



ITI LIMITED
Registered & Corporate Office
ITI Bhavan, Doorvaninagar
Bengaluru-560016
CIN No: L32202KA1950GOI000640

Expression of Interest for selection of firms for **Technology Transfer for Green Power System (UPS, SMPS & BESS) Manufacturing for Telecom and Other Requirements**

EoI reference no. ITI/COR/P&T/EOI/2026

6 August 2026

ITI LIMITED
REGISTERED & CORPORATE OFFICE
ITI BHAVAN, DOORAVANINAGAR
BENGALURU – 560 016
CIN NO: L32202KA1950GOI000640

NOTICE FOR EXPRESSION OF INTEREST
(EoI reference no. ITI/COR/P&T/5GEOI/2024/01)

1. Introduction:

ITI Limited (ITI), a Public Sector Undertaking under the Department of Telecommunications, Ministry of Communications, is a leading Telecom equipment manufacturer and turnkey solution provider in Information and Communication Technologies (ICT) and Telecom Domain in India. ITI is having state of the art electronic manufacturing infrastructure in its plants situated at Bengaluru, Palakkad, Rae Bareli, Mankapur and Naini. It has PAN India presence through multiple Marketing, Services & Project Execution Offices (MSP). The major customers are Government/ Armed Forces under MoD, MHA/Railways/DRDO / PSUs like BSNL, MTNL including few Private Corporates. ITI Ltd also has Solar Panel Manufacturing Infrastructure at ITI Naini.

More information can be viewed on www.itiltld.in

2. IMPORTANT DATES:

S.No.	Activity	Schedule
i.	EoI Issue Date	06.08.2026
ii.	Due Date & Time for Submission of Proposal through Uni Wizard	20.08.2026 : 06.00 PM
iii.	Date & Time of opening of Proposals	21.08.2026 :03.00 PM

3. PURPOSE

ITI intends to manufacture “Static Green Power Systems (SGPS)” (UPS, SMPS, VAR, Solar Inverter, PCS & BESS) (SGPS) for Telecom, EV and Data Center Requirements” meeting ‘including but not limited’ to the Generic Technical Requirements for telecom infrastructure as per Annexure-V. Following are the typical capacity range being sought: -

- (a) UPS (Uninterruptible Power Supply): 5 KVA to 200 KVA. Usually DC-powered (48V) to match telecom gear.
 - (b) SMPS (Switched-Mode Power Supply): 2 kW to 50 kW modules. Scalable up to 100 kW+ in parallel racks.
 - (c) BESS (Battery Energy Storage): 10 kWh to 100 kWh. Provides 4 to 8 hours of backup runtime.
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- (d) VAR (Volt-Ampere Reactive Support): 10 KVAR to 100 KVAR. Maintains power quality at remote macro sites.
- (e) Solar Inverter : 5KW to 100 KW
- (f) PCS (Power Conversion System): 5 kW to 100 kW. Integrates local solar or wind at towers.

Technical details are for reference purpose only as Technical Elements and Specification may vary as per customer requirements.

ITI Ltd having Electronic, Mechanical Manufacturing Infrastructure coupled with NABL accredited Test Labs, the selected Partner, should be ready to sign a ToT, limited for Joint Manufacturing, Maintenance and Marketing (ToT-eM) for manufacture and supply of “SGPS (UPS, SMPS, VAR, PCS & BESS) for Telecom, EV and Data Center Requirements” on non-exclusive basis, in order to enable Class-I (Indian Content) Manufacturing Solution in India, with minimum 60% Indian Content. The Tech Partner should either be a designer of such systems or having appropriate back-end technology partner, with due authorization to sign ToT (3M) with ITI Ltd.

The interested firms are requested to submit their details in the prescribed format to ITI Corporate office Bengaluru as mentioned in this Expression of Interest (EOI).

The Tech Partner may have one or more solutions and the ToT (3M) shall be non-commercial to select appropriate ToT partners to work along with designated ITI Manufacturing Plants. A separate business agreement will be signed with the selected ToT partner by the Manufacturing Plant for meeting each customer specific tender requirements based on the following: -

- (a) ToT product meeting customer specifications
- (b) Workshare for ToT (3M) between ITI Ltd and ToT Partner
- (c) Tender winnability and financial considerations

4. SCOPE

- 4.1 The strategic alliance between ITI and the Partner shall be for a period of minimum five years or as per agreed time period from the date of the agreement. The Agreement will be extended further on mutual consent. The Partner shall provide all the assistance in setting up/upgrading the manufacturing facilities at ITI units. The Partner should enable progressive manufacturing by ITI to add value addition in the product.
- 4.2 PARTNER, should be ready to sign a ToT, limited for Joint Manufacturing, Maintenance and Marketing (ToT-eM) for manufacture and supply of “SGPS (UPS, SMPS, VAR, PCS & BESS) for Telecom, EV and Data Center Requirements” on non-exclusive basis and support ITI Ltd for entire life-cycle of the product both for manufacturing, product demonstration and field maintenance requirements
- 4.3 PARTNER having design known, the Design and IP (Intellectual Property) rights including software source code will remain with the Technology Partner, ITI will not include these as part of ToT (3M). The ToT process is limited to Manufacture, Maintain and Market (3M) only. However, customer specific customization of software and security patch updates will be undertaken by the Tech Partner, during the entire product life cycle.
- 4.4 The Agreement on “SGPS (UPS, SMPS, VAR, PCS & BESS) for Telecom, EV and Data Center Requirements” manufacturing will include the hardware manufacturing, software reloading, assembly, inspection, testing, quality assurance methods, troubleshooting, supply, Installation and Commissioning if required, servicing/ maintenance during the warranty/post warranty period, training, documentation, design upgrades, system integration if required etc. as per various customer requirements.
- 4.5 The PARTNER shall ensure compliance, in totality, of his product to applicable Indian Standard specifications or any other standards, as referred in the customer requirement specific to Tenders.
- 4.6 Partner has to support ITI to get all certificates like Type Approval Certificate from any NABL/International accredited agencies for this device, TEPC certificate, Physical standard like IP68 under Mile standard (MIL-STD)
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and Mil grade for software / for encryptor and any other certification is required.

- 4.7 The PARTNER at their own cost shall develop prototype and get them type approved for the Quality Assurance by providing samples as required towards the pre-supply qualification for the customer orders.
 - 4.8 The PARTNER shall ensure the compliance of the offered product as per the Generic Technical Specifications as per Annexure-V. This is the tentative requirement for the base version, which may require further customization as per the specific customer tender requirements.
 - 4.9 The PARTNER should meet the eligibility criteria as per clause 5(A). PARTNER shall provide clause-by-clause compliance as per Annexure-II and conform to the requirements, by providing undertaking as per Annexure-III.
 - 4.10 The partner must have a fully designed and functional SGPS. The system should be readily deployable, proven and not under developmental stage as these are required on an urgent basis to meet the requirements of the customers.
 - 4.11 The Partner shall also provide few SGPS on NCNC (No cost No commitment) to ITI on returnable basis, if it is required for PoC testing and giving demo to the customer for availing business opportunities or Quality Certification etc.
 - 4.12 During or after successful technology enablement process, the PARTNER shall also support ITI for the Tenders / Purchase orders of Government, PSUs, Defense and Private customers for the products / services.
 - 4.13 The PARTNER must assist ITI in setting up the production lines and give necessary Technical Support including Specification, process diagrams & training to ITI personnel for the smooth and efficient functioning of the Production of UPS system. ITI desires that PARTNER shall assist in supply of all the necessary Infra required for Manufacturing & Testing of SGPS by gainfully utilizing the High End SMT facility (available with ITI) & Test Bench.
 - 4.14 PARTNER shall provide all the upgrades developed for the offered product (including ITI product based on Technology enablement) during the contract
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period. They should also ensure to develop the upgraded SGPS to meet upgraded Technical Specification as per prevailing standard, if any, to overcome any obsolescence.

4.15 PARTNER shall depute experienced technical personnel as per the requirements to support manufacturing and after that as and when required to resolve the technical issues for Certification or during bulk production.

4.16 PARTNER must agree to enable ITI to procure kits of the proposed product at component level as per ITI requirement.

4.17 Technology Transfer process will be completed in the form of Completely Built Unit(CBU), Semi Knock Down (SKD) and Completely Knocked Down (CKD) stages. CBU will generally be utilized for training, product demo, availing business opportunities, product certification including addressing small order quantities. On the other hand, SKD model will be used for medium order quantities and to start the manufacturing & testing process in a phased manner. Having reached SKD model, generally, the CBU will not be revisited. For larger order quantities, CKD model will be preferred based on Gerber Files, CAD drawings, Schematic, Bill Of Materials (BoM) etc. Once having reached CKD model of manufacture, generally, SKD and CBU will not be revisited.

4.18 In case of CKD stage with large manufacturing orders, ITI shall be solely responsible for procuring the materials as per BOM requirement for manufacturing and the Partner has to provide the detailed technical specifications, drawings etc. for all the components being sourced as per Purchase Manual of ITI Ltd. Partner shall also extend the technical support for using the equivalent items compatible to the BOM items.

5. **ELIGIBILITY CRITERIA FOR BIDDERS**

A	Essential Eligibility Criteria for the Applicants	
	<i>Pre-Qualifying Criteria</i>	<i>Compliance Document</i>

i.	The PARTNER should be a company registered in India having its office in India and incorporated under the Indian Companies Act, 1956/2013 and should be at least three years (from the date of releasing this EOI) old company.	The details of the company and Certificate of Incorporation
ii.	Partner shall be willing to transfer the technology of offered Product/Solutions to enable ITI to design, engineer, integrate, manufacture, Market, Sale & Service, provide maintenance of the Product/Solutions. The Partner would take responsibility on behalf of ITI to obtain the required Type Approval Certificate as well as all required BIS Certificate if required.	<i>A Self-Declaration of Technology Transfer consent to be provided.</i>
iv	Should be a profit making company for last two years. Should have ISO 9001 certificate.	Certificate copy to be provided
v.	Bidder should have experience of supply and services of at least 100 no. of SGPS in last 3 years, with any or all of the requisite BIS, MCTE, TAC, Customer Specific Quality certifications.	Documentary evidence (Customer POs and performance certificate along with contact no, email address of the customer) to prove experience to be submitted.
vi	Bidder should have 5 Cr cumulative annual turnover for last 3 financial years, that is, 2022-23, 2023-24 and 2024-25.	a. Audited account statements for the years specified to be provided. b. The Turnover certificate to be provided.
vii.	The company should be networth positive during last 3 financial years, that is, 2022-23, 2023-24 and 2024-25.	c. Audited account statements for the years specified to be provided. d. The Net worth certificate to be provided.
viii.	Technology Provider should have the	<i>1. A Compliance Statement is</i>

	sufficient manpower, Design and Manufacturing facilities. PARTNER should have design & manufacturing setup in India.	<i>needed</i> 2. Technology Provider should provide list of major manufacturing components/equipment's required for production of the SGPS.
ix.	PARTNER must confirm that there are no Patent / legal issues that might become hindrance as per scope of EOI at any stage.	<i>Self-Undertaking would be required</i>
x.	PARTNER must meet the Technical Specifications of the offered product given at Annexure-IV .	<i>self-Undertaking would be required</i>
xi.	The PARTNER should commit to provide any software and hardware life cycle support to mitigate obsolescence and optimization efforts to make it market competitive, as well as compliance to customer requirements.	<i>A Self-Declaration consent to be provided.</i>
xii.	Partner shall submit self-declaration(s) that the Partner or any of the promoters/directors/Partner or member not blacklisted/ banned/ debarred/ suspended by the Central/ any other States/ Union Territories Government/ Quasi- Govt/ Govt. undertaking/ Banks/Financial Institution or its agencies for indulging in corrupt or fraudulent practices or for indulging in unfair trade or for any other reasons or bad performance/ delayed delivery / Bank NPA, CDR (Corporate Debt Restructuring), SDR (Special Debt Restructuring), NCLT or for any other defaulting reason as on date of opening of this EOI.	<i>A Self-Declaration of not being under any black list or Barring.</i>
xiii.	The IPR or copyright/License/Design of the product to be owned by the PARTNER. The PARTNER should have its	<i>(i). Relevant documents to the ownership to be submitted Bidder to provide an undertaking to</i>

	own R&D set-up in India. Either, the Tech Partner should own IPR or the back-end Tech Partner owning the IPR, should authorise the front-end Tech Partner of ITI Ltd, for signing ToT (3M).	<i>apply for IPR (Intellectual Property Right) or Copyright / License/ Design for the offered product design in India. Details of R&D infrastructure including technical manpower resources to be submitted</i>
xiv.	PARTNER should meet the specifications for manufacturing of the SGPS as mentioned in Annexure-V. However, for future orders, PARTNER should also meet the specifications of customer for continuation of collaboration for manufacturing of the offered.	<i>A Compliance statement is needed.</i>
xv.	Responsibility of Technology Partner under CKD manufacturing is as below. The PARTNER shall provide the design of the SGPS vide an agreement enabling ITI to manufacture SGPS with following manufacturing infrastructure at ITI Ltd. - SMT assembling using components supplied by suppliers - Bill of materials list along with technical specifications, part nos. and the OEM details - THT and manual assembling using component supplied by suppliers - Mechanical part assembling using component supplied by suppliers - PCBA testing - Plastic injection using materials supplied by suppliers - Product assembly - Product Calibration - Software flashing - Product Testing - Debugging of product - Printing & Sterilization - Packaging	<i>A Compliance Statement is needed</i>

	n. QC Lab o. Any other procedure which is required for manufacturing the offered product. Note: Investment in the Capex items will be based on the business feasibility and customer orders.	
xvi.	Orders issued by the Government of India restricting procurement from certain countries which shares a land border with India shall apply to this procurement. Any PARTNER or their OEM, from a country which shares a land border with India shall be eligible to bid in this tender only if they are registered with the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).	PARTNER or their OEM sharing land border with India, which are not part of restricted countries shall provide the certificates of registration in this regard from DPIIT. Undertaking format is provided in Annexure –IX.
xvii.	The PARTNER must have capability to produce the offered product in accordance with Industry Standards catering to different regions along the globe and relevant standards. The PARTNER has to provide free software /firmware/patches/software upgrades to ITI for the product as per customer order conditions during the pre-sales and post sales phases of the product to ascertain the compliance of the product with the standards and specifications.	A Compliance Statement is needed
B	SPECIAL CONDITIONS	
i.	ITI will be selecting Technology Partners based on the eligibility conditions as per this EOI.	
ii	As per Govt. procurement policy for Micro and small Enterprises, 2012 (amended 2018 and 2021), Micro and Small Enterprises (MSEs) may be given relaxation in prior turnover and prior experience criteria during tender process, subject to meeting of Quality and Technical Specifications. MSE vendors who are registered under Ministry of Micro and Small Enterprises, Government of India shall submit all the relevant documents for claim of benefit extended to MSE. Also mention whether the MSE certificate	

	is issued for the relevant area pertaining to the terms of the EOI. The MSE who are authorized dealers/distributors are not eligible for availing the benefits extended to MSME's.
iii	Relaxation in prior turnover and prior experience to all Startups (whether MSEs or otherwise) will be provided subject to meeting of quality and technical specifications in accordance with the relevant provisions of GFR 2005. However, there may be circumstances like procurement of items related to public safety, health, critical security operations & equipment etc. Wherever adequate justification exists, this relaxation need not to be exercised.

6. **REQUIREMENTS**

6.1 The bidder should be willing to sign non-commercial ToT (3M) for Joint Manufacture with ITI Ltd in CBU, SKD & CKD model, the specific model will be selected based on business opportunity cum customer specific tender.

6.2 The bidder should be willing to support ITI in tenders floated for the product, by meeting the technical conditions of the tender.

6.3 The bidder should be willing to provide comprehensive support to ITI for the installation, commissioning, warranty and post warranty servicing of the product.

7. **DOCUMENTS / INFORMATION TO BE SUBMITTED**

- 7.1 All the Information like Complacence, Undertaking & self-Declaration Ask in Clause 5
 - 7.2 Brief technical literature of the product
 - 7.3 Certificate for supply and satisfactory performance of the product
 - 7.4 Copies of the audited annual report for the last three years (2022-23,2023-24,2024-25).
 - 7.5 Auditors Turnover certificate signed by the company's Auditors/ CA for last 3 financial years
 - 7.6 Details of support centers available in the country at present.
 - 7.7 The bidder should submit their profile as per Annexure-II
 - 7.8 The bidder should submit 'Clause by Clause Compliance' as per Annexure-III
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- 7.9 In case the Bidder is the OEM, a No Objection Letter from the design partner shall be submitted

8. **SUBMISSION OF PROPOSAL**

- 8.1 Bidders may send their queries to the following address before End Date:

Ph: +91 8793287247

(Email-pp_crp@itiltd.co.in ; umesh_crp@itiltd.co.in)

- 8.2 Bidders may submit their proposals online in the website
<https://itilimited.ewizard.in/>.

- 8.3 All the pages of the proposal shall be signed by an authorized person of the bidder organization.

9. **GENERAL CONDITIONS**

- 9.1 Submission of response to this notice inviting EoI shall be deemed to have been done after careful study and examination of this document with full understanding of its Scope, Specifications, Terms, conditions & Implications.

- 9.2 Shortlisting of firms will be done by a committee nominated to evaluate the proposals based on the Pre-requisites / Eligibility given in the EoI document.

- 9.3 Shortlisting of firms will be done based on design and development experience, and availability of technical experts and other resources. ITI limited shall examine the details submitted by the applicant as mentioned in Clause-5 &7.

- 9.4 All the information sought above and any other additional information considered necessary by ITI should be submitted by the Bidder. Failure to furnish all information required in every respect will be at the Bidder's risk and may result in the rejection of the EoI/ offer. The Bidder is expected to examine all instructions, terms and conditions and scope of work in the EoI document(s).

- 9.5 ITI may select more than one Firm for UPS, SMPS & BESS Solution based on the sector wise Firm's product/Solutions availability and compliance to Minimum Technical Requirement.

- 9.6 The selected partner shall execute the ToT Agreement. The draft ToT will be provided post technical qualification. Any modifications to the draft will be made in consultation with the selected partner
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9.7 **Period of Validity of offers**: The offer shall remain valid for a period of at least 180 days from the due date of offer submission. Offers valid for a shorter period shall be rejected.

9.8 **Late offer**: Any offer received after the prescribed timeline is liable to be rejected and returned unopened to the bidder.

9.9 **Language of offers**: The offers prepared by the vendor and all the correspondences and documents relating to the offers exchanged by the bidder, shall be written in English language.

9.10 **Award of Contract**: ITI reserves the right to enter into technology tie up with any bidder/bidders who meets the eligibility conditions and, if finalized by ITI, a TOT Agreement will be signed with the selected bidder for pursuing all activities related to addressing tenders.

9.11 **Authorized Signatory**: All certificates and documents received as part of the offer shall be signed by the Authorized Representative (signing is not mandatory for technical manuals). The power of authorization, or any other document consisting of adequate proof of the ability of the signatory to bind the bidder shall be submitted when demanded by ITI.

9.12 ITI reserves the right to suspend or cancel the EoI process at any stage, to accept, or reject any, or all offers at any stage of the process and / or to modify the process, or any part thereof, at any time without assigning any reason, without any obligation or liability whatsoever.

9.13 **Cost of EoI**: The bidder shall bear all costs associated with the preparation and submission of his/ her response against this EoI, including cost of presentation for the purposes of clarification of the offer, if so desired by ITI. ITI will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the EoI process.

9.14 The bidder shall be ready to give clarifications on any part of the offer to ITI.

9.15 **Amendment of EoI**: At any time prior to the last date for receipt of offers, ITI, may, for any reason, whether at its own initiative or in response to a clarification requested by a bidder, modify the EoI document by an amendment. In order to provide bidders reasonable time to take the amendment into account in preparing his / her offer, ITI may, at their discretion, extend the last date for the receipt of offers and/or make other changes in the requirements set out in the Invitation for EoI.

9.16 **Disclaimer**: ITI and/or its officers, employees disclaim all liabilities from any loss or damage, whether foreseeable or not, suffered by any person acting on or refraining from acting because of any information including statements,

information, forecasts, estimates or projections contained in this document or conduct ancillary to it whether or not the loss or damage arises in connection with any omission, negligence, default, lack of care or misrepresentation on the part of ITI and/or any of its officers, employees.

9.17 Accessibility of EoI Document: Complete EoI document with terms and conditions is provided in the following website-

1. <https://www.itilttd.in/>
2. <http://eprocure.gov.in/>
3. <https://itilimited.ewizard.in/>

9.18 ITI reserves the right to terminate the Empanelment if the progress of work is not satisfactory or there has been any breach of the terms & conditions or the feasibility study report is not submitted within the time schedule or if the report is not accepted by ITI even after clarifications are received.

9.19 Force Majeure: If any time during the continuance of this Empanelment, the performance in whole or part by either party under obligation as per this contract is prevented or delayed by reasons of War, Hostility, Act of Public Enemy, Civil Commotion, Sabotage, Fire, Flood, explosion, epidemic, quarantine restrictions, strike, lockout, or acts of God (herein referred to "eventuality"), provided notice of happening of such eventuality is given by either party to the other within 7 days of date of occurrence thereof, neither party shall by reason of such an eventuality be entitled to terminate this contract nor shall non-performance or delay in performance and deliveries under the contract.

9.20 Termination or Insolvency: ITI may at any time terminate the Empanelment by giving written notice to the Bidder, without compensation to the Bidder, if the Bidder becomes bankrupt or otherwise insolvent as declared by the competent court provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to ITI.

9.21 Arbitration: In the event of any dispute or difference arising under this agreement or in connection therewith (except as to the matter, the decision to which specifically provided under this agreement) and no settlement can be arrived at mutually, the same shall be referred to an arbitrator to be appointed in accordance with the Arbitration and Conciliation Act 1996. The arbitrator may, from time to time, with the consent of both the parties, enlarge the time frame for making and furnishing the award. Subject to the aforesaid Arbitration and Conciliation Act 1996 and the rules made there under, any modification thereof for the time being in force shall be deemed to apply to the

arbitration proceeding under this rule. The venue of the arbitration proceeding shall be the Corporate Office, ITI at Bangalore or such other places as the arbitrator may decide. Indian laws shall govern this contract.

Annexure-I**Undertakings (To be in Bidder's Letter Head)**

We, M/s..... do hereby undertake the following:

1. We are not blacklisted by Central Govt./ any State or UT Govt/ PSU/ organized sector in India to work with ITI as per this EOI and Customer Tender terms and conditions. Also we agree to implement the project (scope of work as per Tender terms and conditions including investment) covering Warranty & post-warranty services, maintenance etc., in the event of ITI winning the contract on back-to- back basis.
 2. We undertake to submit Performance Bank Guarantee (..... % of contract value) to ITI (as decided by ITI) as per Customer Tender terms & conditions.
 3. That we have adequate manpower with qualifications, certifications and experience as may be required to provide TOT to ITI as well as to provide services/support to the customer as per their tender/PO requirement.
 4. We will obtain all the required certificates/approvals as per customer tender requirement.
 5. We undertake to obtain relevant statutory licenses for operational activities.
 6. We are willing to sign TOT Agreement, Integrity Pact with ITI for addressing the customer requirements as per customer's tender terms and conditions.
 7. We undertake to indemnify ITI from any claims / penalties / statutory charges, liquidated damages, with legal expenses etc. as charged by the customer.
 8. To support the offered equipment for warranty and Post warranty AMC as per the requirement of Customer tender terms and conditions. All software upgrades, patches and Licenses to be provided free of cost, as and when they are released.
 9. We undertake to supply equipment/components which conform to the latest year of manufacture.
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10. We undertake not to partner with any other organization for addressing the customer requirement for the Products mentioned in this EOI and to accept payment terms, LD, Penalties, etc. on back-to-back basis

11. The bidder should give certificate/undertaking stating that all the hardware / software supplied under the contract shall not contain any embedded malicious codes that could inhibit the desired functions of the equipment or cause malfunction of equipment in any manner.

Signature:

Name:

Designation of Authorized Signatory:

Annexure-II**Bidders Profile**

1	Name and address of the company			
2	Contact Details of the Bidder (Contact person name with designation, Telephone Number, FAX, E- mail and Web site)			
3	Area of business			
4	Annual Turnover for 3 financial years (Rs in Lakhs)	2022-23	2023-24	2024-25
5	Date of Incorporation			
6	GST Registration number			
7	PAN Number			
8	CIN Number, if applicable			
9	Number of technical manpower in company's rolls			
10	Number of R&D engineers			

Annexure-III**Compliance Statement**

Section Details		Clause Numbers	Compliance (YES/NO)	Documentary Reference, If any
Technical BID				

ANNEXURE-IV

Technical Specification for Base Version of the Products

A. UPS (Uninterruptible Power Supply): 5 kVA to 200 kVA. Usually DC-powered (48V) to match telecom gear.

Section B:-SMPS:

- The SMPS rating may be specified separately for individual rectifier/ modules and the overall system/rack capacity. Modules may be defined in terms of current rating (e.g., 25 A, 50 A, 100 A), while the overall system/rack capacity may be specified from 150 A to 3000 A (ultimate capacity), with support for single-phase and three-phase configurations, as per TSEC requirements.
- Rectifier: The power plant shall support for N+1 module redundancy.
- The AC input supply voltage (single-phase and three-phase), input frequency, and DC output voltage shall comply with the requirements specified in **TEC/GR/FA/SMP-001/07/MAR-17** (supersedes No. TEC/GR/FLA/SMP-001/06/JUNE 2010)

1. Inverter:

- Inverter Unit of 0.5 to 7.5 KVA is required to provide AC output for Critical Telecom Load.
- Output of pure sine wave should be provided by the UPS
- TEC GR No.: TEC 66140:2019 with latest amendments.

2. Rectifier:

- Rectifiers with capacity of 1000W- 5000W are required.
 - It should be based on TEC GR No.:(TEC 66080:2016) with latest amendments.
 - Considering Village Application, Rectifiers should operate on AC inputs 100VAC to 300VAC. At minimum AC input voltage of 100V, the capacity should not go below 500W.
 - Rectifier should work in Hot Standby Mode.
 - Rectifier should change from active to standby after every 7 days to increase reliability of standby card.
 - Both Rectifier Modules should be Pluggable chassis based for easy maintenance and servicing.
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3. Battery specifications:

- Capacity: 2400 VAH with option to use (12 v/ 24v/ 36v/ 48v)
- Battery Type: Lithium Ion as per TEC GR No.67030:2016
- BMS Technology: Active BMS
- Battery Theft Prevention: Digital Interlock to Prevent Battery Misuse
- BMS Interlock based on between Hybrid Solar CCU & Battery: RS485/CAN bus
- Digital Interlock to Prevent Battery Misuse

Addition Items to Make UPS as a Hybrid UPS

1. Solar Charge Controller: (Optional any Green Energy Source)

- One Number of Solar Charge Controller using MPPT Technology is required. in the Solution having high input voltage providing better efficiency having galvanic isolation based on TEC GR Standard No: (TEC 66080:2016)
- This unit should be pluggable as an option as per site requirement. It should be based on TEC GR Standard No: (TEC 66080:2016) with latest amendments.
- MPPT Type Solar Charger with solar panels with minimum 500W are required on Site with Priority for Solar Charging over Grid Charging.
- All system should have compatibility to plug solar whenever required in modular chassis-based design, to plug solar or not will be optional.

1. Solar Panel: (Optional any Green Energy Source)

- Solar panels with minimum 500W each shall be supplied with MPPT card as per TEC GR : 66080:2016

2. DSCA Unit: One Central DSCA Unit should be there in system to control and manage

- Inverter Module
 - MPPT Solar CCU Module
 - Battery Input Digital Interlock: RS485 / CAN bus
 - DSCA shall be as per TEC GR Standard No.:(TEC 66080:2016) & TEC 66140:2019
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- LED/LCD Display & Alarms regarding all UPS, Rectifier & Solar CCU based on both TEC GR Standard No.:66080:2016) &TEC 66140:2019
 - Lithium Ion Battery.
 - Static Transfer Switch
 - This unit shall have remote monitoring for all parameters through RS232/RS485/SNMP/IP & shall integrate with the rack for extending all the monitoring parameters to the S-NOC/C NOC
- AC to AC efficiency of the UPS unit should be more than 85% at nominal input.
- The UPS shall have provision of one output USB (3.0 or better) port of 5V, 2 Amps DC also.

B. Switched-Mode Power Supply (SMPS) Tentative Specification

The SMPS rating for individual rectifier/ modules and the overall system/rack capacity. Modules may be defined in terms of current rating (e.g., 25 A, 50 A, 100 A), while the overall system/rack capacity may be specified from 150 A to 3000 A (ultimate capacity), with support for single-phase and three-phase configurations, as per TSEC requirements.

Rectifier: The power plant shall support for N+1 module redundancy.

The AC input supply voltage (single-phase and three-phase), input frequency, and DC output voltage shall comply with the requirements specified in TEC/GR/FA/SMP-001/07/MAR-17 (supersedes No. TEC/GR/FLA/SMP-001/06/JUNE 2010)

1. SMPS 2 kW to 50 kW modules. Scalable up to 100 kW+ in parallel racks
 2. Switch Mode Power Supply (SMPS) Based Power Plant GENERIC REQUIREMENTS No.: TEC/GR/FA/SMP-001/07/MAR-17 (Supersedes No. TEC/GR/FLA/SMP - 001/06/June.2010) : TEC 66069:2015
 3. All core equipment shall be powered from dual power sources (new or existing). The designed battery back-up can be distributed in the two sources. The meaning of the dual power source is that the equipment supplied should have a provision to have two input power sources [say DC1, DC2 or AC1, AC2 as applicable] and each will be separately fed
-

power from TWO independent SMPSs/UPSs. Each such SMPS/UPS will have their own battery banks.

4. SMPS power plants are to be compatible with Li-ion batteries.
5. Suitable switching arrangement for inter connection between various items of SMPS Power Plants, Li-ion Battery sets and their interconnection in switching cubicle and further power distribution to equipment as required for the ultimate capacity of the power plant and battery sets shall be provided.
6. Battery Charger: Automatic trickle /boost battery charger of SCR or SMPS type to charge the starting battery of DEA set. This charging shall be done through main supply for which a suitable incomer shall be provided in the panel with suitable range of ammeter and voltmeter on the DC side with protective fuses.
7. Battery Charging: The battery charging shall be done through alternator and SMPS type solid state battery charger.
8. CHARGER (FR/FC) SMPS Technique using Switching Frequencies 20KHz and above. SMPS Technique using Switching Frequencies 20KHz and above.

Additional specifications:

SMPS power plants are to be compatible with VRLA as well as Li-ion batteries.

TEC GR for Switch Mode Power Supply:

TEC/GR/FA/SMP-001/07/MAR-17 (Supersedes No.
TEC/GR/FLA/SMP - 001/06/June.2010)

C. BESS Tentative Specification

Battery Energy Storage Systems (BESS) specifications are defined by their capacity, power rating, chemistry, and efficiency. Standard utility-scale specifications require **Lithium-ion** (LFP) or Sodium-ion architectures, 380V-415V AC output, >85% depth of discharge (DoD), and operate safely between -30°C and +50°C.

BESS (Battery Energy Storage): 10 kWh to 100 kWh. Provides 4 to 8 hours of backup runtime.

The following is the core parameter of BESS System:

1. Capacity & Performance Specs

- **Energy Capacity (kWh / MWh):** The total amount of energy the system can store. (e.g., Cummins Battery Energy Storage Systems range from 10 kWh to 110 kWh nodes).
- **Power Rating (kW / kVA):** The maximum rate of electricity the system can deliver at once.
- **Depth of Discharge (DoD):** The percentage of battery capacity used before recharging. Typically >85% for optimal lifespan.
- **Round-Trip Efficiency (RTE):** The ratio of energy discharged to energy put in during charge, typically >90%.

2. Physical & Environmental Specs

- **C-Rate:** Measures charge and discharge speeds. A 0.5C rating signifies the system can fully charge or discharge in 2 hours.
- **Thermal Management:** Liquid-cooled batteries or HVAC systems inside **ABB Utility-scale BESS** containers are used to regulate cell temperatures.
- **IP Rating:** Outdoor containerized solutions typically require an IP55 rating for dust and water protection.

3. Electrical & Safety Specs

- **Power Conversion System (PCS):** Bidirectional inverters that convert DC battery power to AC grid power.
 - **Battery Management System (BMS) & EMS:** The hardware/software monitoring cell health, thermal thresholds, and communication with the smart grid.
 - **Compliance Standards:** Robust installations adhere to fire/safety codes such as **NFPA 855**, **UL 9540** (Energy Storage Systems), and **UL 9540A** (Thermal Runaway Evaluation).
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ANNEXURE V

Declaration regarding “Restrictions on procurement from a Bidder of a country which shares a land border with India”

(To be submitted on Applicant’s Letter Head)

To,

Dear Sir,

In reference to bid submitted by M/sagainst ITI EoI Document Number:,
I/We have read the Order No:F.No6/18/2019-PP Dated: 23-July-2020 from Department of Expenditure, Ministry of Finance regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries.

I/We certify that we/our Collaborator/Assignee are/is not from such a country or, if from such a country, have/has been registered with the Competent Authority and we will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

We here by certify that we fulfill all requirements in this regard and are eligible to be considered.

We further confirm that evidence of valid registration by the Competent Authority for us/our Collaborator/JV Partner / Consortium member/Assignee, as applicable, is enclosed as Annexure...

*Bidder to strike-off, if not applicable.

Date:_____

Seal of Organization

Place:

Signature of Authorized Applicant

Annexure VI**C H E C K L I S T**

Sl. No	Details of documents to be submitted	Compliance (Yes /No)
1	Annexure-I Undertaking	
2	Annexure-II – Bidder’s Profile	
3	Annexure-III – Compliance statement	
4	Annexure IV Proposed Technical Compliance/ solution Document	
5	Certificate for supply and satisfactory performance of the product	
6	Copies of the audited annual report for the last three years (excluding the current year).	
7	Documents to support Eligibility criteria	
8	Signed Copy of EoI as compliance to all the terms and conditions of the EoI	
10	Annexure-VI-Duly filled checklist	
11	Annexure-V Declaration regarding “Restrictions on procurement from a Bidder of a country which shares a land border with India”	