Prebid queries and their reply Tender Package 4C for setting up 5000 KW AC, 1.3ILR/6.5 DC capacity grid connected ground mounted solar PV system of Nalanda university, at Rajgir, Bihar

Prospective Bidder 1

S No	File	Page	Clause No	Clause	Query	Reply from Nalanda University
1	Technical 189-256.pdf	5	2.1.1	This includes co-ordination and approval from the SECI, BERC, DISCOM and third party vetting as well.	Please clarify on role of SECI & third party in the project.	The Design and Implementation should be in Line of the CPSU (Tranche-II) Phase-II Scheme bring Run by the SECI. The SECI/NISE involvement in design & vetting approval may alsoa be required. As the system is ON-GRID Solar, therefore the co-ordination with GRID authorities i.e. DISCOM- will be required for the system design, and execution fulfilling guideline of the SBPDCL especially for the commissioning purpose. NIT Conditions Prevails.
2	Technical 189-256.pdf	6	2.1.1 (f)	Connections & Interconnections by supplying & fixing required size XLPE insulated copper conductor 1.1 kV grade armoured power and control cables between solar modules, main power cable to grid supply PCU unit along with supplying & fixing of necessary channel/conduit lugs and other accessories etc. as required.	Please allow Aluminium conductor armoured power cable in AC side.	Please refer to the TS Page 67, Sr 14- It is pertinent to mentioned that Consider set of aluminium cable from Inverter to AJB/Panel & AJB/Panel to LT Panel may be issued to give opportunity to all prospective bidders to consider the same and submit its offer accordingly. The Aluminium conductor armoured power cable in AC side may be used and executing agency will be responsible for suitable connections without any loss and compromise on the system efficiency. All cables and connectors to be used for installation of solar field must be of solar grade which can withstand harsh environment conditions for 25 years and voltages as per latest IEC standards. It is recommended that the Cables of 600-1800 Volts DC for outdoor installations should comply with the BS/ EN EN50618/ TUV 2pfg 1169/08/07 for service life expectancy of 25 years. NIT Conditions Prevails.
3	Technical 189-256.pdf	6	2.1.1	The 415V /11KV steup Transformer with its Main LT Panel, HT Panels and Cable at the 11KV line/feeder will be executed by the University through other contractor.	Is our scope limited to termination to LT side of existing step-up transformer?	Yes, The NIT conditions prevails
4	Technical 189-256.pdf			All Electrical High Side Equipments starting from Bus-duct, Transformer of 415 V to 11 KV, its related earthing, UPS for 11 KV System, Safety Equipments for 11 S/S, 11 KV Panels etc will be provided by client at desired location.		Yes, The NIT conditions prevails
5	Technical 189-256.pdf	6	2.1.5	The contractor should maintain all necessary spares for breakdown to maintain zero breakdown time.		A tentative list of the essential inventory list will be prepared for its approval and minimum as pe rthe approved list to be maintain at the site provided fulfillment of the utmost uptime. NIT Conditions Prevails.
6	Technical 189-256.pdf	7	2.1.14	Charges for the power & internet to be reimbursed to the main campus organisation, while provision for water meter to be kept in the system at present for water part of this.	1. Kindly specify the current power & internet charges. 2. Kinldly clarify on Water charges also.	**Pre- Construction:** The water, electricity and internet facilities to be mainatined by the executing agency as others do at present at the site. **Post Construction:** Main water source will be facilitated by the University. The Executing agency has to ensure optimal use of the water to avoid loss. If there will be any unwanted challanged in getting electricity connection from SBPDCL in that case the University may provide the metered connection to run the site office of the executing agency. NIT Conditions Prevails.

7	Technical 189-256.pdf	8	2.1.20	CCTV,Pump & pipes, manual & robotics cleaning shall be within the schedule of O&M requirements	Robotics cleaning is optional or mandatory, please clarify.	In order to maintain the optimal efficeincy without any compromise, the executing agency has to design a suitable system keeping in mind (i) optimal use of the water (to avoid loss of the water), (ii) effective and utmost efficiency, (iii) effective cleaning mechanism etc. within same cost. Therefore, the effective and optimal design ha sto be ensured by any means which will be required to be approved by th**e third party as per the NIT Conditions**. NIT Conditions Prevails.
8	Technical 189-256.pdf	8	2.1.23	The contractor has to arrange complete visit & give a call for Pre Dispatch Inspection in prior (at least 15 days). All related cost for PDI to be bared by the contractor	Arrangement will be done by the bidder but please keep all related cost for PDI to respective inspection agencies. Please confirm.	The travelling, logicstics supports of the Inspector will be borne by the University. All the technical support required for the testing shall be arranged by the executing agnecy. NIT conditions prevails.
9	Technical 189-256.pdf	8	2.1.25	All necessary support as on required shall be extended by the contractor for subsidy to the client for the project.		All necessary documentations and technical support as required shall be extended by the contractor for subsidy to the client for the project. NIT Conditions Prevails.
10	Technical 189-256.pdf	10	xiii)	A complete SCADA setup shall be made available which shall connect all the modules via optimizers, all the PCU / inverters, Power Panel Switchgear & Meters & all other misc components like UPS etc & a final gateway to be provided to communicate & handover control (when & if required) to the master SCADA of the campus. All required hardware, software setups & license, training etc shall be included in this scope.	Detail on existing master SCADA may be shared for ensure its compatibility with SCADA to be setup for solar system.	The SACDA will be on the open protocol so the necessary technical information will be provided during its integration. NIT Conditions Prevails.
11	Technical 189-256.pdf	22	2.11 i)	The injection of DC power into the grid shall be avoided by using an isolation transformer at the output of the inverter	For inverters having transformer-less design, requirement of isolation transformer may be ommited. Kindly confirm.	The DC power injection into the GRID to be avoided. The broad guidelines of CPSU Tranche-II or the third party vetting as per the standard practise to be followed. The reason behind selecting this device is that An isolation transformer is used to provide isolation between a power source and the powered devices thereby providing better safety to appliances as well as their users. Isolation transformers also have noise and power surge reduction capability which makes them ideal for those appliances which require a high-quality power supply for efficient operation. Hence, NIT conditions prevail.
12	Technical 189-256.pdf	24	iv)	The Mounting structure shall be so designed to withstand the speed for the wind zone of the location where a PV system is proposed to be installed. It may be ensured that the design has been certified by a recognized Lab / Institution in this regard.	We shall provide report generated through STAAD software by experienced engineering staff which itself assure proven design. Please omit the certification requirement from any Lab/institution. Kindly confirm.	The design should be confirming to the minimum requirement as per the CPSU scheme, it should be designed by the structural engineer, STAAD is acceptable in general. However, the specific design report and its analysis will depend on the third party **doing the vetting of design as per best industry practice**. NIT Conditions Prevails.
13	Technical 189-256.pdf	46	2.25	Cutting and clearing of trees / plantation to remove the shadow.	Kindly ensure legally incumbrance-free land along with cutting of trees intially while providing land for installation. Later, bidder will ensure the total	The project has EIA clerance. There is no such tree at the site for which sperate NOC from forest deparment is required. For betterment, please ensure the site visit. NIT conditions prevail.

14		9	2.3.1	The mechanical structures, electrical works and overall workmanship of the grid solar power plants must be warranted for a minimum of 15 years.	The product warranty for PV modules shall be limited to 10 years as per commonly accepted industry practice. The SECI's tender for CPSU (Tranche-II) Phase-II Scheme referred to in your technical specification also prescribes 10 years as warranty for PV modules.	**Agreed,** It will be as pe rthe SECI guidelines issued for the CPSU Tranche-II . However, necessary SOPs and advise for protection upto the sytem life shall be extended well in advance by the executing agency as per the consent of the University as per the best industry Practise. The Type error CPCU in the NIT has been observed at some places which must be read as CPSU Tranche-II. The SECI guideline is being faciliated herewith for reference and better understanding, please. NIT conditions prevail.
15		14		EMD	BHEL is a Maharatna central PSU unit under Ministry of heavy industry is exempted for EMD submission for all the tenders of utility / Government department. Kindly Exempt us for EMD submission.	The PSUs/Govt Agencies are exempted for the submission of the EMD fee. Corrigendum is being issued.
16		11	2.6.i	Tedlar sheet	Tedlar specifically refers to DuPont make brand name for PVF film, which is used by some backsheet manufacturers as inner layer or outer layer or both of the three-layered backsheet, the middle layer being PET (Polyester). The backsheet used in our PV modules does not contain Tedlar. The SECI's tender for CPSU (Tranche-II) Phase-II Scheme referred to in your technical specification also does not prescribe Tedlar as the backsheet for PV module. The tri-laminate backsheet used by us shall consist of Outer layer (air side) with Fluoropolymer, Middle layer with Polyester (PET) and Inner layer (cell side) with UV resistant polymer / Fluoropolymer with the total thickness of the backsheet not less than 300 microns. This is commercially and technically proven backsheet used by all the PV module manufacturers. Kindly accept the same.	The Tedlar equivalent sheet will be acceptable.
17				General	We understand there shall be a single works contract including the tenure of 5 years' O&M and the tax regimen shall be 5% GST on 70% contract value and 18% GST on 30% contract value as per extant GST provisions. Please confirm.	Please refer to GCC Clause 37-38. The Govt rule under the tax legislation read with GCC will be applicable. The bidders are requested to have a look on the CPWD guidelines. NIT conditions prevail.

18		134/419	5.16	On Account Payment of Interim Bills	Customer is requested to please govern the contract with the following terms of payment: 10% interest free advance along with a clear purchase order against submission of PO acknowledgement. 70% against proof of dispatch on pro rata basis. 10% against erection on pro rata basis. Erection of structures, mounting of panels, inverter/ACDB/DCDB installation and cabling may be considered as Erection. 5% against commissioning on pro rata basis. Charging of local LT panel may please be considered as commissioning. 5% on proving out.	Please refer to the clause 10B, other than on account paymnet and Mobilization Advance, the Secured Advance on Non-perishable Materials are also provissioned. The NIT conditions Prevails.
19				General	Any delay in payments due from the scheduled milestone as per the contractual document performed in accordance with the contract, unless delayed due to unavoidable reasons, shall be compensated by the customer with interest for the period of delay on the payment liable for release. Interest rates to be governed by MCLR	NIT conditions Prevails

20				General	This is with reference to newly inserted subsection (AH) under section 206C of the lncome Tax Act, 1961 -vide Finance Act 2020 (applicable w.e.f. 01.10.2020) for levy and collection of Tax Collected at Source (TCS) by sellers of goods. The salient aspects of the provisions of Section 206C sub-section (1 H) are: 1. A seller is liable to collect TCS at the rate of 0.1 % on consideration received from a buyer, in excess of fifty lakhs rupees. 2. The rates have been reduced by 25% for FY2020-21, making the effective rate 0.075%, for the period from 01.10.2020 to 31.03.2021. The rate shall remain 0.1 % w.e.f. 01.04.2021. 3. TCS is to be levied on value of goods, inclusive of taxes and duties. 4. TCS is to be levied only on those transactions/ invoices where TDS has not been deducted by the customer. Accordingly, this is to inform that w.e.f. 01.10.2020, all the invoices raised by BHEL for your projects (invoices in which TDS is not to be deducted) shall include TCS amount charged by BHEL, which shall be over and above the sale amount. After, collection, the same shall be deposited to the Govt. of lndia account by the 7th of the following month (i.e. next month to the one in which the collection is received). The TCS shall be collected at 0.075% for invoices raised till 31.03.2021 and at 0.1% for invoices raised after 31.03.2021 (or as directed by the Govt. of India). It may be noted that you shall get the credit for TCS on the basis of TCS certificate provided by BHEL under the lncome Tax Provisions. This levy of TCS is part of statutory changes due to	Whatever GoI has outlined as concessions due to the pandemic would be catered to and that those clauses need to be read in conjunction with the prevailing CPWD guidelines. The NIT conditions Prevails.
	Prospective Bidder 2					
21	TECHNICAL ELLIGIBILITY SECTION	13	1	Intending Govt. Agencies/ PSUs are eligible to submit the offer provided they have definite proof from the appropriate authority, which shall be to the satisfaction of the competent authority, of having satisfactorily completed similar works of magnitude specified below:- 1. Three similar works of ON-GRID Solar plant setup each of size not less than 2MW ac OR 2. Completed two similar works of ON-GRID Solar Plant setup size each of size not less than 3 MW ac OR 3. Completed one similar woks of ON-GRID Solar plant setup of size not less than 4 MW ac For the purpose of this clause, “similar work” shall mean “Designing/Engineering, Procurement, Installation, Testing, Commissioning, Operation and maintenance of Solar Farm with all necessary components for generation and evacuation of Electricity in a single order, in last seven years in India”.	We are the manufacturer of Solar Cells & Solar Modules and also have the have the experience of setting up of utility scale ground mounted Solar Power Plants in Developer Mode for captive consumption (ranging from 850kWp to 16MW with Cumulative capacity of 72MW) at various of Ordnance Factories in India.	Please refer to the NIT clause for the Technical Eligibility, Other than completed similar Solar Works Capacity - 1. Three similar works of ON-GRID Solar plant setup each of size not less than 2MWac OR Completed two similar works of ON-GRID Solar plant setup size each of size not less than 3 MWac OR Completed one similar works of ON-GRID Solar plant setup of size not less than 4 MWac For the purpose of this clause, “similar work” shall mean “Designing / Engineering, Procurement, Installation, Testing, commissioning, Operation and maintenance of Solar Farm with all necessary components for generation and evacuation of Electricity in a single order, in last seven years in India”. The alternative clause under the technical elligibility for the Manufacturer from PSUs/ Govt sector are also allowed as mentioned below: The Solar PV Panel Manufacturing PSUs/Govt Agency or Authorized PSU/Govt agency of panel manufacturer who has done similar work of Designing, Engineering, Procurement, Installation, Testing, commissioning, Operation and maintenance of Solar Farm with all necessary components for generation and evacuation of Electricity. Therefore, the PSU/Govt agencies successfully completed the above said magnitude (in MWac) of project in any mode (either capex /developer or opex or RESCO) OR as a manufacturer are welcome and elligible to participate in the bidding process as per the NIT terms and conditions.

22	EMD	7	14	Submission of Earnest Money Deposit (EMD) of INR 34.25 Lakhs in the form of BG/FDR/TDR/Deposit at Call receipt/Demand Draft drawn in favour of "Nalanda University", payable at Rajgir, Bihar from any scheduled bank guaranteed by the Reserve Bank of India.	As we are Central Public Sector Undertaking (CPSU), Govt. of India, Ministry of Defence, request you to provide exemption against submission of EMD.	The PSUs/Govt Agencies are exempted for the submission of the EMD fee. Corrigendum is being issued.
	Prospective Bidder 3					
23	TECHNICAL ELLIGIBILITY SECTION	13	1	1. Company has so far supplied more than 3.0 Lac nos. of SPV Systems in all parts of country for various applications during last 33 years of operation. Our experience includes integration/supply, erection and commissioning of Solar inverters, SPV Power Plants, Street Lighting, Solar based Street Light Controller, Solar Road Stud, Solar Blinkers, Solar Traffic Signals, Solar Power Packs, Battery Charging, Audit Education, Railway Signalling, SPV Power pack for Petrol Pumps & Community Lighting System in large quantities. 2. Our SPV Modules/Systems are approved from Solar Energy Centre, MNRE, TEC and RDSO. Our SPV modules are also having IEC 61215, 61701, 61730-I & II certification (UL and TUV). 3. REIL has successfully executed a project for design, supply of various items and installation- commissioning of 5 MW SPV Power Plant at village Rawara, Taluka Bap, district Jodhpur and 3 nos. of 100 kWp SPV Power Plant, one at village Gorir (Raj.) and 2 nos. in J&K. Apart from these power plants REIL has also executed 6 nos. of 50 kWp SPV Power Plants (1x50kWp at village Bajak, district Bathinda, 2x50 kWp at VSEZ, Vizag, 1x50 kWp at ICAT Manesar, 2x50 kWp in Manipur state), 6 nos. of 25 kWp SPV Power Plants; 4 in Jaipur and 2 nos. in Dehradun. REIL has also executed 5x10 kWp SPV Power Plants Madhya Pradesh (1x10kWp at M.P. Silk Federation, Hoshangabad & 4x10kWP at M.P. Khadi, Bhopal). 4. We specifically state that we have executed & commissioned a prestigious project for Design, manufacture, supply, installation, Testing & Commissioning of Grid connected Solar Power plant of 1MWp capacity with all the electrical and associated equipments including civil works at Shri Mata Vaishno Devi Katra Railway Station against work order received from Northern Railway (commissioning certificate enclosed). 5. Also we have executed & commissioned a prestigious project for Design, manufacture, supply, installation, Testing & commissioning of Grid connected Solar Power plant of 1MWp capacity at IOCL Panipat Refinery and executed 2MW at Smart city Jaipur.	1.Total Completed Cumulative similar works of ON-GRID Solar plant setup each of size not less than 2MW ac in last two years OR 2. Total Completed Cumulative similar works of ON-GRID Solar Plant setup size each of size not less than 3 MW ac in last three years OR 3. Completed one similar woks of ON-GRID Solar plant setup of size not less than 4 MW ac in last Five Years	The complted magnitude of project defined in the RFP remains same. However, The alternative clause under the technical elligibility for the Manufacturer from PSUs/ Govt sector are also allowed as mentioned below: The Solar PV Panel Manufacturing PSUs/Govt Agency or Authorized PSU/Govt agency of panel manufacturer who has done similar work of Designing, Engineering, Procurement, Installation, Testing, commissioning, Operation and maintenance of Solar Farm with all necessary components for generation and evacuation of Electricity. **Therefore, the PSU/Govt agencies successfully completed the above said magnitude (in MWac) of project in any mode (either capex or developer or opex or RESCO) OR as a manufacturer are welcome and elligible to participate in the bidding process as per the NIT terms and conditions.** The NIT conditions Prevails.
	Technical	14		Earnest Money Deposit	REIL being a CPSU is already exempted for EMD submission by various nodal agencies such as Rajasthan Renewable Energy Corporation Ltd (RREC) Jaipur (Letter No P 14 (13) Industrial /1/09 dated 01.09.2009 from Dept of Industries, Govt of Rajasthan) "Punjab Energy Developement Agency (PEDA), Chandigarh", New and Renewable Energy Developement Coprporation of A.P Ltd (NREDCAP)", "Hyderabad and Chhatisgarh Renewable Energy Developement Agency (CREDA), Raipur" (Related supporting documents enclosed). Kindly exempt REIL being CPSU from submitting EMD (Copy of the PSU certificate enclosed)	The PSUs/Govt Agencies are exempted for the submission of the EMD fee. Corrigendum is being issued.

Prospective Bidder 1

Technical	TS-7 & TS 46	2.1.19	Building Constructions:	All Indoor electrification for client provided constructed areas like 11 KV Sub-station Panel Rooms, Utility Room, Supervision Rooms etc will be provided by client as per requirement. All other construction Construction for LT Panel Rooms & other utility area complete with required internal utilities, UPS room , Scada room, maintenance & training area etc.	A single solar generation substation room building size L27meterxW11.7meter as per the structural requirement is being alreday constructed which Nalanda University has considered both LT and HT Panel inside same building and therefore to be Read as "Installation of Main LT Panel Preferably Indoor, UPS , Scada, will be developed by the solar constractor including seating arrangement for maintenance & training area etc in side room. The Solar generating substation building considering 11KV HT Panels Installation by the other contrcator, MLTP under package 4C-solar, UPS, SACDA, training and seating center etc is being constructed. The sucesfull contrcator has to consider installation of the equipments inside same building and accordingly preferable design has to be considered. The Construction of Rooms & other utility area complete with required internal utilities will be provided by the client, and not included in this package 4C cost,
Technical - Date-Physical Submission	21	10C	Technical Bid submission Last Date	However, a declaration must be uploaded under the relevant packet stating on oath that the signed tender documents will be submitted physically on or before 03:00 PM on 04.12.2020 at Nalanda University, Rajgir Office. The large sealed envelope containing Technical Bids shall be submitted in the Rajgir office of Nalanda University up to 03:30 PM, 3rd December 2020.	NIT conditions laid down in clause "10-c" under elligibility criteria at page no 21 shall prevails. The last submission date for Hard Copy of the technic al bid read with NIT condition will be by 3PM, 4.12.2020.

Nalanda University –ON-GRID SOLAR project is recognized under the CPCU scheme, and therefore, this is being shared to understand the Technical Terms and Conditions.

RfS No. SECI/C&P/SPD/CPSU-II/RfS/1500MW/082019

Dated : 01/08/2019

For bidding guidance – please refer to Nalanda University's Notice Inviting tender .

Main technical conditions, but not limited, are mentioned below:

DISCLAIMER

1. Though adequate care has been taken while preparing the RfS document, the bidder(s) shall satisfy themselves that the document is complete in all respect. Intimation regarding any discrepancy shall be given by the prospective bidders to the office of SECI immediately. If no intimation is received from any bidder within **20 (Twenty) days from the date of issuance of RfS documents,** it shall be considered that the document is complete in all respect and has been received/ acknowledged by the bidder(s).

2. Solar Energy Corporation of India Ltd (SECI) reserves the right to modify, amend or supplement this document.

3. This RfS document has been prepared in good faith, and on best endevour basis. Neither SECI nor their employees or advisors make any representation or warranty, express or implied, or accept any responsibility or liability, whatsoever, in respect of any statements or omissions herein, or the accuracy, completeness or reliability of information, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of this document, even if any loss or damage is caused by any act or omission on their part.

Place: New Delhi Date: 01/08/2019

SECTION - I

DEFINITIONS OF TERMS

1.1 ***"ACT" or "ELECTRICITY ACT, 2003"*** shall mean the Electricity Act, 2003 and include any modifications, amendments and substitution from time to time;

1.2 **"CAPACITY UTILIZATION FACTOR (CUF)"** shall have the same meaning as provided in CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2009 as amended from time to time;
The CUF shall be calculated based on the annual energy injected and metered at the Delivery Point. In any Contract Year, if 'X' MWh of energy has been metered out at the Delivery Point for 'Y' MW Project capacity, CUF= (X MWh/(Y MW*8766)) X100%;

1.3 **"CENTRAL TRANSMISSION UTILITY (CTU)"** shall mean the Central Transmission Utility as defined in Section 38 of the Electricity Act 2003;

1.4 **"DAY"** shall mean calendar day;

1.5 "**GOVERNMENT PRODUCER**" shall mean any entity which is either directly controlled by the Central or State Government or is under the administrative control of Central or State Government or a Company in which Government is having more than 50 % shareholding.

1.6 **"GUIDELINES"** shall mean the "Central Public Sector Undertaking (CPSU) Scheme Phase-II (Government Producer Scheme) for setting up 12,000 MW grid (Including Mini & Micro Grid) connected Solar Photovoltaic (PV) Power Projectes by the Government Producers with Viability Gap Funding (VGF) support for self-use or use by Government/Government entities, either directly or through Distribution Companies (DISCOMS)" issued by the Ministry of New & Renewable Energy vide No. 302/4/2017-GRID SOLAR dated 05.03.2019 including subsequent amendments and clarifications thereof.

1.7 **"POOLING SUBSTATION/ POOLING POINT"** shall mean a point where more than one Solar PV Project may connect to a common Transmission System. Multiple

Projects can be connected to a pooling substation from where common transmission system shall be constructed and maintained by the SPD(s) to get connected to the Delivery Point.

1.8 **"PGCIL" *or* "POWERGRID"** shall mean Powergrid Corporation of India Limited;

1.9 **"POWER PROJECT" *or* "SOLAR PROJECT" *or* "PROJECT"** shall mean the solar power generation facility having single/separate points of injection into the grid at Interconnection/ Delivery/ Metering Point, or in case of sharing of transmission lines by separate injection at Pooling Point. It is further clarified that "Grid-connected" Projects would include micro & mini grid-connected projects.

1.10 **"ALLOCATED CAPACITY**" shall mean the cumulative capacity allocated to the successful bidder;

1.11 "**PROCURER" or "END CONSUMER"** shall mean a Government entity/Government organization, which shall be the ultimate consumer of the energy produced from the Project set up under this RfS. In case the SPD sets up the project for captive or self-use, the SPD shall be deemed to be the Procurer or End Consumer as per the RfS.

1.12 **"PROJECT COMMISSIONING":** The Project will be considered as commissioned based on self declaration by the SPD, if all equipment as per rated project capacity has been installed and energy has flown into the grid;

1.13 **"PROJECT DEVELOPER" *or* "DEVELOPER" *or* "SOLAR POWER DEVELOPER (SPD)"** shall mean the Bidding Company or a Bidding Consortium participating in the bid and having been selected and allocated a project capacity by SECI (through a competitive bidding process), including the SPV formed by the selected bidder/ consortium for the purpose of setting up of Project;

1.14 **"RfS DOCUMENT"** shall mean the bidding document issued by SECI including all attachments, clarifications and amendments thereof vide Rfs No. **SECI/C&P/SPD/CPSU-II/RfS/1500MW/082019** dated 01/08/2019;

1.15 **"SECI"** shall mean Solar Energy Corporation of India Limited;

1.16 **"SCHEDULED COMMISSIONING DATE" *or* "SCD"** shall be the date as indicated in Claue 16, Section-III of the RfS;

1.17 **" SELECTED BIDDER" *or* "SUCCESSFUL BIDDER"** shall mean the Bidder selected pursuant to this RfS to set up the Project and supply electrical output of the Project;

1.18 **"SOLAR PV PROJECT"** shall mean the Solar Photo Voltaic Power Project that uses sunlight for direct conversion into electricity through Photo Voltaic Technology;

1.19 **"STATE TRANSMISSION UTILITY"** ***or*** **"STU"** shall mean the Board or the Government Company notified by the respective State Government under Sub-Section I of Section 39 of the Electricity Act, 2003;

1.20 **"TOE"** shall mean Tender Opening Event.

1.21 **"ULTIMATE PARENT"** shall mean a Company, which owns more than 50% (Fifty Percent) voting rights and paid up share capital, either directly or indirectly in the Parent and Affiliates ;

1.22 "**Viability Gap Funding (VGF)"** shall mean the fund which will be disbursed by SECI to the SPD, if eligible, as per terms and conditions of this RfS document

1.23 **"WEEK"** shall mean calendar week;

SECTION - II

INVITATION FOR BIDS (IFB)

1.1 The Project should be designed for interconnection with the ISTS/ InSTS/STU in accordance with the prevailing CERC/SERC regulations in this regard (As applicable). For interconnection with the grid and metering, the SPD shall abide by the SPD shall abide by the Central Electricity Authority (Technical Standards for Connectivity to the Grid) Regulations, 2007 (as amended from time to time), along with applicable Grid Code, Grid Connectivity Standards, Regulations on Communication System for transmission of electric and other regulations (as amended from time to time) issued by Appropriate Commissions and Central Electricity Authority (CEA).

1.2 The responsibility of getting ISTS/STU connectivity and Long Term Open Access (LTA) shall entirely be with the SPD and shall be at the cost of the SPD. The transmission of power to and at the point of Interconnection /Delivery Point where the metering is done for energy accounting, shall be the responsibility of the SPD at his own cost. In case the SPD is required to use In STS to bring solar

2 Under the scheme, setting up of solar PV power plants for supplying auxiliary power for a power generation plant is permitted.

3 CLEARANCES REQUIRED FROM THE STATE GOVERNMENT AND OTHER LOCAL BODIES

3.1 The Solar Power Developers are required to obtain all necessary clearances and permits as required for setting up the Solar Power Projects, including but not limited to the following:

a. No Objection (NOC)/Environmental clearance (if applicable) for the Project.
b. Forest Clearance (if applicable) for the land for the Project.
c. Approval for water from the concerned authority (if applicable) required for the Project.
d. Any other clearances as may be legally required, in order to establish and operate the Project.

The above clearances, as applicable for the Project, shall be required to be submitted to SECI prior to commissioning of the Project. In case of any of the clearances as indicated above being not applicable for the said Project, the SPD shall submit an undertaking in this regard, and it shall be deemed that the SPD has obtain all the necessary clearances for establishing and operating the Project. Any consequences contrary to the above shall be the responsibility of the SPD.

Annexure - A

TECHNICAL PARAMETER OF PV MODULE AND VARIOUS OTHER COMPONENTS FOR USE IN GRID (INCLUDING MINI & MICRO GRID) CONNECTED SOLAR POWER PLANTS

All components of the PV plant shall be in accordance with technical specifications given in relevant IS/ IEC Standards. The design and commissioning also shall be as per latest IS/ IEC standards. The following are some of the technical measures required to ensure quality of the major components used in Grid (including Mini & Micro Grid) Connected solar power Projects.

Under this RfS, use of both Solar Photo voltaic (SPV) cells and Modules manufactured domestically as per specidifications and testing requirement fixed by MNRE are mandotory for installation of awarded Solar PV power Plant.

1. PV MODULE QUALIFICATION

The PV modules used in the Grid (including Mini & Micro Grid) Connected solar power Projects must qualify to the latest edition of any of the following IEC PV module qualification test or equivalent Indian standards.

Standard	Description
IEC 61215-1 Ed. 1.0	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1: Test requirements
IEC 61215-1-1 Ed. 1.0	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-1: Special requirements for testing of crystalline silicon photovoltaic (PV) modules
IEC 61215-1-2 Ed. 1.0	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-2: Special requirements for testing of thin-film Cadmium Telluride (CdTe) based photovoltaic (PV) modules
IEC 61215-1-3 Ed. 1.0	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-3: Special requirements for testing of thin-film amorphous silicon based photovoltaic (PV) modules
IEC 61215-1-4 Ed. 1.0	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1-4: Special requirements for testing of thin-film Cu(In,GA)(S,Se) based photovoltaic (PV) modules
IEC 62108 Ed. 2.0	Concentrator photovoltaic (CPV) modules and assemblies - Design qualification and type approval
IEC 61730-1 Ed. 2.0	Photovoltaic (PV) module safety qualification - Part 1: Requirements for construction

IEC 61730-2 Ed.2	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing
IEC 61701 Ed.2	Salt mist corrosion testing of photovoltaic (PV) modules (Applicable for coastal and marine environment)
IEC 62716 Ed.1	Photovoltaic (PV) modules - Ammonia corrosion testing (Applicable for wet atmospheres having high concentration of dissolved ammonia)
IEC TS 62804-1 Ed.1	Photovoltaic (PV) modules - Test methods for the detection of potential-induced degradation - Part 1: Crystalline silicon

2. POWER CONDITIONERS/ INVERTERS

The Power Conditioners/Inverters of the SPV power plants must conform to the latest edition of IEC/ equivalent Indian Standards as specified below:

Standard	Description
IEC 61683 Ed. 1	Photovoltaic systems - Power conditioners - Procedure for measuring efficiency
IEC 62109-1 Ed. 1	Safety of power converters for use in photovoltaic power systems - Part 1: General requirements
IEC 62109-2 Ed. 1	Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters
IEC 61000-6-2 Ed. 2	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
IEC 61000-6-4 Ed. 2.1	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
IEC 62116 Ed. 2/ IEEE 1547:2003 with 2014 Amendment 1/UL 1741	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures/ IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems / Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources
IEC 60068-2-1:2007	Environmental testing - Part 2-1: Tests - Test A: Cold
IEC 60068-2-2:2007	Environmental testing - Part 2-2: Tests - Test B: Dry heat
IEC 60068-2-14:2009	Environmental testing - Part 2-14: Tests - Test N: Change of temperature

IEC 60068-2-30:2005	Environmental testing - Part 2-30: Tests - Test Db: Damp heat, cyclic (12 h + 12 h cycle)
LVRT Compliance	As per the latest CERC Guidelines / Order/ Regulations
Grid Connectivity	Relevant CERC Regulations (including LVRT Compliance) and Grid Code as amended and revised from time to time.

As per the Solar Photovoltaics, Systems, Devices and Components Goods (Requirements for Compulsory Registration) Order, 2017, PV Modules and Inverters used in the Grid (including Mini & Micro Grid) Connected solar power Projects shall conform to the Standards Specified as per below and bear the Standard Mark as notified by the Bureau of Indian Standards:

Sl. No. (1)	Product (2)	Indian Standard Number (3)	Title of Indian Standard (4)
1.	Crystalline Silicon Terrestrial Photovoltaic (PV) Modules (Si wafer based)	IS 14286	Crystalline Silicon Terrestrial Photovoltaic (PV) modules - Design Qualification And Type Approval
2.	Thin-Film Terrestrial Photovoltaic (PV) Modules (a-Si, CIGS and CdTe)	IS 16077	Thin-Film Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval
3.	PV Module (Si wafer and Thin film)	IS/IEC 61730 (Part 1) IS/IEC 61730 (Part 2)	Photovoltaic (PV) Module Safety Qualification Part 1 Requirements for Construction Photovoltaic (PV) Module Safety Qualification Part 2 Requirements for Testing

4.	Power converters for use in photovoltaic power system	IS 16221 (Part 1) IS 16221 (Part 2)	Safety of Power Converters for use in Photovoltaic Power Systems Part 1- General Requirements Safety of Power Converters for Use in Photovoltaic Power Systems Part 2- Particular Requirements for Inverters
5.	Utility –Interconnected Photovoltaic inverters	IS 16169	Test Procedure of Islanding Prevention Measures for Utility-Interconnected Photovoltaic Inverters
6.	Storage battery	IS 16270	Secondary Cells and Batteries for Solar Photovoltaic Application General Requirements and Methods of Test

3. CABLES AND CONNECTORS

All cables and connectors to be used for installation of solar field must be of solar grade which can withstand harsh environment conditions for 25 years and voltages as per latest IEC standards. It is recommended that the Cables of 600-1800 Volts DC for outdoor installations should comply with the BS/ EN EN50618/ TUV 2pfg 1169/08/07 for service life expectancy of 25 years.

4. OTHER SUB-SYSTEMS/ COMPONENTS

Other subsystems/ components used in the SPV Power Plants (Cables, Connectors, Junction Boxes, Surge Protection Devices etc.) must also conform to the relevant international/national Standards for Electrical Safety besides that for Quality required for ensuring Expected Service Life and Weather Resistance.

5. AUTHORIZED TEST CENTRES

The PV modules/ Power Conditioners deployed in the Power Plants must have valid test certificates for their qualification as per above specified IEC/ BIS Standards by one of the NABL Accredited Test Centres in India. In case of module types/ equipment for which such Test facilities may not exist in India at present, test certificates from reputed ILAC Member body accredited Labs abroad will be acceptable.

6. WARRANTY (read with the University's NIT – In case common/conflict, the stringent criteria will be preferred which should be beneficial for the University)

- PV modules used in Grid (including Mini & Micro Grid) Connected solar power plants must be warranted for peak output wattage, which should not be less than 90% at the end of 10 years and 80% at the end of 25 years.
- The modules shall be warranted for at least 10 years for failures due to material defects and workmanship.
- The mechanical structures, electrical works and overall workmanship of the grid solar power plants must be warranted for a minimum of 5 years.
- The Inverters/ PCUs installed in the solar power plant must have a warranty for 5 years.

7. IDENTIFICATION AND TRACEABILITY

Each PV module used in any solar power Project must use a RF identification tag. The following information must be mentioned in the RFID used on each module (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions):

i. Name of the manufacturer of PV Module
ii. Name of the Manufacturer of Solar cells
iii. Month and year of the manufacture (separately for solar cells and module)
iv. Country of origin (separately for solar cells and module)
v. I-V curve for the module at Standard Test Condition (1000 W/m^2, AM 1.5, 25^0C)
vi. Wattage, Im, Vm and FF for the module
vii. Unique Serial No. and Model No. of the module
viii. Date and year of obtaining IEC PV module qualification certificate
ix. Name of the test lab issuing IEC certificate
x. Other relevant information on traceability of solar cells and module as per ISO 9000

Site owners would be required to maintain accessibility to the list of Module IDs along with the above parametric data for each module.

8. PERFORMANCE MONITORING

As part of the performance monitoring, the following shall be carried out:

a. The SPD shall maintain the list of Module IDs along with performance characteristic data for each module. This data shall be submitted to SECI/ MNRE.

b. The SPDs must install necessary equipment to continuously measure solar radiation on module plane, ambient temperature, wind speed and other weather parameters and simultaneously measure the generation of DC power as well as AC power generated from the plant. They will be required to submit this data to SECI and

MNRE on line and/ or through a report on regular basis every month for the entire lifetime of the Project.

c.

d. The SPDs shall provide access to SECI/ MNRE or their authorized representatives for installing any additional monitoring equipment to facilitate on-line transfer of data.

e. All data shall be made available as mentioned above for the entire lifespan of the project.

f. The plant SCADA should be Open Platform Communications (OPC) compliant with standard DNP3 and modbus control interfaces over TCP/ IP having the provision to add protocol converters to implement custom and secure communications protocol standard for providing real time online data (including but not limited to irradiance, plant generation (instantaneous/ daily/ monthly/ yearly), Daily Peak Generation, temperature, wind speed etc.) to SECI/ MNRE.

g. Fibre Optic Ethernet Ring network (Managed type Ethernet switches in each Control Room) should be provided between MCR & Inverter Control Rooms.

h. Web-based monitoring should be available, which should not be machine dependent. The web-based monitoring should provide the same screens as available in the plant. Also, it should be possible to download reports from a remote web-client in PDF or Excel format

9. SAFE DISPOSAL OF SOLAR PV MODULES

The SPD will ensure that all Solar PV modules from their plant after their 'end of life' (when they become defective/ non-operational/ non-repairable) are disposed in accordance with the "e-waste (Management and Handling) Rules, 2011" notified by the Government and as revised and amended from time to time.

10. CAPACITY OF SOLAR PV PROJECTS

i) The rated capacity to be installed shall be considered as minimum DC Arrays Capacity and maximum AC Capacity at the delivery point as described below:

Sr. No.	Solar PV Project Capacity Bid	Minimum DC Arrays Capacity to be installed	Minimum Rated Inverter Capacity	Maximum AC Capacity Limit at Delivery point
1	10 MW	10 MW	10 MW	10 MW

ii) Higher DC capacity arrays so as to achieve AC capacity limit is allowed.

iii) For commissioning of the Project, capacity of DC arrays installed shall be considered in multiple of 1 MW per unit. For example, In case of part commissioning of 5 MW

Project, each unit shall be required to have minimum 1 MW DC Arrays Capacity be installed.

NALANDA UNIVERSITY, RAJGIR

CORRIGENDUM-I

TYPE OF CORRIGENDUM- TECHNICAL

Tender Package 4C- On-Grid Solar

No: **NU/ENGG/62/4C/NIT/2020-21/N36/111/Ele** **Dated 23.11.2020**

This is regarding e-tender vide RFP No: NU/ENGG/62/4C/NIT/2020-21/ Vol-II/Govt-PSU/03 Dated 05.11.2020 and CPPP ID No 2020_NUNIV_595562_1) published by Nalanda University for Request For Proposals (RFP) From Eligible PSUs/Govt Agencies/Departments For Engagement of the Executing Agency For Setting Up 5000 KW AC, 1.3ILR/6.5DC Capacity Grid Connected Ground Mounted Solar PV System Including Design, Procurement, Installation, Testing & Commissioning Under EPCC mode at Permanent Campus (Phase I) under Package 4C.

Based on the request from the PSUs reviewed by the Tender Committee, the EMD Fee Rs. 34,25,000/- (as per RFP) submission has been exempted provided other terms & condition remains un-changed.

For further details, kindly visit the Central Public Procurement Portals (CPPP), please.

(Sd)
Registrar
(Nalanda University)

Signature Not Verified
Digitally signed by MANOJ KUMAR
Date: 2020.11.23 21:18:40 IST
Location: eProcure-EPROC