

ANNEXURE- MODEL RFP

Ref: EOI NO 01/ 2018-19/03

Dated 23rd February 2018

Central Public Procurement Portal CPPP (<https://eprocure.gov.in/epublish/app> and tender Id 2018_NU_297558_1)

EXPRESSION OF INTEREST (henceforth EOI) IS INVITED FOR DISCUSSION AND PROPOSSAL FROM THE INTERESTED PARTIES FOR ENERGY and GAS SUPPLY SERVICES (*Solar PV and Bio both combined for the Development of NET-ZERO ENERGY Campus*) UNDER RESCO MODEL AT THE PERMANENT CAMPUS OF NALANDA UNIVERSITY, AT RAJGIR, BIHAR.



EXPRESSION OF INTEREST

NALANDA UNIVERSITY, RAJGIR, BIHAR.

The EOI is being invited through central public procurement portal (e-publishing) CPPP (<https://eprocure.gov.in/epublish/app> and tender Id 2018_NU_297558_1) and the University website (<https://www.nalandauniv.edu.in/tenders/>) for the OFFER with detail methodology for BIO- GAS and Solar Energy Services under RESCO model for development of Net-Zero Energy Campus as per the detailed requirement mentioned in this EOI. In addition to submission through e-mail, the interest/prospective bidders are also invited for the presentation before the University on the scheduled pre-bid **meeting on 6th March 2018**, at Nalanda University, Rajgir. The bidders may present their credentials, similar experience (including past and hands on) solutions for the hybrid design and approach for the development of Net-Zero Energy Campus at Nalanda University, Rajgir. The interested bidders are requested to send their proposal through e-mail [mkumar@nalandauniv.edu.in]. The interested bidders are requested to submit their offer in OFF Line mode also. The documents in offline i.e. physical submission date is same as it for online/e-mail i.e. by 17.03.2018.

DEVELOPMENT OF PERMANENT CAMPUS (PHASE-I) FOR NALANDA UNIVERSITY

This model RFP is just for the understanding of terms and condition of the services of the interested bidder(s) if they appointed. This is based on the model FRP of SECI/MNRE. This is basically for the Energy services required in Nalanda University i.e. per unit/KWH rate of the energy generated from the solar PV system on the campus for next 25 years. However the similar terms and conditions will also be for the supply of BIO GAS to the University to run the CHP –combined heat & Power Engines.

Here Hybrid means- Combination of Solar PV Energy System and BIO system. The NU requirement is solar Energy services with pre-agreed rate for next 25 years and BIO gas supply at standard pressure for next 25 Years.

Type of firms who can participate

The participation in the TENDER and selection process is open to the following, subject to their fulfilling the minimum criteria set forth below.

- I. The consortium, colorations and Joint Ventures are allowed for combined services of Solar Energy and Bio-Gas. The JV/collaborations shall not be considered only for the establishment of solar plant and sale of Solar Energy. Means, if Nalanda University feels to split the works in that case solar energy services shall be considered from a single firm under RESCO Model.
- II. The a single firm is not in business of generation of Bio-Gas in that case the agency involved in the business of solar PV Energy Generation may collaborate or make handshake with the agency expert and involved in the business of Bio Gas generation and may participate in the bidding process under RESCO model. The agreement will be for two different rate i.e unit rate of Bio-Gas services and solar energy per KWH services to the University with a predefined service level matrix and down time.

1. Indian Firms:

Firms/ Entities/ Organizations practicing the consultancy business of Project Management and who have been established and registered in India can participate. The firms/ entities/ organizations can be either a proprietorship or partnership or Limited Liability Partnerships or incorporated companies either private or public. Public Sector Companies sponsored by the Government of India will also be eligible to participate subject to their fulfilling the minimum criteria.

2. Foreign Firms:

Firms/ Entities/ Organizations practicing the consultancy business of Project Management and who have been established and registered in any country other than India but have the requisite permissions and licenses from relevant GOI authorities to carry out business in India can also participate. The firms/ entities/ organizations can be either a proprietorship or partnership or Limited Liability Partnerships or incorporated companies either private or public in their country of registration.

3. Joint Ventures (JV) involving Two or More Indian Firms:

For the purpose of this TENDER, two or more Indian firms / entities / organizations may join hands to collaborate in the bid. Such collaborations may happen in order to take advantage of the experience and credentials of one another. Joint ventures so established before the filing of the bid will be recognized as a JV provided the establishment of the JV is effected in

advance of the TENDER submission or the JV has been established through a fool proof legal instrument.

4. Joint Ventures (JV) involving Two or More Foreign Firms:

For the purpose of this TENDER, two or more foreign firms / entities/ organizations may join hands to collaborate in the bid. Such collaborations may happen in order to take advantage of the experience and credentials of one another. Joint ventures so established before the filing of the bid will be recognized as a JV provided the establishment of the JV is effected in advance of the TENDER submission or the JV has been established through a foolproof legal instrument.

A Joint Venture stake holder and their percentage of share are mentioned in model RFP for the references.

A JV established between agencies wherein one or more of them individually do not qualify to practice/ conduct business in India (i.e. do not have the requisite permissions and licenses from relevant authorities of the GOI) then only the Firm/ entity/ organization in the JV qualifying to practice or conduct business in India will be recognized as the participant. The JV in such a situation will only be a back-end collaborative arrangement for the recognized participant. Further, in such a situation only the experience and credentials of the recognized participant will be valid for evaluation.

5. Joint Venture (JV) between Indian Firms and Foreign Firms:

For the purpose of this TENDER, one or more Indian firm(s)/ entity (ies)/ organization(s) may join hands with one or more foreign firm(s)/ entity (ies)/ organization(s) to collaborate in the bid. Such collaborations may happen in order to take advantage of the experience and credentials of one another. Joint ventures so established before the filing of the TENDER will be recognized as a JV provided the establishment of the JV is effected in advance of the TENDER submission or the JV has been established through a foolproof legal instrument.

A Joint Venture stake holder and their percentage of share are mentioned in model RFP for the references.

A JV established between agencies wherein one or more of them individually do not qualify to practice/ conduct business in India (i.e. do not have the requisite permissions and licenses from relevant authorities of the GOI) then only the Firm(s)/ entity (ies)/ organization(s) in the JV qualifying to practice or conduct business in India will be recognized as the participant(s). The JV in such a situation will only be a back-end collaborative arrangement for the recognized participant(s). Further, in such a situation only the experience and credentials of the recognized participant(s) will be valid for evaluation.

The minimum criteria for being considered in the short listing process are mentioned in the model RFP in details.

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SECTION 1

INTRODUCTION

DEVELOPMENT OF PERMANENT CAMPUS (PHASE-I) FOR NALANDA UNIVERSITY

INTRODUCTION:

Request for Proposal for Selection of Power Producer for Implementation of the Grid Connected RENEWABLE ENERGY THROUGH HYBRID SOURCES (Solar PV Systems for Sale of Solar Power AND Bio-GAS for the Sale of BIO Based) under RESCO Model on THE UNIVERSITY CAMPUS, India in accordance with MNRE/ BERC/ concerned distribution licensee norms. As per our master plan, the followings energy:

Sr No	Energy Source	Time	Capacity in Phase-I The EOI/ tendering is for Phase-I only.	Capacity up to Phase-II (Means Phase-I+II)	Remark: The Bio-based plant (gas +mass both) may also be used during daytime as on required basis, especially for heating & cooling purpose.
01	PV Solar	Day	2.2 MWp	4.2MWp	
02	BIO Gas	Night	1.7 MWp	3.2 MWp	

- The Bidder is advised to read carefully all instructions and conditions of this RFP and understand the scope of work completely. All information and documents required as per the RFP must be furnished with the bid. The University reserves the right to seek clarifications on submitted bids. Failure to provide the information and/or documents as required shall render the Bid(s) unacceptable for further evaluation and may lead to rejection of the bid(s). All bidders qualifying the technical stage shall be treated at par. Financial Bid of the Bidder qualifying at technical stage only shall be opened.
- Bidder shall be deemed to have examined the RFP, to have obtained information in all matters whatsoever that might affect carrying out of works in line with the scope of work specified in the RFP at the Bid price and to have satisfied himself of the sufficiency of his Bid. The Bidder shall be deemed to know the scope, nature and magnitude of the works and requirement of materials, equipment, tools and labour involved, wage structures and as to what all works Power Producer shall have to complete in accordance with the RFP, irrespective of any defects, omissions or errors that may be found in RFP. It is assumed that Bidder has satisfied himself with the site conditions at the Premises of Procurer and has assessed the quantum of work required to comply with the RFP and PPA conditions.
- **Conditions Precedent**
Conditions Precedent for Procurer:
 - Procurer shall allocate sufficient shadow free space in its Premise, within fifteen (15) Days from receipt of confirmation on from the Successful Bidder, and provide last twelve (12) Months of electricity bills (at least of six (6) Months), to the Successful bidder. During fifteen (15) Days, Procurer shall allow Successful Bidder to visit the Premise for assessment of required space and locating the proposed project. Minimum space provided by Procurer shall be based on 110 square feet per kWp for the solar and as per the standards for others.
 - On allocating enough space for installation of Project, Successful Bidder may ask for a change in location within Premise, but final decision on the location shall be taken by Procurer and it shall be binding on Successful Bidder.
 - Procurer should inform NU and Successful Bidder, in writing, about the space provided for Project implementation within 15 Days from receipt of confirmation.
 - Any delay beyond 30 Days in providing sufficient space to Successful Bidder, Procurer’s Project shall be excluded from further deliberations.
 - PPA shall be signed by the Procurer with Successful Bidder within ten (10) Days from the submission of C-PBG to the University.
 - **Conditions Precedent for Successful Bidder:**

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- Confirmation on acceptance of LICA within 15 Days from the date of issuance of LICA and within 15 days after conforming LICA, the Successful Bidder shall undertake Site Survey, assess free capacity of the concerned.
- **Consequences of non-fulfillment of conditions precedent:**
 - In case of any delay in any of the timelines mentioned in clause 1.4.1 and 1.4.2, the University shall take appropriate decision based on circumstances and may provide further time to complete the respective conditions precedent.
 - Whereas, any delay in timelines provided to Procurer and Successful Bidder may lead to cancellation of LICA.
 - If L-1 (successful bidder) back or cancelled by the University then may invite to L-2 for PPA on the same rate quoted by the L-1 and so on qualified bidder may be asked on the same L-1 rate. The EMD and other securities of the L-1/ will forfeited by the University.
 - At any point of time, if it is found that Successful Bidder of a Project Group is non-compliant or is not signing the PPA for any specific type of Projects in a Project Group, NU may take strict action against the Successful Bidder. It may lead to cancellation of all LICAs issued to that Successful Bidder for Projects.
 - The e-tender shall be called on CENTRAL PUBLIC PROCUREMENT PORTAL and hence prospective may shall ensure the registration and digital certificate well before the submission of tender timeline. Department shall not be responsible in any way for delay /difficulties /inaccessibility of the downloading facility from the website for any reason whatever. The University shall not be responsible in any way for delay /difficulties /inaccessibility of the downloading facility from the website for any reason whatever.

SECTION 2

MODEL INSTRUCTION TO THE BIDDERS

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- The bidding process is for approximate (2.5) MWp capacity of Projects under RESCO mode for Implementation of Grid Connected hybrid Systems under RESCO Model. Bidders are advised to note that the Grid connected projects may be either one or combination of following two categories- Grid connected net metered systems; and Grid connected systems for consumption within premises with no export of power in line with the policy of THE BIHAR STATE.
- The Bidder is advised to read carefully all instructions and conditions appearing in this document and understand them fully. All information and documents required as per the bid document must be furnished. Failure to provide the information and / or documents as required may render the bid technically unacceptable.
- The bidder shall be deemed to have examined the bid document, to have obtained his own information in all matters whatsoever that might affect carrying out the works in line with the scope of work specified elsewhere in the document at the offered rates and to have satisfied himself to the sufficiency of his bid. The bidder shall be deemed to know the scope, nature and magnitude of the works and requirement of materials, equipment, tools and labour involved, wage structures and as to what all works he has to complete in accordance with the bid documents irrespective of any defects, omissions or errors that may be found in the bid documents.
- Bidder must meet the eligibility criteria independently as a Bidding Company or as a Bidding Consortium with one of the members acting as the Lead Member of the Bidding Consortium. Bidder will be declared as a Qualified Bidder based on meeting the eligibility criteria and as demonstrated based on documentary evidence submitted by the Bidder in the Bid. In case of a Bidding Consortium, the Financial Eligibility criteria like Annual turnover or Net worth as indicated in Clause 3.3.3 shall be fulfilled by the Lead Member or Parent Company of the Lead Member while the Technical Eligibility Criteria shall be fulfilled by consortium members. In case bidder is a consortium, a Consortium Agreement shall be furnished along with the bid.
- Financial Consortium is not allowed in this Bidding Process. Consortium is only permitted for Technical Partnership. Further in-case where the bidding company has used the financial eligibility criteria of its parent company then it needs to be ensured that no change in the controlling equity of the Bidding Company is done before 2 years from the date of commissioning of the sanctioned capacity requires prior approval of NU.
- All members of the consortium should be registered as a Company only. However, Members of the Consortium may form the Project Company.

SECTION 3

ELIGIBILITY CRITERIA:

GENERAL

The Bidder should be a body corporate incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto or a Partnership Firm having executed partnership deed and registered as per sections 58 & 59 of the Partnership Act, 1932, as amended or a Limited Liability Partnership Firm (LLP) registered under section 12 of Limited Liability Partnership Act, 2008, as amended or registered Sole Proprietor. A copy of certificate of incorporation, partnership deed or LLP/ Sole Proprietor registration, as applicable and relevant, shall be enclosed with **FORMAT attached "GENERAL PARTICULARS OF THE BIDDERS"**.

The Bidder should be a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment thereto, Government owned Enterprises, **foreign company(ies) from all countries in the World who are registered and incorporated in their respective countries as per the local act and engaged in the business of Power/Infrastructure, Limited Liability.** In case the bidder is a foreign company/entity and is bidding independently or as a partner of JV / Consortium, the bidder needs to establish a subsidiary at India as per applicable Rules of Government of India in the event of Issuance of LOA. The said process shall be completed maximum **within 60 days from the date of issuance of LOA.** Further, Bidder must note that for evaluation of qualification against Financial Eligibility Criteria, following conditions shall be applicable:

- a) Bidder shall establish net-worth as required by this RFP.
- b) In-case Bidder/Lead Member of Consortium has referred its Affiliate to meet the Financial Eligibility criteria, then relationship with the Affiliate by the Bidder shall continue i.e., equity holding should be more than 26% for period of the First Operational Year. Further, Affiliate of Bidder and member of Consortium shall furnish information as sought in FORMAT 9 and FORMAT 12.

Partnership Firms and MSME Vendors, barring Government Department as well as those firms from the countries against whom sanction for conducting business is imposed by Government of India and barring those firms with whom business is banned by the Employer. A copy of certificate of incorporation shall be furnished along with the bid in support of above. The Bid Processing Fees and Bid Bond are exempted for MSME Vendors / Developers registered under NSIC / Udyog Aadhaar Category only.

The prospective bidder shall meet the Eligibility Criteria. In case of consortium, Lead Member must independently meet the Eligibility Criteria. Consortium of maximum of three Companies is allowed under RFP. Consortium may comprise of Companies or Sole Proprietor or Limited Liability Partnership Firms or Partnership Firms or any combination thereof.

Bidder or any member of consortium having been blacklisted by The University or by any Govt./PSU, for whatever reasons, shall not be eligible/ allowed to participate in this RFP. Bidder or consortium shall be ineligible for participation in this RFP in following cases:

- I. If Bidder or any member of consortium has not performed satisfactorily in the Work Order(s) of The University, leading to cancellation of Work Order(s) of value more than or equal to twenty five percent (25%) of cumulative value of Work Order(s) awarded in last five (5) Years.
- II. If Bidder or any member of consortium is involved in litigation or arbitration with SBPDCL/BSEB/NBPDCL/BREDA-The University/MNRE/SECI/ANY STATE OR CENTRAL DEPARTMENT OR MINISTRY OF INDIA arising out of work completed or under execution by it, of value more than or equal to twenty five percent (25%) of cumulative value of Work Order(s) awarded in last five (5) Years.

TECHNICAL ELIGIBILITY CRITERIA:

The Bidder should have designed, supplied, installed & commissioned at least one Grid connected Renewable Hybrid Energy System (combination of solar and bio or at least solar PV) having a capacity of not less than one project of 2MW or 1000 kW (1MW) of two project which should have been commissioned at least six months prior to Techno-Commercial Bid Opening date. The list of project commissioned at least 6 months prior to Techno-Commercial Bid Opening date, indicating whether the project is grid connected, along with a scanned copy of the Commissioning certificate and Work order / Contract / Agreement from the Client / Owner shall be submitted (online) in support of Clause as above.

FINANCIAL ELIGIBILITY CRITERIA:

- (a) The Minimum Average Annual Turnover (MAAT) of the bidder in the last three financial years (i.e. FY 2014-2015, 2015-2016 and 2016-2017) should be INR FOUR crores (2 Crores per MW) on standalone basis. This must be the individual Company's turnover and not that of any group of Companies. A summarized sheet of average turn over certified by registered CA should be compulsorily enclosed along with corresponding annual accounts.

OR

- (b) Net worth equal to or greater than the value calculated at rate of Rs. 1.50 Crore per MW of capacity offered by the Bidder in its Bid. "Net Worth" of the Bidder shall be calculated as per Company Act 2013.
- (c) Bidders shall furnish documentary evidence (online as well as offline), duly certified by Authorized Signatory and the Statutory Auditor / Practising Chattered Accountant of the Bidding Company in support of their financial capability.
A scanned copy of certificate of incorporation shall be furnished in the bid (through online mode)
- (d) The Bidder will provide a copy each of audited annual report of previous three financial years for ascertaining their turnover and Net Worth along with Bank Statements for the purpose of verification.
- (e) The Net Worth of the Bidder as on the last day of the preceding financial year shall not be less than total paid-up share capital. However, in case, the bidder is subsidiary of a holding company, the net worth of the bidder as on the last day of the preceding financial year shall not be less than 75% of total paid-up share capital and in such case, bidder has to submit a board resolution of the holding company indicating that "holding company shall support the bidder financially or otherwise, to execute the project successfully". Also, the Net Worth of the Holding Company of the Bidder, as on the last day of the preceding financial year shall not be less than total paid-up share capital.
- (f) In case the bidder is not able to furnish its audited financial statements on standalone entity basis, the unaudited unconsolidated financial statements of the bidder can be considered acceptable provided the bidder furnishes the following further documents for substantiation of its qualification:
- (g) Copies of the unaudited unconsolidated financial statements of the bidder along with copies of the audited consolidated financial statements of the Holding Company.
- (h) A Certificate from the Director of the Holding Company, stating that the unaudited unconsolidated financial statements form part of the Consolidated Annual Report of the company. In case where audited results for the last preceding financial year are not available, certification of financial statements from a practicing Chartered Accountant shall also be considered acceptable, provided the bidder provides the detailed Financial Statements certified by the Management of the company.

NOTES:

- Paid up share capital will include
 - i. Paid up equity share capital

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- ii. Fully, compulsorily and mandatorily convertible preferential shares
- iii. Fully, compulsorily and mandatorily convertible Debentures
- Share premium will form an integral part of the net worth provided it is realized in cash or cash equivalents

☐ Other income shall not be considered for arriving at annual turnover.

INCORPORATION OF A PROJECT COMPANY

In case the Bidder wishes to incorporate a Project Company, in such a case Bidder if selected as a Successful Bidder can incorporate a Project Company. Bidder shall be responsible to get all clearance required/ obtained in the name of the Bidding Company transferred in the name of the Project Company.

The aggregate equity share holding of the Successful Bidder in the issued and paid up equity share capital of the Project Company shall not be less than fifty-one percent (51%) up to a period of Five (5) years from the date of commissioning of the entire Sanctioned Capacity of the Project Developer.

In case the bidder is a foreign company/entity and is bidding independently or as a partner of JV / Consortium, the bidder needs to establish a subsidiary at India as per applicable Rules of Government of India in the event of Issuance of LOA. The said process shall be completed maximum within 60 days from the date of issuance of LOA.

JOINT VENTURE CRITERIA

In case a bid is submitted by a Joint Venture (JV) of two or more firms as partners, they must meet the following requirements:

- i. The lead Partner shall meet, not less than 50% of the Financial eligibility criteria as per above clause.
- ii. All the partners of the JV shall collectively meet 100% of Technical Experience criteria as per clause 3.3.2 of IFB.
- iii. The net worth of each Partner of JV should be positive.
- iv. However, all the partners shall jointly meet the 100% financial eligibility criteria as per clause 3.3.3 of IFB.

Note:

- i. A Joint Venture (JV), if incorporated as a Company, is required to submit Bid Security in the name of Joint Venture only. In case of Consortium or a JV has not formed a Registered Company, the Bid Security shall be submitted in the name of the Lead Partner.
- ii. JV is also required to submit form of Power of Attorney (as per Appendix) and Form of undertaking by the JV partners (As per Appendix).
- iii. JV is also required to declare scope of work to be executed by each partner of JV.

BID SUBMISSION BY THE BIDDER

E-TENDERING MODE THROUGH CPPP FOLLOWED BY SUBMISSION OF HARD COPY PHYSICALLY.

The information and/or documents shall be submitted by the Bidder as per the formats specified in this RfS document. Strict adherence to the formats wherever specified, is required. Wherever, information has been sought in specified formats, the Bidder shall refrain from referring to brochures/pamphlets. Non-adherence to formats and / or submission of incomplete information may be a ground for declaring the Bid as non-responsive. Each format has to be duly signed and stamped by the authorized signatory of the Bidder then scanned and uploaded in the Techno- Commercial Bid Part.

The Bidder shall furnish documentary evidence in support of meeting Eligibility criteria. Bidder shall also furnish unconsolidated/ consolidated audited annual accounts in support of meeting financial requirement, which shall consist of unabridged balance sheet, profit and loss account, profit appropriation account, auditors report, etc., as the case may be of Bidding Company or Financially Evaluated Entity for any of the last three (3) financial years immediately preceding the Bid Deadline which are used by the bidder for the purpose of calculation of Annual Turnover or of last Financial Year in case of Net Worth.

In case the annual accounts for the latest financial year are not audited and therefore the bidder cannot make it available, the applicant shall give certificate to this effect from the Statutory Auditor and Authorized signatory along with provisional Annual Account signed by directors of the company and certificate by Chartered Accountant. In such a case, the Applicant shall provide the Audited Annual Reports for 3 (Three) years preceding the year; or from the date of incorporation if less than 3 years; for which the Audited Annual Report is not being provided.

BID DOCUMENTS:

BID FORMATS: E-TENDERING MODE THROUGH CPPP FOLLOWED BY SUBMISSION OF HARD COPY PHYSICALLY. The Bid in response to this RFP shall be submitted by the Bidder in the manner provided in the RFP. The Bid shall comprise of the following:

ENVELOPE- I (COVERING LETTER, BID PROCESSING FEE AND BID SECURITY)

The following documents are to be submitted (SCANED COPY THROUGH E- TENDERING/ONLINE MODE FOLLOWED BY SUBMISSION OF HARD COPY IN PHYSICAL):

- Covering Letter as per prescribed FORMAT 1.
- Bid Processing Fee
- Bid Security of required value as mentioned in Clause 3.17, FORMAT 4, if applicable;

ENVELOPE- II TECHNICAL DOCUMENTS:

The following documents are to be submitted (SCANED COPY THROUGH E-TENDERING/ONLINE MODE FOLLOWED BY SUBMISSION OF HARD COPY IN PHYSICAL):

- Original power of attorney (on the stamp value of Rs.1000/-, as per FORMAT 7) issued by the Bidder in favor of the authorized person signing the Bid, in the form prescribed in this RFP (Power of Attorney must be supplemented by Board Resolution to above effect for the company incorporated under Company Act 1956 or Company Act-2013).
- General particulars of Bidder as per FORMAT 2 of this RFP, including Certificate of Incorporation of Bidder/ Affiliate as applicable.
- Bidder's composition and ownership structure as per prescribed FORMAT 3 as shareholding certificate certified by Director/practicing Chartered Accountant/Company Secretary and authorized signatory of the Bidder (as applicable).
- FORMAT 8 for meeting Financial Eligibility Requirements along with all supporting documents.
- FORMAT 9, if applicable, supported by Board Resolution of the Affiliate.

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- Undertaking(s) from the member of Consortium or Affiliate of Bidder/ member of Consortium as per FORMAT 10, as applicable.
- FORMAT 12 for Consortium Agreement, if applicable.
- FORMAT 13 on Declaration for submission of Bid.
- Signed and stamped Copy of RFP including amendments & clarifications by authorised signatory of Company on each page.
- Signed and stamped copy of minutes of pre-bid meeting, drawings/corrigendum (if any).

COST OF BIDDING

The bidder shall bear all the costs associated with the preparation and submission of his offer, and the company will in no case be responsible or liable for those costs, under any conditions. The Bidder shall not be entitled to claim any costs, charges and expenses of and incidental to or incurred by him through or in connection with submission of bid even though NALANDA UNIVERSITY may elect to modify / withdraw the invitation of Bid.

BID BOND (To be submitted in original form in offline and the Scan copy of same must be uploaded by the bidder)

The Bidder shall furnish Interest Free Bid Bond in the form of Bank Guarantee (BG) / Demand Draft drawn in favour of "NALANDA UNIVERSITY", payable at RAJGIR.

The validity of Bid Bond shall be for a period of 6 months from the Bid Deadline. The Bid Bond of unsuccessful bidders shall be returned within 30 days from the date of issuance of Letter of Allocation(s) on bidder's request. Bid bond(s) of Successful bidder shall be released after the confirmation of the performance bank guarantee in the format prescribed by NU and after the receipt and confirmation of their C-PBG's from their respective banker.

The formula applicable to calculate the Bid Bond amount = (INR 12 Lakhs) X Bid Capacity in MWp as per SECI guideline (The university will calculate at the time of NIT publish hence this for the understanding of model RFP)

The Bid Bond shall be denominated in Indian Rupees and shall:

- i. At the Bidder's option, be in the form of either a Demand Draft or a Bank Guarantee as per prescribed format or FDR from the bidder account from the nationalised/scheduled list of Banks.
- ii. Be confirmed for payment by the branch of the bank giving the Bank Guarantee at New Delhi.
- iii. Be submitted in its original form; copies will not be accepted and remain valid for a minimum period of 6 months from the date of original Techno Commercial bid opening, or beyond any period of extension subsequently requested as per above clause. In case of extension in bid opening date, bidder has to either submit the amended BG valid for 06 months from actual date of bid opening or amended BG if requested by NU after actual bid opening for requisite period.
The Successful Bidder shall sign and stamp the Letter of Allocation (LOA) and return the signed & stamped duplicate copy of the same to NU within 30 days from the date of its issuance.

The Bid Bond shall be forfeited without prejudice to the Bidder being liable for any further consequential loss or damage incurred to NU under following circumstances:

- a. Hundred Percent (100%) of Bid Bond amount of the proposed capacity, if a Bidder withdraws/revokes or cancels or unilaterally varies his bid of any State in any manner during the period of Bid Validity specified in the NIT/RFP document and in accordance with the above clause.
- b. Hundred Percent (100%) of Bid Bond amount of the proposed capacity, if the Successful Bidder fails to unconditionally accept the Letter of Allocation of any State within 30 days from the date of its issuance.
- c. Hundred Percent (100%) of Bid Bond amount of the proposed capacity, if the successful Bidder fails to furnish the "Performance Security" after 60 days.

BANK GUARANTEES

Construction - Performance Bank Guarantees (C-PBG):

The Successful Bidder shall furnish C-PBG at rate of twenty five (25) lakhs/MWp or part thereof from a nationalized/ scheduled bank in the form of:

FDR in favour of NALANDA UNIVERSITY A/C of bidder

OR

Bank Guarantee as per prescribed FORMAT 5 Submitted C-PBGs shall be valid tillEXECUTION PERIOD from the Effective Date with a further claim period of six (6) Months, or required to be extended as deemed necessary. The Successful Bidder shall furnish C-PBG within fifteen (15) Days from the date of receipt of NU response on change in PPA Capacity and before the signing of PPA. Failure to submit CPBG, as above, without sufficient justification acceptable to the NU shall be considered as refusal to execute the PPA and NU shall have right to forfeit the Bid Security.

NU shall release C-PBG to Successful Bidder within three (3) Months from COD. In case of delay in signing of PPA, of more than two (2) Months, from the Submission of C-PBG, NU shall cancel the issued LICA and release the C-PBG within fifteen (15) days from the cancellation of LICA.

Further, in case of delay in achieving/fulfilling any milestone as mentioned in COD Schedule or as per Conditions Subsequent of PPA, C-PBG shall be forfeited. In case, Power Producer fails to achieve the COD of the Project within the given timeline, NU shall forfeit the BG.

NU shall release BG to Successful Bidder within three (3) Months from COD.

LIQUIDATED DAMAGES:

In case of natural calamity or any reason beyond the control of Power Producer or unavoidable circumstances, the work is not completed within the given timeframe, NU may consider grant of extension after the reason submitted by Power Producer are found to be satisfactory, Delay in receipt of equipment of Solar System like solar panel, PCU, etc. from the vendors, to whom the Bidder has placed order, shall not be considered as a reason for extension.

If the Power Producer fails to execute the work and Commission the project on or before the SCOD, NU shall have the right to revoke the C-PBG at 5% of C-PBG value per week from the SCOD subject to maximum of twenty (20) weeks delay. In case of delay beyond extended timeline of twenty (20) weeks, NU may

(a) Allow Power Producer to work with additional penalty up to ten (10) more Weeks. Power Producer shall be required to submit additional C-PBG of 50% of earlier C-PBG value in the form as mentioned ABOVE. LD of 5% of additional C-PBG per week or part thereof shall be levied on Power Producer.

b) Cancel the PPA and Power Producer shall be liable to pay Liquidated Damages to the NU.

Liquidated Damages on non-compliance during Construction Period

Liquidated Damages shall be imposed on Power Producer at the rate of 2% of C-PBG per week of delay or part thereof, in case of failure of adhering in submission of details as mentioned in condition subsequent of the Power Producer. Procurer/NU shall terminate PPA and forfeit the C-PBG, in case of delay beyond four (4) Weeks in submission of requisite details.

Power Producer shall be responsible for completion of all activities mentioned in COD Schedule within the given time frame. Power Producer shall include the detail of COD Schedule in monthly progress report.

Progress in the implementation of the Project shall be monitored by NU for milestones mentioned in COD Schedule.

Delay beyond ten (10) Days to achieve any milestone mentioned in COD Schedule shall attract penalty of 0.5% of C-PBG per week of delay or part thereof except for final milestone.

Any of the penalty accumulated during Construction Period shall not be levied in case Commissioning will be achieved on or before SCOD

PERFORMANCE MONITORING MECHANISM AND PENALTIES FOR UNDER PERFORMANCE:

The Power Producer shall demonstrate that the said project delivers Capacity Utilization Factor ("CUF") of at least 15%, adjusted for seasonality as tabulated below, for one (1) day before declaration of successful Completion of the Project.

Month kWh generation in 1 day per kWp system

January	3.71
February	4.14
March	4.33
April	4.27
May	3.99
June	3.30
July	2.56
August	2.33
September	3.21
October	3.89
November	3.90
December	3.56

For the purpose of measuring CUF:-

Power Producer shall ensure that all Projects are Remote Monitoring System ("RMS") enabled. The data from such RMS enabled Projects would be monitored by NU, to ensure desired level of performance. The Power Producer shall ensure and shall have no objection to provide access to RMS for data acquisition and monitoring the performance by NU.

NU or its authorized agency reserves right to validate the authenticity of such data for which Power Producer shall extend full access and its cooperation.

POWER PRODUCER'S DEFECT LIABILITY:

If it shall appear to the NU that any supplies have been executed with unsound, imperfect or unskilled workmanship, or with materials of any inferior quality, the Power Producer shall forthwith rectify or remove and replace that item so specified and provide other proper and suitable materials at its own charge and cost if so desired by NU in writing.

The Power Producer shall also be undertaking the operation and maintenance of the project and consequently shall be required to rectify any defects that emerge during the operation & maintenance of the Project for the entire term of the PPA.

OPENING OF BID:

Technical bid (Envelope I and Envelope II) of the Bidder shall be opened at the time mentioned in Key Dates at the venue indicated in this RFP, in the presence of one representative from each of the Bidder who wish to be present.

Name of the Bidder, Bid Security and Project Groups shall be read out to all the Bidder at the time of opening of Envelope-I.

RIGHT TO WITHDRAW THE RFP AND TO REJECT ANY BID:

This RFP may be withdrawn or cancelled by the NU at any time without assigning any reasons thereof. The NU further reserves the right, at its complete discretion, to reject any or all of the Bids without assigning any reasons whatsoever and without incurring any liability on any account.

The NU reserve the right to interpret the Bid submitted by the Bidder in accordance with the provisions of the RFP and make its own judgment regarding the interpretation of the same. In this regard the NU shall have no liability towards any Bidder and no Bidder shall have any recourse to the NU with respect to the selection process.

Bid(s) that are incomplete in any respect or those that are not consistent with the requirements as specified in this RFP or those that do not adhere to formats prescribed herein, wherever specified, may be considered non-responsive. However, NU reserves the right to seek additional information/clarifications from the Bidders, if found necessary, during the course of evaluation / processing of the Bid(s). Non-submission or delayed submission of such additional information or clarifications sought by NU may be a ground for rejecting the Bid(s). Strict adherence to the documents required to be submitted in Envelope – I, shall be ensured, failure on this account may lead to rejection of Bid.

NU reserves its right to vary, modify, revise, amend or change any of regarding acceptance of Bid by NU will be full and final.

ZERO DEVIATION:

This is a zero deviation bidding process. Bidder is to ensure compliance of all provisions of the RFP and submit their Bid accordingly. Bid with any deviation to the RFP conditions shall be liable for rejection without any explanation.

EXAMINATION OF BID DOCUMENT:

Before submission of Bid, Bidder is required to carefully examine the technical Specification, terms and conditions of RFP/ Agreement, and other details relating to envisaged work as per the RFP.

The Bidder shall be deemed to have examined the RFP and Agreement, to have obtained information on all matters whatsoever that might affect the execution of the Project activity and to have satisfied himself as to the adequacy of his Bid. The Bidder shall be deemed to have known the full scope, nature and magnitude of the work and related supplies and the requirements of material and labour involved etc. and as to all supplies he has to complete in accordance with the RFP.

Bidder is advised to submit the Bid on the basis of conditions stipulated in the RFP. Bidder's standard terms and conditions, if any for what-so-ever reasons, will not be considered. The cancellation / alteration / amendment / modification in RFP shall not be accepted by NU and shall invite rejection of such Bid.

Bid not submitted as per the instructions to Bidder is liable to be rejected. Bid shall confirm in all respects with requirements and conditions referred in this RFP or its amendments, if any.

The Comprehensive O&M of solar PV system shall include wear, tear, overhauling, machine breakdown, appropriate insurance (if and as required), and replacement of defective modules, invertors / Power Conditioning Unit (PCU), spares, consumables & other parts for a period of twenty five (25) Operational Years.

TAXES AND DUTIES:

The Financial Bid should include all taxes and duties etc., if any. Power Producer shall be entirely responsible for all taxes, duties, license fees, etc. All taxes payable shall be payable by the Power Producer. However, if any new change in tax/duty is effected in the period after the Bid Deadline and any time during the period of Agreement, the same will be passed on by the Power Producer to the Procurer.

To evaluate impact of any change of laws in future, the rates applicable for each component shall be considered in the ratio of:-

- Material Component- 80% of the Benchmark cost
- Erection, Installation and Commissioning (I&C) component- 20% of the Benchmark Cost and
- Yearly operational cost will be considered as 3% of the Benchmark cost The Quoted Tariff would be proportionally adjusted as below based on the variations in the capital cost and operational cost on account of change in taxes. Adjustment shall be allowed only if the extent of variation in taxes is beyond the deviations specified in table below:

Variation due to change in taxes		Adjustments to the tariff
Adjustments to the tariff		
Capital Cost		
(Adjustments will be	+10%	+8%
considered only if the change is more than 2.5%)	-10%	-8%
Operational Cost (Adjustments will be made only if change is more than 5%)		
	+ 10%	+ 1
	-10%	-1%

SCHEDULE OF RATES FOR ADDITIONAL WORKS:

The Rates of additional electrical work within the premises will be decided on the basis of at par rates of Schedule Of Rates (SOR), for Electrical works, Central Public Works Department (PIU), Patna, Govt. of Bihar. in force from 1st August 2016 issued by Project Director, CPWD-Patna, amended from time to time.

The rates of additional civil work shall be as per at par the rates of Schedule Of Rates (SOR) for building works, Central Public Works Department, (PIU), Patna, Govt. Bihar, in force from 1st August 2016 issued By Project Director, amended from time to time;

The Rates of additional electrical work outside the premises shall be as per the schedule of rates (SOR), at par, for electrical works, South Bihar Power Distribution Company Ltd. (SBPDCL), amended from time to time;

PROGRESS REPORT:

DEVELOPMENT OF PERMANENT CAMPUS (PHASE-I) FOR NALANDA UNIVERSITY

Power Producer shall have to commission the Project within nine (9) Months from the Effective Date of PPA. The Power Producer shall submit monthly Progress report to NU, in prescribed pro-forma to be designed in discussion with Power Producer, for the period from signing of PPA to CoD. NU will have the right to depute his/ their representatives to ascertain the progress at the premises of work of the Power Producer.

FORCE MAJEURE:

For purpose of this RFP, force majeure shall mean an event beyond the control of the Power Producer and not involving his fault or negligence and not foreseeable, in its contractual capacity. Such events may include but are not restricted to Acts of God, wars or revolutions, fires, floods, epidemics, quarantine restriction, fright embargoes, site clearance, etc. Whether a force majeure situation exists or not, shall be decided by NU and its decision shall be final and binding on the Power Producer and all other concerned.

In the event that the Power Producer is not able to perform his obligations under this Agreement on account of force majeure, he will be relieved of his obligations during the force majeure period.

If a force majeure situation arises, the Power Producer shall promptly notify NU in writing, not later than seven (7) Days from the date such situation arises (in case, Communication is not possible to NU, Power Producer shall notify NU not later than one (1) Day from the day when communication system will be restored). The Power Producer shall notify NU not later than three (3) Days of cessation of force majeure conditions. After examining the cases and associated facts, NU shall decide and grant suitable additional time for the completion of the work, if required.

Failure of such Power Producer in timely intimating NU will suspend its right for any relief otherwise eligible under such force majeure conditions.

APPLICABLE LAW:

The Agreement shall be interpreted in accordance with the laws of India.

SETTLEMENT OF DISPUTE:

If any dispute of any kind whatsoever arises between NU and the Power Producer / Successful Bidder in connection with or arising out of the Agreement including without prejudice to the generality of the foregoing, any question regarding the existence, validity or termination, the parties shall seek to resolve any such dispute or difference by mutual consent.

If the parties fail to resolve, such a dispute or difference by mutual consent, within forty five (45) Days of its arising, then the dispute shall be referred by either party by giving notice to the other party in writing of its intention to refer to arbitration conducted under the provisions of the **CPWD WORKS MANUAL/PRACTISE AND DECESSION OF THE ARBITATOR** shall be final and binding up on the parties. The language of the arbitration proceedings and that of the documents and communications between the parties shall be English. All the dispute will be settled in the High Court of BIHAR i.e. PATNA. No arbitration proceedings will commence unless such notice is given.

Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the Agreement unless they otherwise agree.

Cost of arbitration shall be borne as per the award of the arbitration.

LANGUAGE:

All documents, drawings, instructions, design data, calculations, operation, maintenance and safety manuals, reports, labels and any other data shall be in English Language. The Agreement and all correspondence between the NU and the Bidder shall be in English language.

OTHER CONDITIONS:

Power Producer has to obtain all the necessary approvals/Consents/Clearances required for design, engineering, supply, installation, testing and commissioning including Comprehensive O&M of the Project including connectivity to the licensee’s network. NU and the Procurer will extend possible cooperation to Power Producer in this regard. However, the Power Producer shall be solely responsible for obtaining such approvals/consents/clearances.

The Power Producer shall not transfer, assign or sublet the Project under the Agreement pursuant to this RFP to any party other than lenders.

AMENDMENT

NU reserves the right to modify, amend or supplement RFP documents including all formats and annexures at any time. Interested and eligible Bidder are advised to follow and keep track of NU website for updated information. No separate notifications will be issued for such notices/ amendments/ clarification etc. in the print media or individually. NU shall not be responsible and accountable for any consequences to any party.

SUCCESSORS AND ASSIGNS:

In case the Power Producer may undergo any merger or amalgamation or a scheme of arrangement or similar re-organization and this PPA is assigned to any entity partly or wholly, the PPA shall be binding mutatis mutandis upon the successor, entities and shall continue to remain valid with respect to obligation of the successor, entities.

SEVERABILITY:

It is stated that each paragraph, clause, sub-clause, schedule or annexure of this contract shall be deemed severable, and, in the event of the unenforceability of any paragraph, clause sub-clause, schedule or the remaining part of the paragraph, clause, sub-clause, schedule annexure & rest of the contract shall continue to be in full force and effect.

PRICE PREFERENCE:

There is no relaxation in terms of any conditions of the RFP or Processing Fee or Bid Security or C-PBG or BG for any private company or State or Central company/agency.

FRAUD AND CORRUPTION

The Power Producers, suppliers and contractors and their sub-contractors under the contracts are required to observe the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this, the NU:

- I. Defines, for the purpose of this provision, the terms set forth below as follows:
 - i) **“corrupt practice”** is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - ii) **“fraudulent practice”** is any act or omission, including a misrepresentation, that knowingly or recklessly misleads or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;
 - iii) **“collusive practice”** is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
 - iv) **“coercive practice”** is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
 - v) **“obstructive practice”** is
 - a. Deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede a NU’s investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing

its knowledge of matters relevant to the investigation or from pursuing the investigation;

or

- b. Acts intended to materially impede the exercise of the NU’S inspection and audit rights.
- II. Will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for the contract in question;
- III. Will sanction a firm or individual, including declaring ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices in competing for, or in executing, a contract; and
- IV. Will have the right to require that the provision be included in Bidding Documents and in contracts, requiring Bidders, suppliers, and contractors and their sub-contractors to permit the NU to inspect their accounts and records and other documents relating to bid submission and contract performance and to have them audited by auditors appointed by the NU.

SECTION 4

BID EVALUATION

BID EVALUATION:

THE EVALUATION PROCESS COMPRISES THE FOLLOWING FOUR STEPS:

- a) Step I-Responsiveness check of Technical Bid
- b) Step II-Evaluation of Bidder's fulfilment of Eligibility Criteria described in Section - I
- c) Step III-Evaluation of Financial Bid
- d) Step IV-Selection of Successful Bidder

RESPONSIVENESS CHECK OF TECHNICAL BID:

The Technical Bid submitted by Bidder shall be scrutinized to establish responsiveness to the requirements laid down in the RFP. Any of the following may cause the Bid to be considered "Non-responsive" and liable to be rejected, at the sole discretion of NU, subject to sufficient justification:

Bid not submitted in prescribed envelop format.

Bid that are incomplete, i.e. not accompanied by any of the applicable formats;

Bid not accompanied by contents of Envelope – I as mentioned in Clause/ABOVE.

Bid not signed by authorized signatory and /or stamped in the manner indicated in this RFP; Material inconsistencies in the information /documents submitted by the Bidder affecting the Eligibility Criteria;

Information not submitted in the formats specified in this RFP;

Bid being conditional in nature;

Bid not received by the Bid Deadline;

Bid having conflict of interest;

Bidder makes any misrepresentation;

Any other act of Bidder which may be unlawful for the purpose of this RFP.

Bid submitted is not in requisite format(s).

Each Bid shall be checked for compliance with the submission requirements set forth in this RFP before the evaluation of Bidder's fulfilment of Eligibility Criteria is taken up.

EVALUATION OF FINANCIAL BID:

Financial Bid of the Eligible Bidder shall be opened online in presence of the representatives of such Eligible Bidder, who wish to be present, on date as may be intimated by NU to the Bidder through NU's website or E-mail OR ccpp. The evaluation of Financial

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Bid shall be carried out based on the information furnished. The Financial Bid submitted by the Bidder shall be scrutinized to ensure

- I. Conformity with the RFP. Any Bid not meeting any of the requirements of this RFP may cause the Bid to be considered "Non-responsive".

SUCCESSFUL BIDDER(S) SELECTION:

Bid qualifying in as per Eligibility Criteria shall only be evaluated in this stage. All Bidder qualifying Eligibility Criteria shall be placed as equal. Technical qualifications must for a Bidder to become eligible for assessment on financial criteria. For each Project Group, Eligible Bidder shall be ranked from the lowest to the highest based on the Financial Bid submitted by the Bidder. Eligible Bidder shall quote the First Year Tariff ("Quoted Tariff") in the Financial Bid, considering the provisions of escalation and format specified **IN THIS RFP**. The Quoted Tariff shall be calculated up to four (4) decimal places. The Bid shall be evaluated to identify one Qualified Bidder, subject to the provisions of the above clause. Eligible Bidder with lowest Quoted Tariff for given scope of work under each Project Group shall become the Qualified Bidder. LICA shall be issued to such Qualified Bidders and they shall be declared as Successful Bidders.

In case where two or more Eligible Bidders bid the same lowest Quoted Tariff for this RFP, Eligible Bidder with highest Net worth shall be declared as Qualified Bidder.

**SCOPE OF WORK
DETAILS OF WORKS:**

Designing, engineering, supply, installation, testing and Commissioning of PERMANENT CAMPUS OF NU capacities of Project as per standard design and specifications and connecting up to existing Mains/ACDB and interfacing internal electrical loads of Project with licensee's network/electrical loads with Comprehensive O &M for period of twenty five (25) Operational Years for Sale of Power. Power Producer would have to take approval for the interfacing the Project with Grid/Electrical Loads of every location from distribution licensee/ CEIG, a applicable. Comprehensive O &M for twenty five (25) Operational Year shall be required for each of the Project.

Bidder shall be responsible for all the works related to Commissioning and operation for twenty five (25) Operational Years of Project. In no case, Procurer or Nodal Agency shall be responsible to pay or increase in tariff for any work related to Project.

It is clarified that the projects awarded under this RFP would not include energy storage with rooftop solar project. However, if Procurer desires to have such arrangement, it would need to pay separately for the battery storage, and associated change in design and civil and electrical works. Such arrangement would not affect the tariff discovered for sale of power under this RFP.

THE SCOPE OF WORK SHALL ALSO INCLUDE THE FOLLOWING:

A layout plan of the site should be submitted to the Inspecting Authority clearly indicating the identified location for installation of SPV modules & control room, where control panels shall be installed. The Power Producer shall also submit the mode in which the system will operate in accordance with the provisions of this RFP/NIT.

Detailed planning of time bound smooth execution of Project;
Performance testing of the Completion and Successful Commissioning of the Project;
Comprehensive O & M of the Project for twenty five (25) Operational Year to assure faultless operation, and inventory maintenance; Supply of Power from Commissioning to Termination or for twenty five (25) Operational Years;
Coverage of risk liability of all personnel associated with implementation and realization of the Project;

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The Power Producer shall maintain sufficient inventory of the spare parts to ensure that the Project is functional during the term of PPA;

Power Producer shall be responsible for O &M of the Project from the first Part Commissioning or SCOD, whichever is earlier, to the completion of twenty five (25) Operational Years.

INTERNAL ELECTRIFICATION:

Inspection of the existing electrical network of each of the Project site;

Inspection of the Project in respect of its interfacing with licensee network/identified Electrical load;

Preparation and submission of electrical drawing for the site with quantity of material required;

Obtaining prior approval of the work and drawing from Inspecting Authority;

Execution of the work in accordance with the norms and regulation directives for testing and completion of the Project to the satisfaction of the NU;

GRID CONNECTION:

The Power Producer shall be responsible for synchronization of the Project with licensee's network under BIHAR Policy (BERC/SBPDCL/BREDA) for Renewable Energy Systems as amended from time to time. The Power Producer shall also suggest the Project Group of operation of the system mentioned in above policy and intimate the NU;

Connectivity of Project with the licensee's network; Commissioning of the project as applicable.

METERING AND GRID CONNECTIVITY:

Metering and grid connectivity of the Projects would be the responsibility of the Power Producer in accordance with the prevailing guidelines of the concerned distribution licensee and / or CEA and net metering provisions in the state of MP. NU and Procurer may facilitate in the process; however the entire responsibility lies only with the Power Producer. The cost of required meters shall be borne by Successful Bidder. This includes purchase of net meters in case of supply as per the policy in local state-BIHAR Renewable Energy System.

INSURANCE:

The Power Producer shall also take insurance for third party liability covering loss of human life, engineers and workmen and also covering the risks of damage, theft of material/ equipment/ properties after completion of the work(s). Before commencement of the work, the Power Producer shall ensure that all its employees and representatives are covered by suitable insurance against any damage, loss, injury or death arising out of the execution of the work. Liquidation, Death, Bankruptcy etc., shall be the responsibility of Power Producer.

The Bidder shall warrant that the goods supplied under this Agreement are new, unused, of the most recent or latest technology and incorporate all recent improvements in design and materials as per standards specified in the technical specifications of this RFP. The Power Producer shall provide warranty covering the rectification of any and all defects in the design of equipment, materials and workmanship including spare parts for a period of twenty five (25) Operational Years.

The responsibility of operation of warranty and guarantee clauses and claims/settlement of issues arising out of said clauses shall be responsibility of the Power Producer and NU will not be responsible in any way for any claims whatsoever on account of the above.

TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP:

The design, engineering, manufacture, supply, installation, testing, commissioning and performance of the equipment shall be in accordance with latest/ appropriate IEC/Indian Standards as detailed in the technical specifications of this RFP or its subsequent amendments. Where appropriate Indian Standards and Codes are not available, other suitable

DEVELOPMENT OF PERMANENT CAMPUS (PHASE-I) FOR NALANDA UNIVERSITY

standards and codes as approved by the MNRE/ CEA/ electricity regulators/ NU shall be used. All the relevant test certifications must be kept valid up to one (1) Year from the COD of the Project.

The specifications of the components should meet the technical specifications mentioned in this RFP or its subsequent amendments.

Any supplies which have not been specifically mentioned in this RFP but which are necessary during construction or Comprehensive O&M period of the Project shall be provided by the Power Producer without any extra cost and within the time schedule for efficient and smooth construction and Comprehensive O &M of the Project.

Construction of control room or any other relative civil work essential for Commissioning of Project;

ADDITIONAL WORKS

Additional civil, structural or electrical works which are so required/desired to be undertaken by the Procurer for the Project and which are not covered in the scope of work, shall be done by the Power Producer after obtaining concurrence of the Procurer on its design, drawing and estimate cost of such additional works shall be computed on the basis of SOR of PWD (Civil) and of DISCOM (Electrical). Cost of additional works shall be decided mutually between Power Producer and Procurer but in any case, it should not be more than cost computed based on SOR rates.

Additional works may include but not limited to;

Laying of additional length of cable and accessories if the complete Space provided is more than 500 mtrs away from the utility/DISCOM metering point.

Requirement of additional/specific design of structure, as desired by Procurer in deviation with the design provided by the Power Producer, to accommodate solar panels on rooftop, ground or on any existing structure/ construction/body.

PROVISION OF SIGN BOARD

Power Producer will have to provide sign board of dimension 8'x4' (M.S. sheet size 4'x3' of 16 gauge, M.S. angle 40x40x5 mm with essential bracing & adequate grouting with PCC 1:3:6 i/c painting & writing) at each site with complete specification & matter will be provided to the Power Producer with PPA.

COMPLETION AND COMMISSIONING

Completion: When the Power Producer fulfils his obligation under the PPA, it shall obtain completion certificate from NU for the PPA Capacity and part thereof. NU shall issue separate Completion Certificate for the BEST.

The approval from the all authority like CEIG for the PPA Capacity or part thereof, if applicable; shall be arranged by the producer. Project satisfaction certificate from DREO for the PPA Capacity or part thereof. If PPA Capacity divided under Category I and III, Power Producer shall submit separate satisfaction certificate from Procurer for PPA Capacity or part thereof as per the direction/approval of NU.

Commissioning:

All effort and requirement of approval from NU and local govt authorities or any clearances for commissioning and thereafter charging shall be arranged by the power producer.

PAYMENT TERMS:

On submission of bill invoice by the power producer as per the billing cycle of the DISCOM-SBPDCL. The billing date shall be as per the DISCOM BILLED date. The power producer shall submit the followings after completion of the SITC of generating plant:

On submission of Self - Certified copy of application submitted to power Distribution Company for connectivity of Project with grid. Inspection Report along with duly signed

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completion certificate by Power Producer and Inspecting Authority based on the achievement of minimum CUF in accordance with clause. Coloured photograph of SPV Array, PCU and sign board duly certified by Inspecting Authority; A certificate from any licensee or contractor / supervisor certifying that the electrical internal/external electrical work carried out is in accordance with the norms of electrical safety standards; In case any C-PBG, BG (if available) or Bid Security is utilized, partly or fully, towards recovery/ adjustment of LD/ penalty, the same shall be replenished to its original value and validity period within seven (7) Days of written communication on this behalf from NU to Power Producer, failing which the Power Producer shall become ineligible for further work orders being given under this RFP.

NU shall recover/ adjust LD/penalty from any subsidy payment due to the Power Producer. If recovery/ adjustment is not possible from payments due, the same shall be done through C-PBG/BG against the work order/PPA concerned. Lastly, if recovery/ adjustment of LD/ penalty is not possible against payment due or C-PBG/BG concerned, it shall be done against any C-PBG/BG of the Power Producer with NU with respect to any other work

Document in support of performance of the Project and achievement of CUF of 15% subject to seasonality as per provisions of monthly performance as compared to the bench mark clause of this RFP as produced by the power producer and verified by the NU.

SECTION 5

TECHNICAL PARAMETERS

TECHNICAL PARAMETERS

The proposed Projects shall be completed as per the technical specifications given below.

The Bidder are hereby advised to take a note of the draft guidelines issued by MNRE dated 09- 08-2016 or any amendments thereof in respect of minimum technical requirements, quality standards, best practices and specifications for grid connected roof top PV systems in addition to technical parameters mentioned in this RFP and comply accordingly.

PARAMETERS

A Project consists of SPV array, Module Mounting Structure, Power Conditioning Unit (PCU) consisting of Maximum Power Point Tracker (MPPT), charge controller (if required), Inverter, Controls & Protections, interconnect cables and switches. PV Array should be mounted on a suitable structure. Project should be designed with necessary features to synchronize with the grid power. Components and parts used in the Project including the PV modules, metallic structures, cables, junction box, switches, PCUs etc., should conform to the BIS or IEC or international specifications, wherever such specifications are available and applicable.

PROJECT SHALL CONSIST OF FOLLOWING EQUIPMENT/ COMPONENTS:

Solar Photovoltaic Modules

The PV modules used should be made in India.

The PV modules used must qualify to the latest edition of IEC PV module qualification test or equivalent BIS standards Crystalline Silicon Solar Cell Modules IEC 61215/IS14286. In addition, the modules must conform to IEC 61730 Part-2- requirements for construction & Part 2 – requirements for testing, for safety qualification or equivalent IS.

For the PV modules to be used in a highly corrosive atmosphere throughout their lifetime, they must qualify to IEC 61701/IS 61701. The total solar PV array capacity should not be less than allocated capacity kWp) and should comprise of solar crystalline modules of minimum 250 Wp and above wattage. Module capacity less than minimum 250 Wp should not be accepted.

Protective devices against surges at the PV module shall be provided. Low voltage drop bypass diodes shall be provided.

PV modules must be tested and approved by one of the IEC authorized test centres. The module frame shall be made of corrosion resistant materials, having Pre-galvanized/ anodized Aluminum or superior material (after approval from MNRE) the Power Producer shall carefully design & accommodate requisite numbers of the modules to achieve the rated power in his Bid.

Other general requirement for the PV modules and subsystems shall be the following:

- (a) The rated output power of any supplied module shall have tolerance of +/ - 3%.
- (b) The peak-power point voltage and the peak-power point current of any supplied module and/or any module string (series connected modules) shall not vary by

- more than 2 (two) per cent from the respective arithmetic means for all modules and/or for all module strings, as the case may be.
- (c) The module shall be provided with a junction box with either provision of external screw terminal connection or sealed type and with arrangement for provision of by-pass diode. The box shall have hinged, weather proof lid with captive screws and cable gland entry points or may be of sealed type and IP- 65 rated.
 - (d) I-V curves at STC should be provided by Power Produce Modules deployed must use a RF identification tag. The following information must be mentioned in the RFID used on each modules (This can be inside or outside the laminate, but must be able to withstand harsh environmental conditions).
 - (e) Name of the manufacturer of the PV module
 - (f) Name of the manufacturer of Solar Cells.
 - (g) Month & year of the manufacture (separate for solar cells and modules)
 - (h) Country of origin (for solar cells)
 - (i) I-V curve for the module Wattage, I_m , V_m and FF for the module
 - (j) Unique Serial No and Model No of the module
 - (k) Date and year of obtaining IEC PV module qualification certificate.
 - (l) Name of the test lab issuing IEC certificate.
 - (m) Other relevant information on traceability of solar cells and module as per ISO 9001 and ISO 14001

WARRANTIES AND GUARANTEES

The Bidder shall warrant that the goods supplied under this contract are new, unused, of the most recent or latest technology and incorporate all recent improvements in design and materials. The bidder shall provide warrantee covering the rectification of any and all defects in the design of equipment, materials and workmanship including spare parts for a period of 5 years from the date of commissioning for PART-A projects and for 25 years for PART-B projects. The successful bidder has to transfer all the Guarantees/ Warrantees of the different components to the Owner of the project. The responsibility of operation of Warrantee and Guarantee clauses and Claims/ Settlement of issues arising out of said clauses shall be joint.

Warranties

a. Material Warranty Material Warranty is defined as:

The manufacturer should warrant the Solar Module(s) to be free from the defects and/or failures specified below for a Period as specified in MNRE guidelines from the date of Completion.

Defects and/or failures due to manufacturing Defects and/or failures due to quality of materials

Non conformity to specifications due to faulty manufacturing and/or inspection processes. If the solar Module(s) fails to conform to this warranty, the manufacturer will replace the solar module(s)

Performance Warranty

The predicted electrical degradation of power generated not exceeding 20% of the minimum rated power over the twenty five (25) Year period and not more than 10% at the end of tenth (10th) Year of the full rated original output.

Specification

The PV power project developers will provide a copy of the type test certificate(s)/ report(s) with the bid and routine type reports before the dispatch of the equipment. Solar PV system shall consist of following equipment:

- i. Solar PV modules consisting of required number of PV cells .
- ii. Power Conditioning Unit/ Inverters with communication port (SCADA Modbus/ RS 485/TCP-IP)
- iii. Mounting structures
- iv. Cables and hardware
- v. Junction box and distribution boxes
- vi. Earthing kit
- vii. Lightning arrestors
- viii. PVC pipes and accessories
- ix. Tool kit
- x. Control room and civil pedestals xi. Spares for 3 years

Duty Cycle

Average Hours of Operation/day: 8-10 hrs per day, as per insolation levels of the site.

PV ARRAYS

The PV modules convert the light reaching them into DC power. The amount of power they produce is roughly proportional to the intensity and the angle of the light reaching them. They are therefore required to be positioned to take maximum advantage of available sunlight within siting constraints.

Supplier will position the PV modules in such a manner that the maximum power is obtained with the sun's movements during the day.

Supplier shall follow the latest engineering practice; ensure long-term compatibility requirements and continuity of equipment supply and the safety of the operating staff.

The PV power project developers are required to optimize generation of electricity in terms of kWh generated per kWp of PV capacity installed vs available solar radiation at the site (may be obtained through use of efficient electronics, lower cable losses, maximization of power transfer from PV modules to electronics and the grid, maximization of power generation by enhancing incident radiation by optional methods like seasonally changing tilt angles etc).

The PV system shall support remote monitoring of important parameters. The system shall be designed such that personnel without any background knowledge in Microprocessor-based technology are able to operate the system. The operator interface shall be intuitive such that operating personnel shall be able to operate the system easily after having received some basic training.

The SPV cells shall be manufactured using unique highly efficient diffusion process or any other technology in vogue so as to ensure uniform diffusion profiler to achieve close spread and higher efficiency for each cell.

Stabilized net output of the Solar PV Array for the Solar Power System should not be less than the Nominal design level for the System under Standard Test Condition.

Each solar PV module shall be warranted by the manufacturer for at least 95% of its rated power for 10 years and 80% for 25 years from the date of system acceptance. The preference may be given to 320W system or as per the OEM/integrator precise.

Photo electrical conversion efficiency of GTRTSPVS module shall not be less than 13%. The bidder shall indicate minimum module efficiency.

Fill factor of the module shall not be less than 0.70.

The bidder shall provide the sample solar PV module electrical characteristics including current voltage (I-V) performance curves and temperature coefficients of power, voltage and current. However, the tabulated document with all the relevant data like voltage, current, power output for all the modules also to be provided.

The PV modules shall be suitable for continuous outdoor use The PV module shall be made of high quality laminated in ultra violet stabilized polymer material such as Ethyl Vinyl Accelerate (EVA), Tedler, and toughened glass. The size of single crystalline silicon PV cells shall be so chosen so as to maximize energy density and align with economies of scale.

PV module shall be provided with frame of anodized channels for size and simplicity in installation offered as a single module or series parallel combination of modules. The PV module shall be provided with screen-less frame with solar cable and connector.

The PV modules shall be equipped with bypass diode to minimize power drop caused by shade. The PV modules shall be made of light weight cells, resistant to abrasion, hail impact, rain, water and environmental pollution. The PV modules shall be provided with anti-reflection coating and back surface field (BSF) structure to increase conversion efficiency. The PV module shall use lead wire with weatherproof connector for output terminal.

The power output of the PV system under Standard Test Conditions (STC) should be 50

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kWp made of 310 Wp or any other module size depending upon manufacturer prudent practice. With nominal output voltage of 24 V. The number of modules to be supplied shall be worked out accordingly. The operating voltage corresponding to the power output mentioned above should be 35.2 V for 24V system.

The terminal box on the module should have a provision for opening for replacing the cable, if required.

A strip containing the following details should be laminated inside the module as to be clearly visible from the front side.

- (a) Name of the Bidder or distinctive Logo
- (b) Model or Type No.
- (c) Serial No.
- (d) Year of make.

The GTRTSPVS shall perform satisfactorily in relative humidity up to 85% and temperature between -10°C to + 86°C.

Data Acquisition System / Project Monitoring

Data Acquisition System shall be provided for each of the solar PV Project. Data Logging Provision for Project control and monitoring, time and date stamped system data logs for analysis computer for data monitoring, metering and instrumentation for display of systems parameters and status indication to be provided. The following parameters should be accessible via the operating interface display in real time separately for Project:

- a) AC Voltage
- b) AC Output current.
- c) Output Power
- d) Power factor
- e) DC Input Voltage
- f) DC Input Current
- g) Time Active
- h) Time disabled
- i) Time Idle
- j) Power produced
- k) Protective function limits (Viz-AC Over voltage, AC Under voltage, Over frequency, Under frequency ground fault, PV starting voltage, PV stopping voltage).

All major parameters available on the digital bus and logging facility for energy auditing through the internal microprocessor and read on the digital front panel at any time) and logging facility (the current values, previous values for up to a Year and the average values) should be made available for energy auditing through the internal microprocessor and should be read on the digital front panel.

String and array DC Voltage, Current and Power, Inverter AC output voltage and current (All 3 phases and lines), AC power (Active, Reactive and Apparent), Power Factor and AC energy (All 3 phases and cumulative) and frequency shall be monitored. The data shall be recorded in a common work sheet chronologically date wise. The data file shall be MS Excel compatible. The data shall be represented in both tabular and graphical form.

All instantaneous data should be available through RMS. Software shall be provided for USB download and analysis of DC and AC parametric data for individual Project. Provision for Internet monitoring and download of data shall be necessarily incorporated for projects.

Remote Monitoring and data acquisition through Remote Monitoring System software with latest software/hardware configuration and service connectivity for online / real time data monitoring/control complete to be supplied and Comprehensive O &M/control to be ensured by the supplier. Provision for interfacing these data on NU server and portal in future shall be kept.

Transformer “If Required” & Metering

Dry/oil type appropriate kVA, of transformer Step up along with all protections, switch-gears, Vacuum circuit breakers, cables etc. along with required civil work.

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The Power Producer must take approval/NOC from the concerned distribution licensee for the connectivity, technical feasibility, and synchronization of Project with distribution network and submit the same to NU before Commissioning Project.
Reverse power relay shall be provided by Power Producer (if necessary), as per the local distribution licensee’s requirement.

Power Consumption

Regarding the generated power consumption, priority needs to be given for internal Consumption first and thereafter any excess power can be exported to the distribution licensee network.

Protections

The Project should be provided with all necessary protections like earthing, Lightning, and grid islanding as follows:

Lightning Protection

The SPV power Project shall be provided with lightning & overvoltage protection of appropriate size. The main aim in this protection shall be to reduce the over voltage to a tolerable value before it reaches the PV or other sub system components. The source of over voltage can be lightning, atmosphere disturbances etc. The entire space occupying the SPV array shall be suitably protected against Lightning by deploying required number of Lightning Arrestors. Lightning protection should be

Inverter

The DC power produced is fed to inverter for conversion into AC. In a grid interactive system AC power shall be fed to the UPS LT Distribution Board at single phase AC bus. Power generated from the solar system during the daytime is utilized fully by powering the building loads. In cases, where solar power is not sufficient due to more demand or cloud cover etc. the critical and separated loads shall be served by drawing power from the LT line. The inverter should always give preference to the Solar Power and will use LT Line/DG power only when the Solar Power is insufficient to meet the load requirement. The inverter shall be 1Phase type which shall convert dc output from solar PV to single phase AC output .The output of the inverter must synchronize automatically its AC output to the exact AC voltage and frequency of the grid. Inverter shall continuously monitor the condition of the grid and in the event of grid failure; the inverter automatically switches to off-grid supply within 20-50 milliseconds. The solar system is resynchronized with the grid within two minutes after the restoration of grid or generator. Alternatively, the UPS may also be online giving charging preference to the Solar on priority and in case of any insufficiency in solar Unit should be charged through house Hold LT line.

Grid voltage shall also be continuously monitored and in the event of voltage going below a preset value and above a preset value, the solar system shall be disconnected from the grid within the set time. Both over voltage and under voltage relays shall have adjustable voltage (50% to 130%) and time settings (0 to 5 seconds).

Metal Oxide Varistors (MOVs) shall also be provided on DC and AC side of the inverter. The inverter control unit shall be so designed so as to operate the PV system near its maximum

Power Point (MPP), the operating point where the combined values of the current and voltage of the solar modules result in a maximum power output.

Following specifications shall be provided by the OEM

- Continuous output power rating
- Nominal AC output voltage and frequency
- Accuracy of AC voltage control
- Output frequency
- Accuracy of frequency control
- Grid Frequency Control range
- Maximum Input DC Voltage
- MPPT Range
- Ambient temperature
- Humidity

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- Protection of Enclosure
- Grid Voltage tolerance
- Power factor control
- No-load losses
- Inverter efficiency(minimum)

Liquid crystal display shall at least be provided on the inverters front panel or on separate data logging/display device to display following

- DC Input Voltage
- DC Input current
- AC Power output(kW)
- Current time and date
- Time active
- Time disabled
- Time Idle
- Temperatures (C)
- Converter status

Protective function limits (VIZ-AC over voltage, AC under voltage, Over frequency, under frequency, ground fault, PV starting voltage, PV stopping voltage, over voltage delay, under voltage delay over frequency, ground fault delay, PV starting delay, PV stopping delay.) shall also be displayed. Nuts & bolts and the inverter enclosure shall have to be adequately protected taking into consideration the atmosphere and weather prevailing in the area.

Dimension and weight of the inverter shall be indicated by the bidder in the offer. All doors, covers, panels and cable exists shall be gasketed or otherwise designed to limit the entry of dust and moisture. All doors shall be equipped with locks.

Solar PV systems shall be provided with synchronizing equipment having three input for comparison i.e. grid supply vs. solar output, Generator output vs solar output so as to connect the SPV systems in synchronism with grid or Generator. In case of grid failure, solar PV system shall be disconnected from the grid and out of synchronization for a period Generator supply is not restored. PV system shall be synchronized with the GENERATOR supply after Generator is started.

Static Phase Converter

The inverter shall be 1Phase type which shall convert dc output from solar PV to single phase AC output which shall then be converted into 415V,3Phase ,50Hz by a static phase converter, if required, this is optional and additional if manufacturer feel comfortable but not mandatorily. The University cannot force for this requirement this is may be done by the OEM/bidder as per their choice but free of cost.

Protection and Control

PV system software and control system shall be equipped with islanding protection as described above. In addition to disconnection from the grid (islanding protection i.e. on no supply) , under and over voltage conditions , PV systems shall be provided with adequate rating fuses, fuses on inverter input side (DC) as well as output side (AC) side for overload and short circuit protection and disconnecting switches to isolate the DC and AC system for maintenances are needed. Fuses of adequate rating shall also be provided in each solar array module to protect them against short circuit. A manual disconnect switch beside automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personal to carry out any maintenance. This switch shall be locked by the utility personal.

INVERTER

- **Scope**

The scope of work shall include:

1. Supplying, installation testing and commissioning of Inverters for solar station.
2. Inverter handling, loading unloading and storage.

3. Associated works.

- **Definitions**

The definitions shall be as per relevant IEC/IEEE standards and MNRE guidelines.

- **Codes & Standards**

The contractor is required to follow all relevant IS and IEC codes as per latest amendments, following codes shall be followed in particular:

1. IEEE Standard 446-1987: Emergency and standby power systems.
2. ANSI C 37.90a, IEEE Standard 472 : Surge withstand capability test.
3. ANSI C 37.90 : Relays and relay system associated with electrical power apparatus.
4. IS 2208 & IS 9224 : Cartridge fuses for voltages up to and including (Part 1&2) (IEC 269) 650 V.
5. IS 9224 (Part - 4) : Fuses for protection of semiconductors.
6. BS 4417 (I.E.C 146) : Semi-conductor Rectifier Equipments.
7. NEC- 2008 - National electrical code.
8. NBC-2016 - National building code.
9. IER-1956 : Indian electricity rules.
10. IEA-2007: Indian electricity act 2007.
11. Any other local bye-law or supply company norm as applicable.

- **Service conditions**

System particulars

- a. Nominal system voltage - 320V bipolar DC
- b. Rated system voltage - 1.8kV
- c. Frequency - 50Hz \pm 3%
- d. No. of phases - 2pole + earth
- e. System neutral - Solidly earthed
- f. Short circuit rating - 50kA for 1sec on LV side.

Tropical conditions

- a. Ambient temperature : 40 degree celsius
- b. Relative humidity (avg.) : 60
- c. Isokeraunic level : 33
- d. Seismic Zone : Zone-4
- e. Climate type : hot and humid

The climatic conditions are prone to wide variations in ambient conditions and hence the equipment shall be of suitable design to work satisfactorily under these conditions.

Tolerances and creepage distance

Tolerances (on all the dimensions) and creepage distances shall be in accordance with provisions made in the relevant Indian/IEC/BIS standards and in these specifications. Otherwise the same will be governed by good engineering practice in conformity with required quality of the product.

- **Specifications**

- The static LT line tie inverter shall be of solid state type using proven pulse width modulation (PWM) technique. The inverter equipment shall include all necessary control circuitry and devices to conform requirements like voltage regulation, current limiting, wave shaping, transient recovery, automatic synchronization etc. as given below.
- The inverter shall utilize IGBT which shall provide intelligent features like the drive circuitry, over-current protection, over temperature protection, control power failure protection and short circuit protection.
- The IGBT / IPM transistors shall enable high speed switching of 6 Khz or as per the ORM practice confirming to reducing the heat dissipation and thereby providing high efficiency.

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- The Inverter shall utilize both voltage and current feedback control circuits so that the inverter shall act not only as a constant voltage source but also as a load required current source. This shall enable the inverter to quickly adapt to the changing load current value and wave shape.
- The controller used shall be DSP type.
- The inverter output voltage shall not deviate by more than + 2% RMS due to the following steady state conditions :
 - From 0 to 100% loading
 - Inverter DC input voltage varies from maximum to minimum.
- The inverter output frequency shall be controlled by an oscillator internal to the Inverter module logic. The inverter output frequency shall not vary during steady state or transient operation due to the following conditions:
 - From 0 to 100% loading.
 - Inverter DC input varies from maximum to minimum.
- The inverter output shall limit the amount of harmonic content to the values stated in section. The use of excessive or additional filtering shall not be required to limit the harmonic content thus maintaining a high level of efficiency, reliability and original equipment footprint.
- The inverter output shall be capable of providing an overload current while maintaining rated output voltage to the values stated. An LED indicator shall be located on the control panel to identify this condition. If the time limit associated with the overload condition expires or the overload is in excess of the set current amplitude, the load shall be switched off by isolating the load with the help of output AC switchgear.
- The inverter output shall be limited to 150% of rated load current.
- The AC output from the inverter shall utilize fuses for overload protection. The inverter shall utilize a contactor to isolate the inverter output from the critical bus. The inverter fuses shall be the fast acting semiconductor type. The inverter output isolation contactor shall be located in the inverter module and shall be controlled by the internal inverter module system logic.
- The inverter shall meet the following specifications in addition to other requirements stated herein:
 - a. Voltage Input : 325V bipolar DC or as per the OEM for this case.
 - b. Input voltage range : $\pm 12\%$
 - c. Nominal Voltage Output : 240 V + 1% AC 3 Phase, 4 Wire
 - d. Voltage Regulation :
 - For 0 to 100% loading: $<+ 1\%$
- Transient Voltage Regulation :
 - a. At 100% step load change : $<+ 3\%$
 - b. At loss or return of AC input : $<+ 1\%$
 - c. At load transfer from bypass to inverter : $<+ 3\%$
 - d. Total voltage harmonic distortion : $< 5\%$ THD for 100% linear load $< 7\%$ THD for 100% non-linear load
 - e. Output power factor > 0.9
 - f. Duty: Continuous
 - g. Cooling: Forced cooling using fans.
 - h. Ambient operating temperature range: 0 to 50 deg.C maximum continuous.
 - i. Output: Suitable terminals are provided for termination of cables for connecting inverter output to AC distribution board.
- **Installation, Testing & Commissioning**
 - Installation of Inverter shall be carried out as per manufacturer's instructions and installation shall be verified by the manufacturer before energizing.
 - Type testing shall be conducted from accredited Lab. Copies of the test certificates for same rating shall be submitted at the time of vendor approval. These shall not be more than 3 years old.
 - Testing at manufacturers' works shall be conducted before dispatch as per routine verification requirements.
 - Physical check including checking damage/crack in any components, etc shall be done at site.
 - Following test shall be performed, as a minimum, at site prior to handing over, to confirm the functional and the performance specification of the inverter as specified. All required test equipment like Digital Oscilloscope, Voltage Regulator and Measurement Meters etc. shall be the responsibility of the concerning vendor without any additional cost.
 - Full load testing of inverter with required size load bank shall be done at site as

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per the approved QAP. All testing expenses including load bank and its arrangements shall be under the scope of vendor.

- The vendor shall demonstrate as a minimum the following features on site by providing all required test equipment, such as power factor improvement, input current THD, output voltage THD, output frequency and all other performance monitoring requirements detailed before as required by the Owner.
- The MNRE guidelines are mandatory

LT CABLE AND TERMINATION (AC and DC cables)

- **Scope**

The scope of work shall include:

1. Supplying, laying, testing and commissioning of 1.1kV grade power cables and control cables suitable for 415V, 3Phase , 50Hz AC supply and also for 230V, 1Phase , 50Hz AC supply.
2. Supplying, laying, testing and commissioning of 1.8kV grade, DC power cables suitable for 325V, bipolar DC supply.
3. Handling, loading, unloading and storage of both AC and DC cables.
4. Civil works, piping works and ducting works required for cable laying as per tender document.
5. Cable termination using double compression brass glands and lugs (cu lugs for cu cables and Al lugs for Al cables) as specified

- **Definitions**

- The definitions shall be as per IS 7098-Part 1, IEC 60050-461 and IEC 60502-2
- Abbreviation used to define the following are stated in front of the entity
- Aluminum Conductor - A
- XLPE Insulation - 2X
- Steel round wire armor - W
- Steel strip armor - F
- Steel Double round wire armor - WW
- Steel Double strip armor - FF
- Non-magnetic (A1.) round wire armor - Wa
- Non-magnetic (A1.) strip armor - Fa
- PVC outer sheath – Y

- **Codes & Standards**

The contractor is required to follow all relevant IS and IEC codes as per latest amendments, however in particular following codes may be applied in addition.

1. IS 7098-Part 1- Specifications for XLPE insulated thermoplastic sheathed cables, for working voltage up to 1.1kV (including 1.1kV)
2. IS-1255 - Code of practice for installation and maintenance of power cable up to 33KV rating
3. IEC 60502-1- Standard for cables for rated voltage from 1KV up to 6kV (Um=1.2kV)
4. IEC-60050-461- Definitions for cables.
5. IEC-60811 - Common test methods for cable insulation.
6. IS : 3961- Part 2: Recommended current ratings for cables.
7. IS : 8130 Conductors for insulated cables.
8. IS : 583 XLPE Insulation and outer sheath of electric cables.
9. IS : 10418 Specification for drums for electric cables.
10. NEC- 2008 - National electrical code.
11. NBC-2016 - National building code.
12. IER-1956: Indian electricity rules.
13. IEA-2007: Indian electricity act 2007
14. MNRE guidelines
15. Any other local bye-law or supply company norm as applicable.

- **Service conditions**

System particulars

- a. System voltage - 415/230 V for AC cables and $\pm 325V$ for DC cables
- b. Frequency - $50Hz \pm 3\%$ for AC cables
- c. No. of phases - 3 for AC / 2 (poles) for DC
- d. System neutral - Solidly earthed
- e. Short circuit rating - As per system fault level

Tropical conditions

- a. Ambient temperature: 40 degree celsius
- b. Relative humidity (avg.) : 60
- c. Isokeraunic level: 33
- d. Seismic Zone: Zone-4
- e. Climate type : hot and humid

The climatic conditions are prone to wide variations in ambient conditions and hence the equipment shall be of suitable design to work satisfactorily under these conditions.

Tolerances and creepage distance

Tolerances (on all the dimensions) and creepage distances shall be in accordance with provisions made in the relevant Indian/IEC/BIS standards and in these specifications. Otherwise the same will be governed by good engineering practice in conformity with required quality of the product.

- **Specifications**

LT Cables (AC & DC):

- Cables shall be XLPE insulated PVC sheathed, Copper conductor as specified.
- Stranded Aluminum/Copper conductor shall be used.
- All Aluminum/Copper XLPE cables insulation shall be of high grade Cross-linked Polyethylene for insulation for extrusion process. Cores laid up.
- The inner sheath shall be bonded over with thermoplastic material for protection against mechanical and electrical damage.
- Armoring should be provided over the inner sheath to guard against mechanical damage.
- Armoring should be Galvanized steel wires or galvanized steel strips as specified.
- In single core cables used in A.C. wires/strips, round steel wires should be used; where diameter over the inner sheath does not exceed 13 mm, flat steel armor should be used.
- Insulation shall be of XLPE type as per latest IS general-purpose insulation for maximum rated conductor temp 90 degree C.
- The Conductor shall be stranded Aluminum/Copper circular/sector shaped and compacted.
- In multi core cables the core shall be identified by red, yellow, blue and black coloring of insulation.
- Conductor shall be of electrolytic Aluminum/Copper conforming to IS: 8130 and are compact circular or compact shaped. I
- In Inner sheath laid up cores shall be bonded over with thermo-plastic material for protection against mechanical and electrical damage.
- Insulation, inner sheath and outer sheath shall be applied by extrusion and lapping up process only. The outer sheath shall have FRLS properties.
- Repaired cables or cables made up of re-used copper / aluminium shall not be used.
- The cables shall be suitable for laying in racks, ducts, trenches, conduits and underground buried installations with uncontrolled back fill and chances of flooding by water.
- Progressive automatic in line sequential marking of the length of cables in meters at every one meter shall be provided on the outer sheath of all cables.
- Both ends of the cables shall be properly sealed with PVC/Rubber caps so as

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- to eliminate ingress of water during transportation, storage and erection.
- Embossing of outer sheet: the following details on the other sheet of cable at a regular interval of 1(one) meter:
 - a. Name of customer : Nalanda University
 - b. Conductor size, type of insulation and voltage grade.
 - c. Manufacturer's name along with ISI mark
- Typical parameters for AC cables shall be as follows :
 - a. Rated Maximum Voltage: 1.1 kV (rms)
 - b. Rated Frequency: 50 Hz
 - c. Rated Power Frequency Withstand Voltage (1 min): 2 kV (rms)
 - d. Rated short time withstand current for 1 sec: as per fault level
 - e. Conductor material: Aluminium / Cu. as per cable schedule.
- Typical parameters for DC cables shall be as follows :
 - a. Rated Maximum Voltage: 1.5 kV
 - b. Maximum permissible DC voltage : 1.8 kV
 - c. Voltage withstand for 5 minutes : 6.5kV
 - d. Rated short time withstand current for 1 sec: as per fault level
 - e. Conductor material: Aluminium / Cu. as per cable schedule.

LT cable termination:

- All cable glands shall be made out of brass and of good quality as approved.
- All cable glands shall be of double compressions type.
- Termination/ Joining of power and control cables shall be done by means of compression methods using solder less tinned copper or Aluminum terminal lugs.
- For control cables terminations, ring tongue or reducer pin type lugs shall be used to suit the purpose.
- Proper crimping tools with crimping paste shall be used to maintain proper conductivity and avoid any air gap.

Cable Tags:

- Cable tag shall be made out of stainless steel minimum 1.2 mm thick and 25 mm x 100 mm size with holes provided to tag the cable.
- Following information shall be engraved in the cable with good quality material and the lettering height shall be 4.5mm
 - a. Source of the Cable from where it is supplied power.
 - b. Destination where the cable is terminated.
 - c. No of cores of cables.
 - d. Cross sectional area of the cable
 - e. Complete notation as described under definition part of cable specification.

• Installation, Testing & Commissioning

- Cables shall be stored in a dry covered place to prevent exposure to climate conditions and wear and tear of wooden drums and it should be preferably concrete surface.
- All drums should be stored in such a manner as to leave sufficient space between them for air circulation. It is desirable for drums to stand on battens directly placed under the flange.
- In no case should the drums be stored "on the flat" i.e. flange horizontal.
- Both ends of the cables shall be properly sealed with PVC/Rubber caps so as to prevent ingress of water, miniaturization of cores and armors during transportation, storage and erection.
- On receipt of cable drums visual inspection of drums should be carried out for any damages to these cables.
- While unloading the cables certain precautions are to be taken to ensure the safety of cables. The cable end to be opened on one side and tested for its insulation and continuity.
- The cable drums should not be dropped or thrown from the trucks/railway wagons etc. during unloading operations as shock may cause serious damage to cable layers.
- A crane may be used for unloading cable drums. While lifting the cable drums with crane, it is recommended that the lagging should be left in place to prevent the flanges from crushing on the cables.

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- the earth surface. Drums should be rolled in the direction of arrow only.
- For laying of cables special care is to be taken to prevent sharp bending, kinking, twisting.
- Cable should be unwound from drum by proper mounting the cable drum on a cable wheel making sure the spindle is strong enough to carry the weight without bending and that it is lying horizontally in the bearings, so as to prevent the drum creeping to one side or the other, while it is rotating.
- b. Copper conductor cables: 5 Kg/mm2
- Special care is to be taken while laying cable at bends. Following are the recommended bending radius for power and control cables.

Sr. No.	Voltage rating (kV)	PVC / XLPE cables	
		Multi core	Single core
1	Up to 1.1 kV	12D	15D
2	Above 1.1 kV to 33 kV	15D	15D

D = D is over all diameter of cable.

- Armored cables are to be laid on cable trays/ underground as per relevant design drawing and specifications.
- All flexible cables shall be laid inside exposed / canceled conduits (rigid / flexible)/ raceways or as per relevant design drawing and specifications.
- After the cable trench has been properly excavated and straightened, it shall be covered with 100 mm thick layer of sand, the cable shall then be lifted and placed over the sand cushion.
- It may be planned to lay down the cables in stacks under the trench and under such circumstances, cables shall be laid with the help of angular supports or cable trays suitable to take the load of the cable.
- In case the cable is laid with the help of angular supports inside the trench, such supports shall be provided at a regular intervals so that the cable does not sag due to its weight.
- After laying the cable the complete trench shall be filled with sand / earth up to 200 mm depth from the ground level.
- A layer of silver sand along with a good quality caution tape with warning written in Hindi and regional language shall be laid throughout along the length of the trench at this level to indicate that electrical cables are running below and the area shall not be further excavated without suitable precautions and permissions.
- The complete trench may then be backfilled with earth up to ground level.
- Riggers shall ensure that while laying, the cable should not be subjected to any form of damage. Cables shall be laid by skilled and experienced workmen using adequate rollers to minimize stretching of the cable.
- The cables shall not be laid in such a fashion that one cable crosses over the other. Proper spacing shall be left between two cables as mentioned in the GFC or as specified or directed by engineer-in-charge.
- Drain points shall be ensured inside these trenches so that in case of water logging, the water ejects out through these drain points as a result of natural gradient provided.
- Man-holes shall be provided at strategic locations so as to ease the pulling of cables and maintenance. The manhole shall be covered with suitable covers of mentioned material and dimensions as per GFC.
- When laid in cable trays above ground, power cables to be placed at the bottom most layer and control cables at the top most layer. In case of multi core power cables, cables shall be laid side by side with spacing not less than half the diameter of larger cable.
- Multi-core cables shall be clamped by means of mild steel galvanized saddles. All cables below 1.1 KV single core cables if any should be clamped by means of non-magnetic saddles.
- The saddles / clamps shall not be placed at the intervals more than 1500 mm for horizontal and 1200 mm for vertical runs.
- Multi core control cables can be laid touching each other in cable racks and wherever required may be taken in two layers. These cables should be clamped by means of PVC straps for horizontal and vertical runs. Fabricated aluminum clamps may be used at regular intervals.
- All the cable shall be properly identified at regular intervals and care shall be

- exercised in laying cables to avoid forming kinks.
- The relative position of the cables, laid on the cable tray shall be preserved and the cables shall not cross each other.
- At all changes in direction in horizontal and vertical planes, the cable shall be bent smooth with a radius as recommended by the manufacturers.
- All cables shall be laid with minimum half diameter gap and shall be clamped at every meter to the cable tray and shall be tagged for identification with cable tag and clamped properly.
- Tags shall be provided at both ends and all changes in directions both sides of wall and floor crossings.
- All cable shall be identified by embossing on the tag the information as laid down under this specification.
- If there is a need to joint the cable due to finishing of cable in cable drum such joints shall be made through the approved straight through joints and jointing kits as directed by and approved by engineer-in-charge at site.
- Cables shall be fully tested (both type and routine test) as per the specification laid under Indian standards. In particular following test shall be done at site.
 - a. Insulation resistance test.
 - b. Continuity test.
- **Busbars and internal connections**
 - The selection, design and construction of bus bars shall conform to IS/IEC specifications and the latest amendments.
 - Busbars shall be designed to carry rated currents during both steady state and transient conditions.
 - The bus bars shall be air insulated and made of high conductivity, high strength electrolytic grade aluminum.
 - Bus bars shall be located in air-insulated enclosures and segregated from all other compartments of the cubicle.
 - Direct access or accidental contact with bus bars and primary connections shall not be possible.
 - Bus bars shall be rated in accordance with service conditions and the rated for continuous and short time current ratings specified in SLD / data sheets.
 - Busbars shall be design for a temperature rise of 50 degree celsius above the ambient temperature, while for all bolted connections of bus it shall be 55 degree celsius.
 - The busbar shall be designed for a temperature of 190 degree during transient conditions.
 - Bus bars shall be adequately supported on SMC/DMC insulator supports to with stand electro dynamic stresses due to short circuit currents.
 - Bus bar support insulators shall be of non-hygroscopic material and shall conform to relevant IS standards.
 - The current density of the bus bars shall not be less than 0.8 Amp / sq mm.
 - Bus bars should be color coded for easy identification of individual phases and neutral.
 - All the bus bars should be provided with color coded heat shrink sleeves.
 - A main horizontal aluminum grounding bus, rated to carry maximum fault current, extending along the entire of the panel shall be provided.
 - The ground bus shall be provided with two-bolt drilling with GI bolts and nuts at each end to receive the main Earthing grid.
 - The size of the earth bus shall be as mentioned in drawings and schedules
 - Important parameters for complete panel assembly shall be as follows :
 - a. Voltage - 240V \pm 6%
 - b. Frequency - 50hz \pm 3%
 - c. No. of Phases - 3 + 100% Neutral + Earth bus
 - d. Peak Impulse Voltage - 12KV
 - e. Power frequency withstand capability - 2KV
 - f. Short circuit withstand capacity - 50kA for 1 second
 - g. Type of discrimination required among switchgears - Total discrimination
 - h. Min clearance and creepage distance - As per IEC-61439
 - i. Dimensions: As per approved type tested design.
 - Control wiring for all control circuit shall be done as follows :
 - a. Each control circuit shall be protected with the help of fuse in the phase and neutral shall be provided with suitable neutral links.

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- b. Control wiring shall be done with 1.1kV grade FRLS type control cables tested for power frequency withstand of 2kV.
 - c. All voltage circuits shall be wired with 1.5sqmm cu control cables.
 - d. All current circuits shall be wired with 2.5sqmm cu control cables.
 - e. Control wiring shall be done neatly with proper dressing and ferruling done.
 - f. Control wiring shall be color coded appropriately.
 - g. Terminal links used for control wiring shall be of good quality and shall withstand the temperature.
 - h. All connections must be be tight.
- Power wiring for main circuit shall be done as follows :
 - a. Switchgears of 100A rating and above shall be connected by the means of suitable bus bars only.
 - b. Cable terminal blocks used for power cable termination shall be suitable to withstand the temperature rise due to steady state and transient currents.
 - c. All connections must be tight.
- **Safety features and Interlocks**
 - The safety shutter shall be provided in breaker panels, which shall prevent in advertent contact with isolating contacts when breaker is withdrawn from the Cradle.
 - Door interlocking shall be provided in each switchgear compartment with a provision of defeat interlock .
 - All panel doors shall have provision of padlocking.
 - Insulating barriers shall be provided in all live sections of the panel.
 - There shall be provision of positive earth connection between fixed and moving portion of the ACB either through connector plug or sliding solid earth mechanism.
 - Earthing bolts shall be provided on the cradle or body of fixed ACB.
 - Arc chute covers shall be provided wherever necessary.
 - In case of drawout type switchgears safety shutters shall be provided to fully cover the live section automatically once the switchgear is being draw out
 - It shall be possible to bolt the draw-out frame not only in connected position but also in TEST and DISCONNECTED position to prevent dislocation due to vibration.
 - There shall be provision for locking the breaker in all three positions.
 - The breaker shall be provided with interlock to prevent the breaker from being withdrawn or replaced except in the fully isolated position.
 - Interlock shall also be provided to prevent the breaker from closing without in service position.
 - Space heaters triggered by thermostat shall be provided in cable compartments to avoid moisture.
 - Lamp operated with a door limit switch and a toggle switch shall also be provided in panel compartments along with 6/16A witch socket for ease of maintenance
- **Circuit Breaker (CB)-If required otherwise as per OEM practice**
 - As per standard features :
 - a. Rated voltage - 690V
 - b. Rated frequency - 50Hz
 - c. P.I.V - 12kV
 - d. Rated short circuit capacity - 50kA for 1 sec.
 - e. Poles - Four pole
 - f. Temperature deration : No deration upto 50 degree celsius (In case deration is applicable, higher rating switchgear shall be provided)
 - g. Self watt loss : As per IEC-60947
 - h. Total breaking time : less than 70ms
 - i. Closing coil : suitable for 230V AC
 - j. Shunt coil : suitable for 230V AC
 - k. Drawout type : Electrical
 - l. Spring charge operation : Through 230V AC motor as well as through handle.

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- m. Antipumping feature : Required and shall be inbuilt.
- n. $I_{cs} = I_{cu} = I_{cw} = 100\%$
- o. Spare contacts required : 4NO + 4NC
- p. Indications : On, Off, Trip, Spring Charge, Ready to close
- q. Undervoltage coil : As per design requirement.
- r. Time delay (td) - 0-400 m sec
- s. Inbuilt thermal memory

- Release of ACB shall have following parameters / features :
 - a. Protections : L,S,I,G
 - b. Setting options : L - 40%-100% I_n (nominal current rating) = I_r
S - $2 \times I_r$ to $10 \times I_r$
I - $6 \times I_n$ to $12 \times I_n$
G - 10% ,20% , 50% , 100%
 - c. Release type : microprocessor based.
 - d. Zone selective interlocking - required.
 - e. Communication : Fully communicable and shall be equipped with RS-485 port.
 - f. Memory : Non volatile memory to record 10 trip histories and 10 alarm history.
 - g. Alarm and indications : Visual indications for % loading in each phase, L,S,I,G fault, release failure
 - h. Release shall be capable to generate remote alarm in case of any internal fault and Spare contacts shall be provided with release to do so.
- **INSTALLATIONS, TESTING & COMMISSIONING**
 - The complete Panel assembly shall be installed in accordance with the manufacturer's installation drawing duly approved by "The consultant "
 - The panels needs to be grouted considering the seismic zone requirement.
 - Panels shall be properly aligned and the leveled within tolerance of +/- 2mm and shall been sured with a water level indicator or a laser gun whichever available. No shim shall be allowed to make a panel level suitably.
 - All live sections and compartments shall be covered with insulation barriers.
 - All the components of the panel shall be easily accessible.
 - The location of installation shall be cleaned and co-ordination shall be made with other disciplines.
 - Grouting holes shall be provided from inside and the panel shall be suitably and tightly bolted. No tuck welding with base channel is allowed.
 - Panels shall have peel-able poly layer on the cover for protection from cement, plaster, paints etc. during the construction period.
 - The holes made in enclosure for cable termination or anything else shall be made only through drill machine or approved cutting tool with marking of dia done prior to cutting or drilling. Extra left out holes shall be filled neatly with fire retardant sealant.
 - The Panel shall be tightly grouted. No spare nuts-bolts shall be left out un-tightened / open inside the DB enclosure in any case.
 - Gland plates where ever used for cable termination shall be tightly fixed and shall be earthed.
 - Size of Horizontal and vertical bus bars shall be equal.
 - Switchgears above 63A shall be mounted on bus bars tightly and accurately.
 - Termination lugs shall be tightly fixed and connected and there shall not be any bare wire strand jetting out of the lugs. Suitable crimping tool shall be used. And terminal wires shall be coved with heat shrinkable sleeves whose color coding has to match with the color of the wire used.
 - Color coding shall be followed for internal wiring also in a similar pattern as described in chaper-1 wiring under the specification document. Bus bar shall be tagged for phase indication.
 - Panel compartments shall be provided with space heaters and lights operated by door limit switches.
 - Capacitors Panels shall be provided with fans controlled by door limit switch and thermostat.
 - The door of panel shall be aligned properly and there shall be no air gap left after closing the DB door. Gaskets shall be used to make DB free from moisture.
 - Panel shall have Padlocking arrangement and shall be pad locked after complete installation.

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- **Surge Protection**
 - a) Internal surge protection shall consist of three MOV type surge arrestors connected from +ve and -ve terminals to earth (via Y arrangement).
- **Earthing Protection**
 - a) Each array structure of the PV yard should be grounded/ earthed properly as per IS:3043-1987. In addition the lighting arrester/masts should also be earthed inside the array field.
 - b) Earth resistance shall not be more than 5 ohms. It shall be ensured that all the earthing points are bonded together to make them at the same potential.
- **Grid Islanding**

In the event of a power failure on the electric grid, it is required that any independent power-producing inverters attached to the grid turn off in a short period of time. This prevents the DC-to-AC inverters from continuing to feed power into small sections of the grid, known as "islands." Powered islands present a risk to workers who may expect the area to be unpowered, and they may also damage grid-tied equipment. The Project shall be equipped with islanding protection. In addition to disconnection from the grid (due to islanding protection) disconnection due to under and over voltage conditions shall also be provided. A manual disconnect 4pole isolation switch, besides automatic disconnection to grid would have to be provided at utility end to isolate the grid connection by the utility personnel to carry out any maintenance. This switch shall be locked by the utility personnel.

TECHNICAL SPECIFICATION OF BIO PLANT:

- Technical specification of the Bio plant pay can be selected by the provided.
- University will provide space required to establish space required to set up the plant to generate the fuel.
- Interested party can set up the plant which will generate gas required for functioning of CHP engines.
- CHP Engines will be installed by the university, scope is only to generate and supply gas to the engines.
- Complete Procurement of Machines, their installation, maintenance, sourcing of any fuel required for working of the plant will be in the scope.
- CHP engine is flexible in its fuel source hence any of the below combination can be provided.
 - Methane (XX MBTU/Nm3) - XXX CM/Day
 - Purified biogas (XX MBTU/Nm3) - XXX CM/Day
 - Bio Gas (XX MBTU/Nm3) - XXX CM/Day
 - Ethanol (XX MBTU/Nm3) - XXX CM/Day
- Estimated Monthly Trend for units of electricity generated using gas feed is attached. This is to communicate expected monthly consumption pattern (Only for reference)
- Interested party can use any waste material to generate the fuel. Initial research was done to check the possible waste material's available in the region. The list is as below. Interested party can also go beyond the given list to source the raw material.

Following material is available in the region:

- Rice husk
- Wheat Straw
- Wood Chips
- Split Red Gram
- Millet
- Sesame
- Palliates
- Poultry waste
- Organic waste from adjacent city
- Sewage plant in adjacent city
- Cow manure

- Algai up to some extent grown on site

Safety Measures

The Power Producer shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc.

TECHNICAL PARAMETERS

Financial Bid Project Group – [XX]

(To be submitted only with due encryption)

Operational Year Financial Bid for Project (INR/kWh)

- 1. T(Solar) = _____ [Quoted Tariff]
- 2. T(Bio Gas) = ----- (INR/KG)

Note:

1. Quoted Tariff must be applicable for sale of Solar Power to Procurer from Initial Part Commissioning to the end of first Operational Year. Bidder to provide the Quoted Tariff up to 4 decimal places.
2. All measurement and calculation of tariff after escalation for each Operational Year shall be done up to four (4) decimal places, with the fifth digit of five (5) or above being rounded up and below five (5) being rounded down.
3. The above Quoted Tariff is inclusive of any applicable taxes. However, if any new change in tax/duty is effected in the period after the Bid Deadline and any time during the period of agreement, the same will be passed on by the Power Producer to the Procurer.
4. Further, for clarification, PPA shall be signed for individual Projects under Project Group but Quoted Tariff shall remain the same for all Projects under Project Group. However, it shall be applicable in accordance with respective dates of part commissioning/ full COD, as the case may be.

FORMAT 1
COVERING LETTER

(The covering letter should be on the Letter Head of the Bidder/ Lead Member of Consortium)

Ref.No._____ **Date:** _____
From: Insert name and address of Bidder)
Tel.:_____ **Fax:**_____
E-mail address:_____
To:_____

REGISTRAR
NALANDA UNIVERSITY, RAJGIR
PIN 803116

Sub: Request for Proposal (RFP) for Selection of Bidders FOR HYBRID SYSTEM

Dear Sir,

We, the undersigned _____ [insert name of the Bidder] having read, examined and understood in detail the Request for Proposal (RFP) for Standardization of Rates for work of Design, Engineering, Supply, Installation, Testing and Commissioning Including Comprehensive Operation & Maintenance (for twenty five (25) Operational Years for Sale of Solar Power aggregating to about ____ (in words) MWp under RESCO Model at PERMANENT CAMPUS OF NALANDA UNIVERSITY, RAJGIR, India., hereby submit our Bid comprising of Financial Bid and Technical Bid. We confirm that neither we nor any of our Affiliate has submitted Bid other than this Bid directly or indirectly in response to the aforesaid RFP.

We give our unconditional acceptance to the RFP, dated _____ and RFP attached thereto, issued by NALANDA UNIVERSITY, as amended.

As a token of our acceptance to the RFP, the same have been initialled by us and enclosed to the Bid. We shall ensure that we execute such RFP as per the provisions of the RFP and provisions of such RFP shall be binding on us.

Bid Security

We have enclosed Bid Security in form of DD/ FDR/ Bank Guarantee:

OR

We have enclosed a Bid Security in form of DD/ FDR/ Bank Guarantee (*Bid Security Details*) of cumulative amount required of Rs. _____, subject to clause 3.17 as mentioned in this RFP.

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We have submitted our Financial Bid strictly as per this RFP, without any deviations, conditions and without mentioning any assumptions or notes for the Financial Bid in the said format(s).

Acceptance

We hereby unconditionally and irrevocably agree and accept that the decision made by NU in respect of any matter regarding or arising out of the RFP shall be binding on us. We hereby expressly waive any and all claims in respect of Bid process. We confirm that there are no litigations or disputes against us, which materially affect our ability to fulfil our obligations with regard to execution of projects of capacity offered.

Familiarity with Relevant Indian Laws & Regulations

We confirm that we have studied the provisions of the relevant Indian laws and regulations as required to enable us to submit this Bid and execute the RFP, in the event of our selection as Bidder. We further undertake and agree that all such factors as mentioned in RFP have been fully examined and considered while submitting the Bid.

We undertake that we have satisfied ourselves with the site conditions of the projects and our proposed financial bid takes into consideration the existing site conditions.

Contact Person

Name
Designation
Company
Address
Phone Nos.
Fax Nos.
E-mail address

We are enclosing herewith the Envelope-I (Covering letter, Processing fee and Bid Security) and Envelope-II (Technical documents) containing duly signed formats, each one duly sealed separately, in one original as desired by you in the RFP for your consideration.

It is confirmed that our Bid is consistent with all the requirements of submission as stated in the RFP and subsequent communications from NU.

The information submitted in our Bid is complete, strictly as per the requirements stipulated in the RFP and is correct to the best of our knowledge and understanding. We would be solely responsible for any errors or omissions in our Bid. We confirm that all the terms and conditions of our Bid are valid for acceptance for a period of one hundred and eighty (180)

Days from Bid Deadline. We confirm that we have not taken any deviation so as to be deemed non-responsive.

Dated the_____day of_____2017

Thanking you,
We remain,

Yours faithfully,

Name, Designation and Signature of Authorized Person in whose name Power of Attorney/Board Resolution.

FORMAT 3
SHAREHOLDING CERTIFICATE

Name of the Equity holder	Type and Number of shares owned	% of equity holding	Extent of Voting rights

FORMAT 4
FORMAT FOR BANK GUARANTEE FOR BID SECURITY

(To be on non-judicial stamp paper of INR 1000/-)

Ref. _____ Bank Guarantee

No. _____

Date: _____

In consideration of the [Insert name of the Bidder] (hereinafter referred to as Bidder) submitting the response to Request for Proposal (RFP) for Selection of Power Producer for Implementation of Grid Connected Roof renewable energy generating station to about ____ (in words) MWp under RESCO Model at PERMANENT CAMPUS OF NU locations in the state of BIHAR in response to the RFP No. Dated _____ issued by Nalanda University, Rajgir (hereinafter referred to as NU) and NU considering such response to the RFP of [insert the name of the Bidder] as per the terms of the RFP, the [insert name & address of bank] hereby agrees unequivocally, irrevocably and unconditionally to pay to NU at [Insert Name of the Place from the address of NU] forthwith on demand in writing from NU or any Officer authorized by it in this behalf, any amount upto and not exceeding Rupees [Insert amount] only, on behalf of M/s. [Insert name of the Bidder].

This guarantee shall be valid and binding on this Bank up to and including [insert date of validity in accordance with this RFP] and shall not be terminable by notice or any change in the constitution of the Bank or the term of Agreement or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective Agreement.

Our liability under this Guarantee is restricted to Rupees (Rupees _____ only). Our Guarantee shall remain in force until *[insert date of Bid Validity Period in accordance with this RFP]*. Only NU shall be entitled to revoke this Guarantee till _____ [Insert date which is 30 Days after the date in the preceding sentence].

The Guarantor Bank hereby agrees and acknowledges that only the NU shall have a right to revoke this BANK GUARANTEE in part or in full, as it may deem fit.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand by NU, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to NU.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by [Insert name of the Bidder] and/or any other person. The Guarantor Bank shall not require NU to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against NU in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at RAJGIR/PATNA shall have exclusive jurisdiction.

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, Amalgamation, restructuring or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly NU shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the Bidder, to make any claim against or any demand on the Bidder or to give any notice to the Bidder or to enforce any security held by NU or to exercise, levy or enforce any distress, diligence or other process against the Bidder.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rupees _____ (Rupees _____ only) and it shall remain in force

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until *[Date to be inserted on the basis of this RFP]* with an additional claim period of thirty (30) Days thereafter.

We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if NU serves upon us a written claim or demand.

Power of Attorney No.
For *[Insert Name of the Bank]*
Banker's Stamp and Full Address.
Dated this ____ day of ____, 20__

FORMAT 5

**FORMAT FOR CONSTRUCTION PERFORMANCE BANK GUARANTEE
(To be on non-judicial stamp paper of Minimum Rs. 1000/-)**

In consideration of the *[Insert name of the Bidder]* (hereinafter referred to as (Bidder) submitting the response to Request for Proposal (RFP) for Selection of Bidders for Implementation of Grid Connected Roof Top Solar PV Projects for Sale of Solar Power aggregating to about _____ MWp under RESCO Model at PERMANENT CAMPUS OF NU locations in the state of BIHAR-RAJGIR in response to the RFP dated _____ issued by NU (hereinafter referred to as NU) and NU considering such response to the RFP of *[insert the name of the Power Producer]* (which expression shall unless repugnant to the context or meaning thereof include its executors, administrators, successors and assignees) and selecting the Project of the Power Producer and issuing LICA No. ____ to *(Insert Name of Power Producer)* as per terms of RFP and the same having been accepted by the selected Project Company, M/s {a Special Purpose Vehicle (SPV) formed for this purpose}, if applicable]. As per the terms of the RFP, the *[insert name & address of bank]* hereby agrees unequivocally, irrevocably and unconditionally to pay to NU at *[Insert Name of the Place from the address of the NU]* forthwith on demand in writing from NU, or any officer authorized by it in this behalf, any amount upto and not exceeding Rupees _____ [*Rupees _____ (Total Value in words)*] only, on behalf of M/s *[Insert name of the Power Producer / Project Company]*. This guarantee shall be valid and binding on this Bank up to and including _____ and shall not be terminable by notice or any change in the constitution of the Bank or the term of Agreement or by any other reasons whatsoever and our liability hereunder shall not be impaired or discharged by any extension of time or variations or alternations made, given, or agreed with or without our knowledge or consent, by or between parties to the respective Agreement.

Our liability under this Guarantee is restricted to Rupees _____ (both in numbers and words).

Our Guarantee shall remain in force until NU shall be entitled to invoke this Guarantee till _____. The Guarantor Bank hereby agrees and acknowledges that NU shall have a right to invoke this BANK GUARANTEE in part or in full, as it may deem fit.

The Guarantor Bank hereby expressly agrees that it shall not require any proof in addition to the written demand by NU, made in any format, raised at the above mentioned address of the Guarantor Bank, in order to make the said payment to NU.

The Guarantor Bank shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by *[Insert name of the Power Producer]*. The Guarantor Bank shall not require NU to justify the invocation of this BANK GUARANTEE, nor shall the Guarantor Bank have any recourse against NU in respect of any payment made hereunder.

This BANK GUARANTEE shall be interpreted in accordance with the laws of India and the courts at RAJGIR/PATNA shall have exclusive jurisdiction.

DEVELOPMENT OF PERMANENT CAMPUS (PHASE-I) FOR NALANDA UNIVERSITY

The Guarantor Bank represents that this BANK GUARANTEE has been established in such form and with such content that it is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

This BANK GUARANTEE shall not be affected in any manner by reason of merger, amalgamation, restructuring or any other change in the constitution of the Guarantor Bank.

This BANK GUARANTEE shall be a primary obligation of the Guarantor Bank and accordingly NU shall not be obliged before enforcing this BANK GUARANTEE to take any action in any court or arbitral proceedings against the selected Power Producer / Project Company, to make any claim against or any demand on the Power Producer or to give any notice to the Power Producer / Project Company or to enforce any security held by NU or to exercise, levy or enforce any distress, diligence or other process against the Power Producer / Project Company.

Notwithstanding anything contained hereinabove, our liability under this Guarantee is restricted to Rupees _____ (Rupees _____ only) and it shall remain in force until we are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only if NU serves upon us a written claim or demand.

Signature
Name
Power of Attorney
No.
For
[Insert Name of the Bank]
Banker's Stamp and Full Address.
Dated this ____ day of ____, 20__
Witness:

Signature
Name and Address_____

Witness:

Signature
Name and Address_____

FORMAT 6
CHECK LIST FOR C-PBG

AT 6
CHECK LIST FOR C-PBG

S. No.	Details of checks	YES/NO
1	Is the Bank Guarantee on non-judicial Stamp paper of appropriate value, as per applicable Stamp Act of the place of execution	
2	Whether date, purpose of purchase of stamp paper and name of the purchaser are indicated on the back of Stamp paper under the Signature of Stamp vendor? (The date of purchase of stamp paper should be not later than the date of execution of Bank Guarantee and the stamp paper should be purchased either in the name of the executing Bank or the party on whose behalf the Bank Guarantee has been Issued. Also the Stamp Paper should not be older than six (6) Months from the date of execution of Bank Guarantee).	
3	Has the executing Officer of Bank Guarantee Indicated his name, designation and Power of Attorney No./Signing Power no. on the Bank Guarantee?	
4	Is each page of Bank Guarantee duly signed / Initialed by executant and whether stamp of Bank is affixed thereon? Whether the last page is signed with full particulars including two witnesses under seal of Bank as required in the prescribed Performa?	
5	Does the Bank Guarantees compare verbatim with the Performa prescribed in the Bid Documents?	
6	Are the factual details such as Bid Document No. / Specification No., / LOI No. (if applicable) / Amount of Bank Guarantee and Validity of Bank Guarantee correctly mentioned in the Bank Guarantee	
7	Whether overwriting/cutting if any on the Bank Guarantee have been properly authenticated under signature & seal of executant?	

Format 7
POWER OF ATTORNEY

FORMAT 7

POWER OF ATTORNEY

(To be on non-judicial stamp paper of Minimum Rs. 1000/-)
Power of Attorney to be provided by the Bidder in favour of its representative as evidence of authorized signatory's authority.
Know all men by these presents, We (name and address of the registered office of the Bidder as applicable) do hereby constitute, appoint and authorize Mr./Ms. (name & residential address) who is presently employed with us and holding the position of _____ as our true and lawful attorney, to do in our name and on our behalf, all such acts, deeds and things necessary in connection with or incidental to submission of our Bid for Selection of Bidders for Implementation of Roof Top Solar PV Projects aggregating to about ____ (In words) kWp under RESCO Model at various locations in the state of MP. In response to the RFP No. Dated: _____ Issued by Nodal Agency including signing and submission of the Bid and all other documents related to the Bid, including but not limited to undertakings, letters, certificates, acceptances, clarifications, guarantees or any other document which the Nodal Agency may require us to submit. The aforesaid Attorney is further authorized for making representations to the Madhya Pradesh Urja Vikas Nigam Limited and providing information / responses to Nodal Agency representing us in all matters before Nodal Agency and generally dealing with Nodal Agency in all matters in connection with Bid till the completion of the bidding process as per the terms of the above mentioned in RFP.
We hereby agree to ratify all acts, deeds and things done by our said attorney pursuant to this Power of Attorney and that all acts, deeds and things done by our aforesaid attorney shall be binding on us and shall always be deemed to have been done by us.
All the terms used herein but not defined shall have the meaning ascribed to such terms under the RFP.

Signed by the within named
(Insert the name of the executants company)
through the hand of
Mr _____
duly authorized by the Board to issue such Power of Attorney
Dated this _____ day of _____
Accepted _____

Signature of Attorney

(Name, designation and address of the Attorney)
Attested _____
(Signature of the executant)
(Name, designation and address of the executant)

Signature and stamp of Notary of the place of execution Common seal of _____ has been affixed in my/our presence pursuant to Board of Director's Resolution

dated

WITNESS _____
(Signature)
Name _____
Designation _____
(Signature)
Name _____
Designation _____

FORMAT 8

FINANCIAL ELIGIBILITY CRITERIA REQUIREMENT

(To be submitted on the letterhead of Bidder/ Lead Member/ Member of Consortium)

To,
REGISTRAR
NALANDA UNIVERSITY, RAJGIR

Dear Sir,

Sub: Selection of Bidders for Implementation of Grid Connected HYBRID POWER GENERATING STATION INSIDE NU CAMPUS for Sale of Power aggregating to about ____ (in words) MWp under RESCO Model at PERMANENT CAMPUS OF NU locations in the state of BIHAR in response to the RFP No: Dated:

We submit our Bid for which details of our Financial Eligibility Criteria Requirements are as follows.

Net worth of Indian Rupees _____ Lakh computed as per instructions provided in this RFP based on unconsolidated audited annual accounts (refer Note-1 below). The relevant financial statement for respective years shall be enclosed, duly signed by authorised signatory.

Name of Entity being evaluated	FININCIAL YEAR	Financial Criteria (fill as applicable) to be met as per Table Networth (INR Lakh)

Note:
The bidders shall declare in undertaking (Format-11) the criteria on which they fulfil the financial eligibility as per the provisions of this RFP.

Yours faithfully

(Signature and stamp of Authorized Signatory of Bidder)
Name: _____
Date: _____
Place: _____

(Signature and stamp (on each page) of Chartered Accountant/Statutory Auditors of Bidder.
Name: _____

FORMAT 9

FORMAT FOR CERTIFICATE OF RELATIONSHIP OF AFFILIATE WITH THE
BIDDER

To,

Dear Sir,

Sub: Request for Proposal (RFP) Selection of Bidders for Implementation of ____ (in words) MWp Grid Connected Roof Top Solar PV Systems for Sale of Solar Power under RESCO Model at PERMANENT CAMPUS OF NU locations in the State of Madhya Pradesh

We hereby certify that M/s_____, M/s_____, M/s_____ are the Affiliate(s) of the Bidder as per the definition of Affiliate as provided in this RFP and based on details of equity holding as on seven (7) Days prior to the Bid Deadline.

The details of equity holding of the Affiliate /Bidder or vice versa as on seven (7) Days prior to the Bid Deadline are given as below:

a) In case of Bidder being Company/ LLP/ Partnership Firm/ Sole – Proprietor:

**Name of Company/ LLP/
Partnership Firm/ Sole –
Proprietor**
**Name of the Affiliate Details of
Equity Holding of**

OR

b) In case of Bidder being Consortium
**Name of Member of
Consortium**
**Name of the Affiliate Details of
Equity Holding**

Yours Faithfully

(Insert Name and Signature of Statutory Auditor or practicing Company Secretary of the Bidder/ Member of Consortium)

FORMAT 10
UNDERTAKING FORM

Undertaking from Affiliate of Bidder/ Lead Member/ Member of Consortium

Name: _____
Full Address: _____
Telephone No.: E-mail address: Fax/No.: _____

To,

Dear Sir,
We refer to the RFP No: Dated: _____ for Request for Proposal (RFP) for Selection of Bidders for Implementation of ____ (in words) MWp Grid Connected Roof Top Solar PV Systems for Sale of Solar Power under RESCO Model at PERMANENT CAMPUS OF NALANDA UNIVERSITY.

We have carefully read and examined in detail the RFP regarding submission of an undertaking, as per the prescribed Format at Annexure of the RFP.

We confirm that M/s (Insert name of Bidder) has been authorized by us to use our financial capability for meeting the Financial Eligibility as specified in the RFP referred to above in terms of Networth. We have also noted the amount of the Performance Guarantees and Bid Security required to be submitted as per the RFP by (Insert the name of the Bidder) in the event of it being selected as the Power Producer.

In view of the above, we hereby undertake to you and confirm that in the event of failure of (Insert name of the Bidder) to submit the Performance Guarantees and Bid Security in full or in part at any stage, as specified in the RFP, we shall submit the Performance Guarantee and Bid Security not submitted by (Insert name of the Bidder)".

We also undertake that we shall maintain our ownership in M/s _____ (insert name of bidder) at minimum 26% for period of one (1) Year from COD, subject to provisions of Clause 3.3b). **(in case of affiliate)**

We have attached hereto certified true copy of the Board Resolution, whereby the Board of Directors of our Company has approved issue of this Undertaking by the Company.

All the terms used herein but not defined, shall have the meaning as ascribed to the said terms under the RFP.

Signature of Chief Executive Officer/Managing Director
Common seal of has been affixed in my/our presence pursuant to Board of Director's Resolution

dated
WITNESS

(Signature)
Name _____
Designation _____

(Signature)
Name _____
Designation _____

FORMAT 11

FORMAT FOR AGREEMENT

(To be submitted on non-judicial stamp paper of INR 1000/-)

This agreement is signed on this ---- (day)----- of ----(month)---- of ----(year)----- at RAJGIR/PATNA between M/s----- (here-in-after called as "Party No 1"), and NU(here-in-after called as "Party No.2"), on the following terms and conditions:

That, the "Party No.1" has agreed to Execute Work as per Scope, Specifications and all terms and conditions mentioned in the RFP No: Dated:issued by "Party No.2".

That, the "Party No.1" has also agreed to execute work of Design, Engineering, Supply, Installation, Testing and Commissioning, including Insurance, Warranty, Spare Parts and Operation & Maintenance of Grid Connected Roof Top Solar PV Projects for Sale of Solar Power under RESCO model as per scope of work, specifications and all terms and conditions mentioned in RFP No: Dated: issued by "Party No.2", on the rates already accepted / agreed upon as mentioned in the annexed "Financial Bid" sheet, on standardized rates.

That, the rates shown in the Financial Bid sheet(s) enclosed are valid up to ____-____-20____.

That, all terms and conditions, scope of work and specifications mentioned in RFP No: Dated: issued by "Party No.2", which have been agreed upon and also the condition(s) contained in the correspondence(s) made in this matter will also form part of this Agreement.

That all the terms and conditions of the Agreement for twenty five (25) Operational Years Comprehensive O&M shall form part of this agreement.

That, in the event of any dispute or difference whatsoever arising under this Agreement, the same shall be referred to arbitrator which shall be as per the provisions of the Indian Arbitration Act, 1996 and the Rule(s) there under. All the proceedings under arbitration will take place in RAJGIR/PATNA. The award in such arbitration shall be final and binding on both the parties. In this case, the arbitrator shall be Principal Secretary, New and Renewable Energy Department, Govt. OF BIHAR OR REGISTRAR OF NU, NU.

The agreement will be valid up to ____-____-20____. The validity period may be extended further with the Mutual Consent on unchanged Terms & Condition(s), Specification(s) and Rate(s) up to one Year.

For, the matter(s) of any dispute between the "Party No.1" and "Party No.2" shall be subjected to RAJGIR/PATNA jurisdiction.

That, this agreement executed between the parties who affix their signatures at RAJGIR/PATNA, in witness whereof the parties hereto have signed the agreement:

Witnesses;
Party No.1
1.
Party No.2

FORMAT 12
FORMAT FOR CONSORTIUM AGREEMENT

Joint Bidding/ Consortium Agreement Format for Participation in “Request for Proposal (RFP) For Selection of Bidder For Design, Engineering, Supply, Installation, Testing and Commissioning Including Insurance, Warranty, Spare Parts and Operation & Maintenance of Grid Connected Roof Top Solar PV Projects for Sale of Solar Power under RESCO model At PERMANENT CAMPUS OF NU Locations in the State of BIHAR.

(To be executed on Stamp Paper of INR 1000/-)

THIS JOINT BIDDING AGREEMENT is entered into on this ____ day of _____ 2017.
BETWEEN {_____, party on **First Part** of consortium} and having its registered its registered office at _____
(Hereinafter referred to as the **“First Part” or “Lead Member”** which expression shall, unless repugnant to the context include its successors and permitted assigns)

AND

_____. Having its registered office at _____. (Hereinafter referred to as the **“Second Part” or “Member”** which expression shall, unless repugnant to the context include its successors and permitted assigns) The above mentioned parties of the First and Second Part are collectively referred to as the **“Parties”** and each is individually referred as a **“Party” WHERE AS,**

- i. NALANDA UNIVERSITY (hereinafter referred to as the **“NU”** which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns) has invited applications (the **“Applications”**) by its RFP No: Dated: _____ for award of the rate contract/ work under “Selection of Bidders for Design, Engineering, Supply, Installation, Testing and Commissioning Including Insurance, Warranty, Spare Parts and Operation & Maintenance of Grid Connected HYBRID POWER Projects for Sale of Solar Power under RESCO model at PERMANENT CAMPUS OF NU (hereinafter called **“Project”**) and Selection of Bidders for the same.
- ii. The Parties are interested in jointly bidding for the Project as members of consortium in accordance with the terms and conditions of the RFP document and other bid documents in respect of the Project, and
- iii. It is a necessary condition under the RFP document that the members of the Consortium shall enter into a Consortium agreement and furnish a copy thereof with the Application.

NOW IT IS HEREBY AGREED as follows:
Definitions and Interpretations

In this agreement, the capitalized terms shall, unless the context otherwise require, have the Meaning ascribed thereto under the above mentioned RFP.

1. Consortium
The Parties do hereby irrevocably constitute a consortium (the **“Consortium”**) for the purposes of jointly participating in the Bidding Process. The Parties hereby undertake to participate in the Bidding Process in a Project Group as per Table 1 of this RFP, only through this Consortium and not individually and/ or through any other consortium constituted for this RFP, either directly or indirectly or through any of their Affiliate(s).

2. Role of the Parties
The Parties hereby undertake to perform the roles and responsibilities as described below:

DEVELOPMENT OF PERMANENT CAMPUS (PHASE-I) FOR NALANDA UNIVERSITY

a) The parties agree to submit bid as Consortium for following Project Groups:

Project Group Participation*
(Yes / No)

- A.
- B.
- C.
- D.
- E.
- F.

**Note: Bidder shall mention 'Yes' corresponding to Project Groups it wants to bid and clearly mention 'No' for Project Groups where it does not intend to bid*

- a. Only First Part shall be evaluated for qualification against technical eligibility criteria as per RFP.
- b. First Part shall have the power of attorney from all Parties for conducting all business for and on
- c. behalf of the Consortium during the Bidding Process and after its selection as Successful Bidder.
- d. First Part would be responsible and obligated for successful execution of all work awarded to them by MPUVNL and in no circumstances the same shall be the responsibility of Second Part. Pursuant to selection of Successful Bidder as per criteria delineated in the RFP, all obligations as per RFP
- e. Second Part shall work in accordance with roles and responsibilities assigned to them by First Part as a part of their internal understanding.
- f. Parties have agreed and documented clearly stated roles and responsibilities between First Part and Second Part for execution of work awarded by MPUVNL.
- g. Subject to the terms of this agreement, the share of each Member of the Consortium in the "issued equity share capital" shall be in the following proportion: (if applicable)

Name of Member Proposed % Equity holding
Lead Member (At least 50%)

Member

3. Termination

This Agreement shall be effective from the date hereof and shall continue in full force and effect until the date of validity period of Award and further in accordance with the LICA subsequently issued if bid arrives as successful. However, in case the Consortium is either not pre-qualified for the Project or does not get selected for Award of the work, the Agreement will stand terminated in case the Applicant is not pre-qualified.

4. Miscellaneous

This Joint Bidding Agreement shall be governed by laws of India. The Parties acknowledge and accept that this Agreement shall not be amended by Parties without the prior written consent of the MPUVNL.

Party of First Part would decide on the representative of Consortium at MPUVNL.
IN WITNESS WHERE OF THE PARTIES ABOVE NAMED HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.
SIGNED, SEALED AND DELIVERED For and on behalf of Lead Member by:
SIGNED, SEALED AND DELIVERED For and on behalf of Second Part:
(Signature) (Signature)
(Name & Designation) (Name & Designation)
(Address) (Address)

In Presence of : In Presence of :

Witness -1 Witness -1

Witness -2 Witness -2

FORMAT 13
DECLARATION

(Required to be submitted by the Bidder on Original Letter Head of company)
We have carefully read and understood the enclosed Terms and Conditions of the RFP and agree to abide by them.

We declare that we are (please specify & tick mark the relevant point(s) and cross the others):

- 1. We declare that we have not been Black listed or otherwise for any Supply of Goods / Services / Works by any Ministry / Department / PSU of Central Government / Any of the State Government(s), anytime / anywhere in the Country Debarred or have failed to execute any previous work of NU.
 - 2. We solemnly undertake that the responsibility of execution of the Work as per the terms and conditions of the RFP/ Contract Agreement shall be entirely ours.
 - 3. We declare that we have not taken any support from any of the independent Consultant or Consulting Agency who is associated with NU in any form while preparing RFP.
- If this Declaration is found to be incorrect or if any RFP Condition is found violated by us, then without prejudice to any other action our Bid Security / Security Deposit may be forfeited in full and the Proposal to the Extent of Acceptance / anytime during Execution of Assignment may be cancelled.

(Signature of Authorized Signatory)

(Name & Designation in block letters)

FORMAT 14

A. GENERAL PARTICULARS OF THE BIDDER

	Name of the Company	
	Registered Office Address	
	E-mail	
	Web site	
	Authorized Contact Person(s) with name, designation, Address and Mobile Phone No., E- mail address/ Fax No. to whom all references shall be made	
	Year of Incorporation	
	Have the Bidder/Company ever been debarred By any Govt. Dept. / undertaking for undertaking any work.	
8	Reference of any documentation formation attached by the Bidder other than specified in the RFP.	
9	Whether the Bidder wishes to form a Project Company for execution of work	Yes/No
10	Bidder is listed in India	Yes/No
11	TIN No.	
12	CST	
13	GST No.	
14	PAN No.	
15	Service Tax (ST-2)	
16	Certificate of Incorporation of Bidder/ Affiliate (as applicable) enclosed	Yes/No
17	Partnership deed or LLPF/ Sole Proprietor registration (as applicable) enclosed	Yes/No

Signature of Authorized Signatory)
With Stamp

B. DEFINITIONS & ABBREVIATIONS

In this "Bid / RFP Document" the following words and expression will have the meaning as herein defined where the context so admits:

1. **"Affiliate"** shall mean a Company / Limited Liability Partnership (LLP) Firm/ Partnership Firm/ Sole Proprietor that directly or indirectly
 - i. controls, or
 - ii. is controlled by, or
 - iii. is under common control with
 a Bidder or a member (in case of a Consortium) and control means ownership by one Bidder/member of at least 26% paid up equity capital in any other Bidder/member. Any bank or financial institution shall not be considered as Affiliate.
2. **"B.I.S"** shall mean specifications of Bureau of Indian Standards (BIS);
3. **"Bid"** shall mean the Technical and Financial proposal submitted by the Bidder along with all documents/credentials/attachments annexure etc., in response to this RFP, in accordance with the terms and conditions hereof;
4. **"Bidder(s)"** shall mean bidding Company/Limited Liability Partnership (LLP) firm/ Partnership Firm/ Sole Proprietor or Consortium in any form submitting the Bid. Any reference to the Bidder includes its successors, executors and permitted assigns as the context may require;
5. **"Bidding Consortium or Consortium"** shall refer to a group of bidding Company/Limited Liability Partnership (LLP) firm/ Partnership Firm/ Sole Proprietor that has collectively made a Bid, in response to RFP for the project.
6. **"Bid Deadline"** shall mean the last date and time for submission of Bid in response to this RFP as specified in Bid Information Sheet;
7. **"Bid Security"** shall mean Bid Security to be submitted by the Bidder along with the Bid as per clause 3.17;
8. **"CEA"** shall mean Central Electricity Authority;
9. **"Capacity Utilization Factor"** (CUF) in a Year shall mean the ratio of the output of the SPV Power Plant in a Year versus installed Project capacity x 365 x 24. (CUF = Cumulative Project output in kWh / (installed Project capacity in kWp x 24 x 365)); However, for demonstration of successful Completion, CUF shall mean the ratio of the output of the SPV Power Plant in a day versus installed Project capacity x 1 x 24, adjusted to seasonality as per provisions of Clause
10. **"Chartered Accountant"** shall mean a person practicing in India or a firm whereof all the partners practicing in India as a Chartered Accountant(s) within the meaning of the Chartered Accountants Act, 1949;
11. Authority means – the authority of Nalanda University (hereinafter called NU).
12. **"Completion"** shall mean supply and erection/installation of the Project and demonstration of CUF as per provisions of clause
13. **"Commissioning"** shall mean demonstration of successful operation of the Grid Connected Project or part thereof, in accordance with prevailing regulations and clause 6.12, by the Power Producer;
14. **"Commercial Operation Date" or "COD"** shall mean Day when full PPA Capacity of the Project shall be commissioned;
15. **"Company"** shall mean a body incorporated in India under the Companies Act, 1956 or Companies Act, 2013 including any amendment thereto;
16. **"Comprehensive Operation and Maintenance" or "Comprehensive O&M"** shall mean insurance, warranty, spare parts and operation & maintenance of Projects during the term of the PPA;
17. **"Day(s)"** shall mean a 24 (twenty four) hour period beginning at 00:00 hours Indian Standard Time and ending at 11:59:59 hours Indian Standard Time;
18. **"Effective Date"** shall mean date of execution of PPA between Power Producer and Procurer;
19. **"Eligibility Criteria"** shall mean the Eligibility Criteria as set forth in this RFP;
20. **"Eligible Bidder(s)"** shall mean the Bidder who, after evaluation of their Technical Bid as per Eligibility Criteria, stand qualified for opening and evaluation of their Financial Bid
21. **"Expiry Period"** shall mean the 25th anniversary of the SCOD of the Project;
22. **"Financial Bid"** shall mean online financial Bid, containing the Bidder's quoted First Year Tariff as per format given in RFP;

23. **"First Operational Year"** shall mean the period commencing from the Initial Part Commissioning and expiring at the end of the Calendar Month in which Project completes twelve (12) Months from the COD of PPA Capacity;
24. **"IEC"** shall mean specifications of International Electro-technical Commission;
25. **"Initial Part Commissioning"** shall mean the commissioning of first part capacity of PPA Capacity by Power Producer, and shall include COD if the entire project is commissioned together;
26. **"Inspecting Authority"** shall mean the authority designated by the competent authority for the said purpose;
27. **"kWp"** shall mean KiloWatt Peak;
28. **"kWh"** shall mean KiloWatt Hour;
29. **"LICA"** shall mean Letter Inviting Consent for Agreement;
30. **"Lead Member"** shall mean the member of Bidding Consortium which is designated as leader of the Consortium by other member to represent them as Bidder for this RFP;
31. **"MNRE"** shall mean Ministry of New and Renewable Energy, Government of India;
32. **"Month(s)"** shall mean a calendar month as per the Gregorian calendar;
33. **"MWp"** shall mean Mega Watt Peak;
34. **"NU"** shall mean the NALANDA UNIVERSITY, RAJGIR
35. **"Operational Year(s)"** the First Operational Year and thereafter each period of 12 (twelve) Months till the Expiry Date of PPA. It is pertinent that, last Operational Year would get shortened by number of months by which Commissioning of Project got delayed from the SCOD;
36. **"Part Commissioning"** shall mean the Commissioning of capacity lower than the PPA capacity for the purpose of receiving the Commissioning certificate for part capacity;
37. **"Performance Test"** shall mean such tests which establish successful installation and working of equipment at desired level as per the requirement of issuing authority;
38. **"Power Producer"** shall mean anyone who has accepted the LICA then, enters into a PPA with the Procurer for supply of solar power and has legal ownership of all the equipment of the Project. After Expiry Date of PPA, ownership of Project will be transferred to Procurer as provided in the PPA;
39. **"Power Purchase Agreement or PPA"** shall mean the Power Purchase Agreement to be executed between Power Producer and the Procurer. The prescribed format for execution of PPA is attached as
40. **SECI- SOLAR ENERGY CORPORATION INDIA LTD, DELHI**
41. **"PPA Capacity"** shall mean the capacity undertaken by the Power Producer for implementation of grid connected roof top solar PV Projects for sale of solar power to Procurer after undertaking a technical analysis of the likely capacity under the RFP;
42. **"Premise"** shall mean any land, building or structure or part thereof or combination thereof including any other vacant /non vacant area which is part of the Procurer establishment;
43. **"Procurer(s)"** shall mean the person or company or organization procuring solar power from the Power Producer at competitively determined tariff under the RFP and the PPA;
44. **"Project(s)"** shall mean the Grid Connected Solar PV Project(s);
45. **"Project Capacity"** means the capacity of the Projects mentioned in the Agreement. The Project capacity specified is on "DC" Side only;
46. **"Project Group(s)"** shall mean a group of Project(s) as per Clause 2.2 of this RFP;
47. **"Project Company"** shall mean Company incorporated by the Bidder as per Indian Laws in accordance with 3.10;
48. **"Prudent Utility Practices"** shall mean the practices, methods and standards that are generally accepted nationally from time to time by electric utilities for the purpose of ensuring the safe, efficient and economic design, construction, commissioning, operation and maintenance of power generation equipment of the type specified in this RFP, as per requirements of Indian Law;
49. **"Qualified Bidder(s)"** shall mean, for given scope of work, the Eligible Bidder having quoted minimum Financial Bid in a Project Group or Eligible Bidder matching minimum
Financial Bid in a Project Group;

- 50. "RESCO"** shall mean a person or an entity, which is in the business of supplying power generated through Project installed in the Premise of the Procurer on mutually agreed terms;
- 51. "RESCO Model"** shall mean where the Bidders intend to use a Premise owned/used by the Procurer and enters into the PPA with Procurer for supply of solar power as per RFP;
- 52. "RFP"** shall mean Request for Proposal (RFP)/Bid document/Tender document and shall include formats and annexures in it;
- 53. "Scheduled Commercial Operation Date" or "SCOD" shall mean 9 months from** the PPA Signing date i.e., Effective Date as defined in PPA; including the extensions, if any, granted as per 3.19.1.
- 54. "Statutory Auditor"** shall mean the auditor of a Company appointed under the provisions of the Companies Act, 1956 or Companies Act, 2013 or under the provisions of any other applicable governing law;
- 55. "Successful Bidder(s)"** shall mean the Qualified Bidder(s) selected by NU pursuant to this RFP for implementation of Project as per the terms and condition of the RFP Documents, and to whom LICA has been issued;
- 56. "Term of PPA"** shall mean the period from the Effective Date until the Expiry Date;
- 57. "Year"** shall mean 365 Days or 366 Days in case of leap year when February is of 29 Days;
- 58. BREDA- BIHAR RENEWABLE ENERGY DEVELOPMENT AGENCY**
- 59. SBPDCL- SOUTH BIHAR POWER DISTRIBUTION COMPANY LIMITED.**

C. INTERPRETATIONS

1. Words comprising the singular shall include the plural & vice versa
2. An applicable law shall be construed as reference to such applicable law including its amendments or re-enactments from time to time.
3. A time of day shall save as otherwise provided in any agreement or document be construed as a reference to Indian Standard Time.
4. Different parts of this contract are to be taken as mutually explanatory and supplementary to each other and, if there is any differentiation between or among the parts of this contract, they shall be interpreted in a harmonious manner so as to give effect to each part.