to arrange their own power source to supply auxiliary needs during construction period. However, during maintenance auxiliary power can be sourced from KSPDCL.
VOLUME-II 1. Section II: Technical Specification	191 / 442 of RFS	Rated Voltage Shown is 11/33 kV but as per SLD its 400-1000V/33 kV, Please confirm Rated Voltage Rating.		As per indicative SLD uploaded. However, design vests with bidder.
VOLUME-II 1. Section II: Technical Specification Battery Energy Storage System (Excluding all variants of Lead Acid Batteries)	253 / 442 of RFS	Electrical infrastructure: AC system interconnection requirement at Point of Connection (PCC): 11 kV / 415 V, 50 Hz, 3 phase The BESS will be coupled with the PV System at the AC coupling 33kV/415V or 690V. As per SLD, BESS evacuation voltage is at 33kV, please clarify		The SLD shall prevail. However, design vests with bidder.

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
Procurement-Specific Location and Site Characteristics for Design				
FUNCTIONAL GUARANTEE TESTS FOR SOLAR PV PLANT	379/442 OF RFS	Eout: Cumulative AC energy measured at the Plant End (ABT meter) over the duration of reporting period (kWh) 1. Please clarify the metering location for PR test consideration.		clause no. 1.2.6.1.6 shall stand amended as follows: ...The Annual Generation corresponding to the CUF/PR to be met by the Bidder shall be measured as the aggregate of the unit's measured at 33 kV HT Switchgear panel...
General	General	Please provide details regarding protection scheme and metering scheme to be practiced at Every Stage. 1. Protection Required at 33 kV Switchyard 2. Protection required for 33 kV Cables 3. Protection Required at PV Plant & BESS.		The protection scheme is as per RFP terms. However, bidder is free to design and innovate.
General	General	Please provide list of studies Pre and Post to be conducted for Complete Project including 220/33kV Pooling Substation. Ex. 1. Evacuation Study / Grid Impact Study. 2. No Studies will be performed at 220/33 kV Pooling Substation 3. Auxiliary Power Calculation 4. Load Flow Analysis 5. System Dynamic Modeling		The list of studies shall be carried out as recommended by STU / SRLDC / SRPC from time to time. However, Bidders are required to apply before CTU for LTOA and connectivity approval for interconnecting this 2MW BESS project with 400/220kV PGCIL substation.
VOLUME-II Section II: Technical Specification 6. Road	226 / 442 of RFS	Length of approach road from nearest highway to main gate		Bidders are encouraged to arrange for site visit for assessment

**REPLIES TO THE PRE BID QUERIES AGAINST RFP FOR SELECTION OF EPC CONTRACTOR FOR DESIGN, ENGINEERING, SUPPLY, CONSTRUCTION, ERECTION, TESTING, COMMISSIONING OF
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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
VOLUME-II Section II: Technical Specification 10. Design Load	229 / 442 of RFS	"...shall be applied such that the center of pressure should be at (0.3 × length of canopy) from windward end..." Purlin design with uniform loading and solidity ratio can be considered as 0		No change in the existing clause
VOLUME-II Section II: Technical Specification 10. Design Load	229 / 442 of RFS	"...20% reduction in wind pressure as per Note under Clause 6.3 of IS 875 – Part 3 is not permitted..." Please allow 20% reduction as per clause 6.3 IS 875 part -3		No change in the existing clause
VOLUME-II Section II: Technical Specification 12. MMS Foundation	232 / 442 of RFS	"...be 300mm (min. 350 mm for column web depth more than 175 mm) and 232 1800mm respectively..." Please allow MMS foundation as per geotechnical report and design as per relevant IS Code		No change in the existing clause
VOLUME-II Section II: Technical Specification 13. Module Mounting Structure (MMS)	234 / 442 of RFS	"Purlin – Minimum thickness of the purlin section excluding anti corrosive treatment (BMT) shall be 1.5 mm....." Please confirm, purlin of thickness 1mm is allowed		No change in the existing clause
VOLUME-II Section II: Technical Specification 13. Module Mounting Structure (MMS)	235 / 442 of RFS	"13.14. The vertical diagonal bracing shall be provided in end spans and every alternate span of each unit (table) of MMS." Please allow vertical diagonal bracing at only end of table		No change in the existing clause
VOLUME-II Section II: Technical Specification 13. Module Mounting	235 / 442 of RFS	"...Fasteners and washers to be used for erection of mounting structures and those for fixing Module over MMS shall be of stainless steel grade SS 304 with property class A2-70 conforming..." SS304 for Module mounting and for other connection HDG 8.8		No change in the existing clause

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
Structure (MMS)				
VOLUME-II Section II: Technical Specification 13. Module Mounting Structure (MMS)	235 / 442 of RFS	"...the column member shall be extended for full depth of the pile (100mm cover at tip of the pile) with an end plate of min. 4mm thickness to be welded at the bottom of column leg....." Base plate at base of embedded column is not neccessary , confirm can it be removed.		No change in the existing clause
VOLUME-II Section II: Technical Specification 13. Module Mounting Structure (MMS)	235 / 442 of RFS	"The minimum clearance between the lower edge of the module and the "...finished grade shall be the higher of (i) Highest flood level + 100mm and (ii) 1000 mm, as applicable..." Please allow minimum ground clearance as 500mm		No change in the existing clause
VOLUME-II Section II: Technical Specification 16. Buildings and Plinth for Open Installations	236 / 442 of RFS	Can we optimize the room size		No change in the existing clause
VOLUME-II Section II: Technical Specification 3. Technical Specification of Battery Energy Storage System	255/442 of RFS	Battery capacity has to be 4.5MWh at the end of year 1 or Beginning of Year 1		At the time of commissioning 4.5MWh BESS capacity is to be demonstrated
VOLUME-II Section II: Technical Specification 12. Factory	268/442 of RFS	Integrated FAT of BESS System is Not possible. Integrated BESS testing with rated power and Energy can be shown during SAT.		No change in the existing clause

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
Acceptance Testing of BESS				
Class 3 and table 2	255/442	Watt-Hour Rating (Dispatchable Capacity) 4.5MWh, Dispatchable at the beginning of life (i.e. at the time of Commissioning) and minimum throughput capacity at the end of each year of operation as per below table: Year of Operation Dispatchable Capacity Year 1: 4.5 MWh Year 2: Dispatchable	Beginning of life is 4.5MWh and end of 1st year also 4.5MWh. Also remaining capacity after EOL or end of 12th year is not very precise.	At the time of commissioning 4.5MWh BESS capacity is to be demonstrated
1.2.6.2.	12/442	The Bidder should have consortium agreement/MOU with technical partner who has manufactured or supplied and installed batteries for energy storage system(s) of cumulative installed capacity of 5MWh with dispatchable capacity of 4.5MWh or higher out of which at least one battery energy storage system should be of 3MWh capacity or higher. The reference battery energy storage system of 3MWh or higher capacity must have been in successful operation for at least 12 months prior to the date of techno commercial bid submission. The bidder should upload the consortium agreement/MOU and submit the hard copy of the original MOU before the bid opening date.	We request you to kindly allow us to submit the manufacturing authorization letter instead of consortium agreement/MOU. As the bid submission due date is very short notice. However we will submit the consortium agreement/MOU before the releasing of LOA.	No change in the existing clause
1.2.6.2.	12/442	The Bidder should have manufactured or supplied batteries for battery energy storage system(s) of cumulative installed capacity of 5MWh with dispatchable capacity of 4.5MWh or higher out of which at least one battery energy storage system should be of 3MWh capacity or higher. The reference battery energy storage system of 3MWh or higher capacity must have been in successful operation for at least 12 months prior to the date of techno commercial bid submission.	Request seeking KREDL to relax in Technical Criteria as per below : supplied batteries for battery energy storage system(s) of cumulative installed capacity of 3 MWh with dispatchable capacity of 2.5MWh or higher out of which at least one battery energy storage system should be of 1 MWh capacity or higher. The reference battery energy storage system of 1 MWh or higher capacity must have been in successful operation for at least 12 months prior to the date of techno commercial bid submission.	No change in the existing clause
		General	Kindly confirm and provide the following details soil test report & drawings	Soil tests are under the scope of bidder. SLD is already part of the RFP document.

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
		General	Is the identified land likely to flood as seen recently, was this area flooded If yes, the same should be taken into account in the design or not. Kindly confirm	Bidders are encouraged to arrange for site visit for assessment
	40/442	Battery Energy Storage System – Product Warranty period of 5 (Five) years;	Kindly re confirm the BESS system warranty	No change in the existing clause
		The BESS Supplier/sub-contractor must have the experience of having successful manufactured or supplied Batteries for battery energy storage system(s) of cumulative installed capacity of 5MWh with dispatchable capacity of 4.5 MWh or higher out of which atleast one battery energy storage system should be of 3MWh capacity or higher. The reference battery energy storage system of 3MWh or higher capacity must have been in successful operation for atleast 12 months prior to the date of techno commercial bid submission.		No change in the existing clauses of RFP
		Bidders are not required to propose the BESS supplier/sub-Contractor long with the Bid. After the Contract is signed with winning Bidder, the winning bidder will be required to finalize a BESS Supplier/sub-Contractor meeting the above requirements and establish subcontracting agreement/work order with the BESS Supplier/sub-contractor within 120 days from the effective date of the contract Agreement"		

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
Section 1-scope of work, project particulars	146	BESS Energy Discharge Duration (C Rate)	C/3 i.e. 1.5 Hour for the BESS package of 4.5 MWh BESS (total discharge hour is 3 hrs)	As clarified above.
		Minimum no. of cycles for BESS	4380 cycles at 25 ⁰ C at the time of commissioning and/overall with an assumption of C/3 rate of discharge per day (4.5MWh package level) during the O&M period of 12 years.	
		Grid charging for BESS	No	
		O&M period	12 years	
		Design life of PV/Power plant and BESS	25 years	
		Site location and land details		
		Site coordinates	Refer Annexure – E project location	
		village	Balagamudra village, Pavagada Taluk, Pavagada solar park of KSPDCL	
		In case of solar generation non availability how BESS will charge ?? Design life of BESS, we request to change the clause for Bess should be 10 years min.		
	251	<p>Battery Energy Storage System (Excluding all variants of Lead Acid Batteries)-1. Scope of works.</p> <p>-----</p> <p>Design, fabricate, and assemble a fully functional, transportable BESS that meets the requirements delineated herein. This shall include a control system that provides standard input/output channels and appropriate control actions for all required operational and protective features.</p> <p>Transportable what does it actually means??? We request to remove this word as system will be installed on fixed basis.</p>		<p>The clause shall stand amended as follows:</p> <p>Battery Energy Storage System (Excluding all variants of Lead Acid Batteries)-1. Scope of works.</p> <p>-----</p> <p>Design, fabricate, and assemble a fully functional, BESS that meets the requirements delineated herein. This shall include a control system that provides standard input/output channels and appropriate control actions for all required operational and protective features.</p>

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale
RFP 2.2	253	<p>2.2. Grid Characteristics</p> <p>The BESS shall be capable of continuous operation under variable voltage, frequency and phase imbalance conditions at the PCC. Information on available fault current and other characteristics of the utility grid will be provided by the Transmission/Distribution Utility. The Contractor shall confirm that this information has been received and understood during the site-specific engineering phase.</p> <p>Any information available about variation in voltage, frequency, phase imbalance at PCC.</p>		Bidders are obligated to perform as per the RFP conditions
RFP, table	255	<p>Charge – Discharge Cycles One discharge cycle per day is envisaged overall</p> <p>Charging pattern ?? in case solar not available at any specific day or two ...what will be Consideration at that time ???</p>		As clarified above.
RFP, table	255	<p>BESS Degradation above Nominal Value In case of degradation above nominal value, the Contractor shall compensate such degradation with augmentation of BESS at its own cost.</p> <p>Maximum allowed degradation above nominal value??</p>		Bidders are obligated to perform as per the RFP conditions
RFP, 4.4.1	257	<p>4.4. Additional transportability requirements and/or clarifications</p> <p>4.4.1. In designing for transportability of the lithium- ion batteries, the Contractor shall follow the relevant guidelines (Sub-section 38.3) set forth in the United Nations document “Recommendations on the Transport of Dangerous Goods— Manual of Tests and Criteria” (ST/SG/AC.10/11/Rev.5), with specific reference to obtaining UN38.3 and UN3480 certifications at the battery module and/or container level.</p> <p>Need to check at module level??? It should be considered at cell level.</p>		Bidders are obligated to perform as per the RFP conditions
RFP, 4.4.2	257	<p>4.4.2. The BESS container or containers shall be of a size and weight to be capable of being transported to project sites with due consideration for the load bearing restrictions imposed by bridges, if any, and rarefied atmospheric conditions in the region</p> <p>Need details of load bearing restrictions??? Any transportation restriction??</p>		Bidder need to assess the site conditions.

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale						
RFP, 4.5.1	257	<p>Battery End of life shall be not less than 12 years from the date of Commissioning.</p> <p>We are considering that replacement of battery cell / module is allowed in the given clause. Though EOL will be as required.</p>		Bidders are obligated to perform as per the RFP conditions						
RFP, 4.6	257	<p>Mean-time-to-repair- The time taken from the time of notification of a need for repair to the time of completion of repairs (that is, inclusive of time for arrival of spare parts and repair personnel at the location of the BESS).</p> <p>We request to consider the mean time after arriving the spare and repair.</p>		No change in the RFP conditions						
RFP, 4.6.2	258	<p>4.6.2. The BESS shall be capable of unattended operation, with provision of remote monitoring and control.</p> <p>list of unattended operation, clarification ???</p>		No change in the RFP conditions						
RFP, 4.11.3	262	<p>4.11.3. The grid may have its own protective schemes at the point of common connection (PCC) that will be the responsibility of the Contractor to fulfil.</p> <p>Please clarify the protective scheme that is contractor responsibility??</p>		Grid connectivity and protection needs to be followed by the Bidders as per relevant regulations from time to time.						
RFP, P & S3.14	150	<p>3.14. Providing necessary communication and Data Acquisition System to transfer real time data to SLDC/RLDC as per the specifications of SLDC/RLDC wing and as per grid connectivity approving authority.</p> <p>So how SLDC / RLDC will receive the data at their any standard details available??</p>		As per the existing Regulations formulated by SRLDC/SRPC from time to time.						
RFP, , 2.3	253	<table border="1"> <thead> <tr> <th>Standard</th> <th>Description</th> <th>Certification Requirements</th> </tr> </thead> <tbody> <tr> <td>IEC 61427-2/IS 16270</td> <td>Secondary cells and batteries for renewable energy storage for On grid applications -</td> <td>Required for Cells and Battery Modules excluding all</td> </tr> </tbody> </table>	Standard	Description	Certification Requirements	IEC 61427-2/IS 16270	Secondary cells and batteries for renewable energy storage for On grid applications -	Required for Cells and Battery Modules excluding all		Standards and Codes for BESS shall be as applicable as per MOP guidelines from time to time.
Standard	Description	Certification Requirements								
IEC 61427-2/IS 16270	Secondary cells and batteries for renewable energy storage for On grid applications -	Required for Cells and Battery Modules excluding all								

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Clause no.	Page no.	Bidder's query			Suggested modification if any	Amendment/Rationale
			General requirements and methods of test	variants of lead acid batteries.		
		IEC 62485-2	Safety requirements for secondary batteries and battery installations - to meet requirements on safety aspects associated with the erection, use, inspection, maintenance and disposal: Applicable for Lead Acid and NiCd / NiMH batteries	Applicable only for Lead Acid and NiCd / NiMH batteries		
RFP, 2.3	253	Standard	Description	Certification Requirements	please clarify what it should contain?? what is mean by BESS system level. confirmation on BESS system level ??	Standards and Codes for BESS shall be as applicable as per MOP guidelines from time to time.
		UL 1973 (battery) or IEC 62619 (battery) + IEC 63056 (battery))	Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications / Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications	Either UL 1642 or UL1973 or (IEC 62619 + IEC 63056) is required for the Battery level		
		IEC 62281 /	Safety of primary and secondary	Required for both Battery		

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Clause no.	Page no.	Bidder's query	Suggested modification if any	Amendment/Rationale												
		<table border="1"> <tr> <td>UN 38.3</td> <td>lithium cells and batteries during transport: Applicable for storage systems using Lithium Ion chemistries</td> <td>and Cell.</td> </tr> <tr> <td>IEC 61850/ DNP3</td> <td>Communications networks and management systems. (BESS control system communication)</td> <td></td> </tr> <tr> <td>UL 9540 or (IEC TS 62933-5-1 + IEC 62933-5-2)</td> <td>Electrical energy storage (EES) systems - Part 5-1: Safety considerations for grid-integrated EES systems – General specification / Standard for Energy Storage Systems and Equipment</td> <td>Either UL9540 or (IEC 62933-5-1 + IEC 62933-5-2) is required for BESS system level</td> </tr> <tr> <td>UL9540A</td> <td>Standard for Thermal runaway</td> <td>Required for BESS system level</td> </tr> </table> <p>Battery - consideration of battery (Module level or rack level or any other) . Required for BMS and all communicable devices.</p>	UN 38.3	lithium cells and batteries during transport: Applicable for storage systems using Lithium Ion chemistries	and Cell.	IEC 61850/ DNP3	Communications networks and management systems. (BESS control system communication)		UL 9540 or (IEC TS 62933-5-1 + IEC 62933-5-2)	Electrical energy storage (EES) systems - Part 5-1: Safety considerations for grid-integrated EES systems – General specification / Standard for Energy Storage Systems and Equipment	Either UL9540 or (IEC 62933-5-1 + IEC 62933-5-2) is required for BESS system level	UL9540A	Standard for Thermal runaway	Required for BESS system level		
UN 38.3	lithium cells and batteries during transport: Applicable for storage systems using Lithium Ion chemistries	and Cell.														
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UL 9540 or (IEC TS 62933-5-1 + IEC 62933-5-2)	Electrical energy storage (EES) systems - Part 5-1: Safety considerations for grid-integrated EES systems – General specification / Standard for Energy Storage Systems and Equipment	Either UL9540 or (IEC 62933-5-1 + IEC 62933-5-2) is required for BESS system level														
UL9540A	Standard for Thermal runaway	Required for BESS system level														
RFP, table	255	<p>BESS Degradation above Nominal Value In case of degradation above nominal value, the Contractor shall compensate such degradation with augmentation of BESS at its own cost. Maximum allowed degradation above nominal value ??</p>		Bidders are obligated to perform as per the RFP conditions												
RFP, 12.4	268	<p>12.4. During the FAT, the BESS shall meet the following:</p> <ul style="list-style-type: none"> • Be operated and function as specified and designed in all the operating states, use cases, and duty cycles specified herein • Meet the power and energy requirements specified herein • Be demonstrated to meet the safety and response to 		Successful bidder has to submit the said documents as per RFP conditions. However, the said tests need to be conducted as per industrial utility practice and as per regulations												

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		<p>catastrophic failure requirements specified herein</p> <ul style="list-style-type: none"> •Have the efficiencies, response capabilities, and other features specified herein and/or proposed by the Contractor <p>Note: The methodology for measurement of procurement specifications is provided in the Annexure-G to this Section.</p> <p>12.5. Operation of all control, protective relaying, and instrumentation circuits shall be demonstrated by direct test, if feasible, or by simulating operating states for all parameters that cannot be directly tested. Automatic, local (control console), and remote operation of the controls shall be demonstrated.</p> <p>12.6.Factory testing shall demonstrate operation at expected temperature extremes at the Employer's site. If this is not possible for the full BESS at the manufacturing facility, independent laboratory certification of operation of critical components and subsystems in the battery, PCS, and control systems shall be submitted at the time of the FAT. The Contractor shall submit to the Employer for approval, 90 days before the FAT, a list of components and subsystems for which independent lab testing certification will be sought.</p> <p>12.7. The Contractor shall perform any and all system modifications required during start-up and testing. The testing may be suspended as a result of a BESS malfunction and resumed only on rectification of problem items. Such suspension and resumption will occur at the sole discretion of the Employer.</p> <p>12.8. The BESS will not be accepted for shipment until all FATs have been successfully completed. In addition, the Employer will verify that all provisions of the contract have been met, including verification of all required submittals, any spare parts delivery, and any required system modifications.</p> <p>We request to KREDL if there is any standard FAT and SAT documents KREDL have please share .</p>		<p>from time to time.</p>
RFP, 12.4	268	<p>13. Commissioning and Functional Guarantee test procedure</p> <p>13.1. The Contractor shall develop and submit to the Employer for its review and approval a comprehensive SAT plan that shall demonstrate to the Employer that the BESS will perform as specified at the Employer's site. The Employer shall have the right to request reasonable changes to the test plan.</p> <p>We request to KREDL if there is any standard FAT and SAT documents KREDL have please share .</p>		<p>Successful bidder has to submit the said documents as per RFP conditions. However, the said tests need to be conducted as per industrial utility practice and as per regulations from time to time.</p>

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		<p>13.2.The Contractor shall develop and perform SAT procedures to ensure that the BESS will perform as designed and that the system meets the performance criteria specified elsewhere in these specifications. The SAT plan shall include procedures to test operating scenarios described in the specification. These procedures may involve special requirements and/or witnessing by the local independent system operator. To the extent achievable, all use cases and operating modes described in the specification shall be tested.</p> <p>13.3.After the Contractor has determined that the BESS is fully operational, the Contractor shall conduct the SAT, witnessed by the Employer and/or the Employer's representative. The tests shall include, as a minimum, the following:</p> <ul style="list-style-type: none"> • Verification of sensors, metering, and alarms • Verification of all control functions, including automatic, local, and remote control • Verification that the performance criteria in the specification can be met or exceeded • Demonstration of all of the intended uses • Demonstration of interface protection circuits and functions and control interfaces 		<p>Successful bidder has to submit the said documents as per RFP conditions. However, the said tests need to be conducted as per industrial utility practice and as per regulations from time to time.</p>

**Sd/-
MANAGING DIRECTOR
KREDL**