



ITI LIMITED
(A Government of India Undertaking)



**TENDER
FOR
SETTING UP OF 500MW FULLY AUTOMATIC SOLAR
PHOTOVOLTAIC (SPV) MODULE MANUFACTURING LINE (ON
TURNKEY BASIS) AT ITI LIMITED, NAINI, PRAYAGRAJ.**

Enquiry No.: NPA5E0001

Dated: 2nd, January, 2025

**Purchase Officer (Enquiry Cell)
IMM Dept, ITI Limited, Mirzapur Road,
Naini Unit, Naini, Prayagraj-211010
Mobile No: +91-7007462166
Email: enqcellx_nni@itilttd.co.in
Website: <http://www.itilttd.in/>**

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FORM NO.
XPR14/M2/0995/24
ITILIMITED
MIRZAPUR ROAD, NAINI, ALLAHABAD- 211010 (U.P.), INDIA

Notice Inviting Tender (NIT)

ALL: enqcellx_nni@itild.co.in
ENQUIRY NO.NPA5E0001

WEB-SITE: <http://www.itild.in>
DATE: 02.01.2025

DUE DATE: 23.01.2025 up to 10:30 AM
OPENING DATE: 23.01.2025 at 11:00 AM

DEAR SIR,

PLEASE QUOTE YOUR LOWEST RATES AND BEST DELIVERY TERMS IN THE PRESCRIBED EXCEL FORMAT AVAILABLE ON <https://itilimited.ewizard.in> No hard copies will be entertained in any manner.

ITEM NO.	DESCRIPTION OF MATERIAL AND ITI CODE	QUANTITY REQUIRED	DRAWING OR TECHNICAL SPECIFICATION	DELIVERY and I&C REQUIRED
1.	Setting up of 500MW Fully Automatic solar photovoltaic (SPV) Module Manufacturing line (On Turnkey Basis) at ITI Limited, NAINI, Prayagraj	01 Set	Attached	Within 7 months from date of PO.

OFFER MUST BE SUBMITTED ONLINE ONLY.

1. **NOTE:** Bidder must ensure that offered item is as per technical specification.
2. Bid must be submitted in two Covers (Two Bid System) with Our Enquiry No. and due date.
 - Technical Bid with Compliance sheet of technical specification, acceptance of Tender General term and condition & consent for Pre-contract Integrity pact.
 - Commercial bid to be submitted along with HSN code (in 8 digits) of offered part No, GST rate, Basic price etc.
 - Bid should be submitted ONLINE on the above-mentioned portal.
3. Vendor's compliance must be provided for offered product against parameters of Technical Specification & same to be submitted along with the technical bid.
4. The detailed technical requirements & General Terms and conditions of each part mentioned in tender documents for submission of Tender (which is an integral part of this tender enquiry) are attached. Compliance of this must be submitted with tender technical bid otherwise it will be presumed that the same are acceptable to the bidder.
5. **TERMS OF PRICE: DAP, ITI LTD WORKS, NAINI, should be quoted in INR/USD/EURO.**
6. **TERMS OF PAYMENT: 100% irrevocable LC with usance credit period of 90 days, as under:**
 - i. 50% against supply [with usance credit period of 90 days from date of shipment] Based upon certificate issued by ITI Limited, for having certified receipt of equipments/items in good condition along with submission of pre-dispatch inspection certificate, Internal inspection report/certificate, warranty certificate as per P.O. terms]
 - ii. 40% against I & C [with usance credit period of 90 days from the date of completion of I&C] [Based upon certificate issued by ITI Limited, for having certified successful installation & commissioning of the equipments/items]
 - iii. 10% against PBG [with usance credit period of 90 days from the date of completion of I&C or date of submission PBG whichever is later] [Based upon certificate issued by ITI Limited, for having certified successful installation & commissioning of the equipments/items along with submission PBG as per PO terms]

Note:

1. All the LC related charges has to be borne by the party.
2. LC of First Mile stone payment i.e. 50% of the invoice value will be open within 30 days after receipt of PBG against LOI.
3. LC of Second Mile stone payment i.e. 40% of the invoice value will be open within 30 days after receipt of complete material at ITI, Naini Works.
4. LC of Third Mile stone payment i.e. 10% of invoice value will be open after installation & commissioning.
5. Payment will be made for the accepted quantity only. **NO PAYMENT WILL BE MADE FOR THE REJECTED QUANTITY.**

However, ITI prefers long credit period.

For any variation in payment terms quoted by different Vendors, loading in the comparative statement will be made suitably. No advance payment terms are acceptable.

7. Supplies should be made from the latest batch of production.
8. Batch no. should be indicated on component, packet & delivery challan.
9. Test Certificate / Checklist should accompany each supply.
10. Goods will not be accepted if above instructions are not followed.
11. Tech. leaflet/ordering information should be enclosed with quotations.
12. No conditional offer is acceptable.
13. Vendors should give consent to sign the enclosed pre- contract Integrity pact. Integrity pact has to be signed with the qualified bidder immediately after placement of PO. Those bidders who are not willing to sign Integrity pact will not be considered for bid processing.
14. SD/PBG shall be liable to be forfeited, if Vendor fails to execute the PO.
15. As GST is implemented, following information are mandatory to mention along with quotation
 - Vender Name
 - Address
 - PAN No. along with Photocopy of PAN
 - Copy of GSTIN Registration
16. For any clarification, e-mail to enqcellx_mmi@itilttd.co.in, Phone No: 0532 -2687379/
Mob.7007462166/8299168488.
17. You may be present at the time of tender opening.
18. Reverse Auction:
 - The reverse auction will be applicable in this tender, where eligible bidders can reduce their prices in real-time to secure the lowest bid. The lowest price at the end of the auction will be considered for award, subject to compliance with all tender terms and conditions.
 - Only those bidders who have qualified based on the technical and financial evaluation as per the tender document shall be eligible to participate in the Reverse Auction.

SPECIAL NOTE:-

- A. PLEASE SUBMIT YOUR OFFER ONLINE WITHIN DUE DATE.
- B. The party may indicate whether they fall under purview of MSME Act 2006 and if so the certified copy of relevant valid registration certificate as a proof may be submitted along with the tender bid. In case such certificate is not produced at the time of bid party will not be considered to be falling under this category.
- C. Our Organization is ISO 14001 Certified Company .Offers should be in compliance with ISO 14001 requirement.
Please visit our web-site: <http://www.itilttd.in> , <https://itilimited.ewizard.in> for detail. For any clarification please feel free to contact us.

Yours faithfully,
For ITI LIMITED

Purchase Officer

**Government e-Procurement System
Tender Input Form-CPPP
(For e-Publishing)**

TENDER INPUT FORM

Please **do not use special characters in any field** as these characters are not allowed to enter in the actual ON Line Form e.g. **& and Colon (:)** but Comma (,), slash (/), bracket (), dot (.) and dash (-) can be used.

(A) Basic details:

1	Tender Reference No. / Tender ID *	NPA5E0001
2	Tender Type *(Open / Limited / EOI / Auction/ Single)	Open
3	Form of Contract * (Buy / Supply / Piece Work / Lump-sum / Multi Stage / Fixed Rate / Turn-key / Works / Sale / Item Rate / Rate Contract)	Turn-key
4	No. of Covers * (1 / 2 / 3 / 4)	2
5	Tender Category * (Goods / Services / Works)	Goods
6	Account Type Head * (State Government Funded / Central Government Funded / Others)	Central Government
7	No of Bid Openers (2 of 2)	(2 of 2)
8	Payment Mode * (Offline / Online)	On Line
8a	If Offline : As Per Tender Document, Not Applicable DD -Demand Draft, BG -Bank Guarantee BC -Bankers Cheque, SS -Small Savings Instrument ACG-67 Receipts, Personal Cheque , FDR , RTGS / ECS / NEFT/	As Per Tender Document

(B) Cover details:

	No. of Covers	Cover Type	Contents
1	Single Cover (Fee/Prequal/Technical/Financial)	N/A	N/A
2	Two Covers (a) Fee/Prequal/Technical (b) Financial	Two Covers	a) Technical b) Financial
3	Three Covers (a) Fee (b) Prequal/Technical (c) Financial	N/A	N/A
4	Four Covers (a) Fee (b) Prequal (c) Technical (d) Financial	N/A	N/A

(C) NIT Document (Attached files should be in Word and Excel only)

S No.	File Name	Document Description	Type	Size
1	NPA5E0001	NIT	Word/excel	

(D) Work / Item Details:

1	Work / Item Title *	Setting up of 500MW Fully Automatic solar photovoltaic (SPV) Module Manufacturing line (On Turnkey Basis) at ITI Limited, NAINI, Prayagraj
2	Work / Item Description *	AS per Tender
3	Pre-qualification Details	AS per Tender
4	Product Category * (select from the provided list only)	Miscellaneous Goods
4a	Product Sub Category *	
5	Contract Type * (Tender / Empanelment / Rate Contract)	Tender
6	Tender Value * (INR)	65.00 Cr. (Approx)
7	Bid Validity days * (120 / 90 / 60 /30) If other, specify	120 days

8	Calendar Completion / Delivery Period in Days	6 to 7 months
9	Location Detail of Work / services / items *	ITI Ltd, Naini Unit, Mirzapur Road, Naini, Allahabad
10	Pin code	211010
11	Pre Bid Meeting * (Yes / No), If Pre Bid Meeting is Yes	Yes.
11a	Pre Bid Meeting Place *	ITI Ltd, Naini Unit, Mirzapur Road, Naini, Allahabad
11b	Pre Bid Meeting Address *	
12	Bid Opening Place *	ITI Ltd, Naini Unit, Mirzapur Road, Naini, Allahabad
13	Tenderer Class * (As per tender document / NA)	As per Tender Document
14	Inviting Officer *	Purchase Officer (Enquiry Cell)
15	Inviting Officer Address with Phone and email: *	MM Department, ITI Ltd, Naini Unit, Mirzapur Road, Naini, Allahabad Ph. 0532 -2687379/ MOB:7007462166/8299168488

(E) Fee Details:

1	Tender Charges:	N/A
1(a)	Tender Fee	Rs. 20000.00
1(b)	Processing Fee	
1(c)	Surcharges	
1(d)	Other Charges	
1(e)	Tender Charges Payable To *	
1(f)	Tender Charges Payable At *	
2	EMD Fee details:	
2(a)	EMD Fee (Fixed / Percentage)	Percentage
2(b)	If EMD Fee is Fixed then EMD Amount (In INR): If EMD Fee is Percentage then EMD Percentage %	1.3 Cr. 2%
2(c)	EMD Exemption Allowed (Full / Partial / None)	None
2(d)	If EMD Exemption Allowed is Partial, then EMD Exemption Percentage %	
2(e)	EMD Fee Payable To *	ITI Ltd, Naini
2(f)	EMD Fee Payable At *	ITI Ltd, Naini

(F) Critical Dates:

SI No		Dates (DD/MM/YY)	
1	Publishing Date	02.01.2025	16:00
2	Document Sale / Download Start Date		
3	Document Sale / Download End Date	23.01.2025	10:30
4	Seek Clarification Start Date	---	
5	Seek Clarification End Date	---	
6	Pre Bid Meeting Date	---	
7	Bid Submission Start Date	03.01.2025	09:00
8	Bid Submission End Date	23.01.2025	10:30
9	Bid Opening Date	23.01.2025	11:00

(G) Uploading the Tender documents ;(only pdf, jpg, xls & rar files allowed)

S No	File Name	Document Description (NIT / Tender / BOQ / Additional)	File Type	Size
1				

Note: Pl. use some prefix to the **file name** which can indicate the category it belongs to. e.g.
NIT_XXXX / Tender_XXXX / BOQ_XXXX / Addl_XXXX, where XXXXX is 'Actual file name'

Prepared by: AM (IMM)
(Mobile.) 7007462166/8299168488

Approved by: AGM (HR, S & IMM)
(Phone No.) 0532 -2687379

ITI LIMITED
(A Government of India Undertaking)
Mirzapur Road, Naini,
Prayagraj – 211010 (UP) INDIA

BID DETAILS

Enquiry No.: NPA5E0001

Dated: 2nd, January, 2025

ITI Limited invites Tender for “Setting up of 500MW Fully Automatic solar photovoltaic (SPV) Module Manufacturing line (On Turnkey Basis) at ITI Limited, NAINI, Prayagraj”.

Scope of Work	Setting up of 500MW Fully Automatic solar photovoltaic (SPV) Module Manufacturing line (On Turnkey Basis) at ITI Limited, NAINI, Prayagraj.
Estimated Tender Cost (in Cr)	65.00
Tender Document Cost	Rs. 20000/- To be paid through online modes i.e. Internet Payment Gateway, Net Banking, etc. in ITI's Bank account.
Earnest Money Deposit	Bidder must submit EMD @2% of estimated tender value along with the bid documents. The EMD is to be paid through Internet Payment Gateway (IPG) or Demand Draft or Bank Guarantee from any Nationalized/ Scheduled Commercial Bank.

ITI Ltd reserves the right to reject the whole or part of any or all bids received, without assigning any reason.

**Purchase Officer (Enquiry Cell)
IMM Dept, ITI Limited, Mirzapur Road,
Naini Unit, Naini, Prayagraj-211010**

TENDERING PROCEDURE

Bid shall be submitted On-line. Interested parties may view and download the document containing the detailed terms & conditions from the website www.eprocure.gov.in; <https://itilimited.ewizard.in>; <http://www.itiltdindia.com>. The interested bidder shall address the Tender on ITI **ewizard portal**. Changes modification in the Tender enquiry will be intimated through above websites only. Bidder are therefore, requested to visit our website regularly to keep themselves updated.

Price Bid: -

- Price Bid format given with Tender shall be submitted after filling all relevant information like basic prices, taxes & duties. The Price bid should be strictly as per the format available with the Tender failing which the offer is liable for rejection (blank or changing format of price sheet will not be accepted by system).
- Price bid (as per given format) evaluated separately for each part.

Note: The bid shall comprise of technical bid and commercial Bid. The detailed scope of work, terms and conditions etc. are available with the Bid documents.

Earnest Money Deposit (EMD)

Bidder must submit EMD @2% of estimated tender value along with the bid documents. The EMD is to be paid through Internet Payment Gateway (IPG) or Demand Draft or Bank Guarantee from any Nationalized/ Scheduled Commercial Bank. The BG validity should be 120 days from the tender submission last date.

The details of ITI's bank account for EMD & Processing Fee amount are as below:

- Beneficiary Name : ITI Limited, Naini
- Account Number/IBAN : 43069550659
- IFSC Code : SBIN0003486
- Beneficiary Bank Name : State Bank of India
- Beneficiary Bank Address : ITI Complex, Naini, Mirzapur Road,
Naini, Prayagraj – 211010 (UP) INDIA

Exemption from submission of EMD: No bidder is exempted to submit EMD amount.

Performance Bank Guarantee (PBG)/Security Deposit

1. The successful bidder who will be selected, shall give a Performance Security of 5% of the order value issued LOI (letter of intimation) for a period of 01 Years & 03 Months or till the date of successful installation & commissioning, whichever is earlier (For Part A/B & C). The Performance Bank Guarantee (PBG)/Security Deposit is to be paid through Bank Guarantee or from any Nationalized/ Scheduled Commercial Bank.
2. The successful bidder who will be selected, shall give a Performance Security of 10% of the order value for a period as detailed below:-

1. Applicable for Part A/B: - 05 Years & 03 Month from the date of successful installation & commissioning against the warranty of 5 years.

2. Applicable for Part C: - 02 Years & 03 Month from the date of successful installation & commissioning against the warranty of 2 years. The Performance Bank Guarantee (PBG)/Security Deposit is to be paid through Bank Guarantee or from any Nationalized/Scheduled Commercial Bank.

ELIGIBILITY CONDITIONS

Bidder shall fulfill following Minimum Eligibility Conditions: -

1. The Bidder should be either a body incorporated in India under the Companies Act, 1956 or Companies Act, 2013 including any amendment thereto and engaged in the business of Solar Power/Renewable/Electrical Works.

A copy of certificate of incorporation should be furnished along with the bid in support of above.

OR

The Bidder should be either a body incorporated in India under the Limited Liability Partnership Act, 2008: and engaged in the business of Solar Power/Renewable Energy/Electrical works.

A copy of certificate of incorporation should be furnished along with the bid in support of above.

OR

The Bidder should be a firm registered under Partnership Act, 1932 in India and engaged in the business of Solar Power/Renewable Energy/Electrical works.

A copy of certificate of incorporation should be furnished along with the bid in support of above.

2. OEM should have registered/subsidiary office & authorized service Centre in INDIA.
3. Bidders are required to visit ITI Limited, Naini premises to inspect the location for the 500 MW SPV Module Manufacturing Line. Bidders who submit their quotations without conducting the site visit will be disqualified during the technical compliance evaluation of the tender.

4. **Land Border Clause for Tender Participation: -**

Bidders or entities registered in countries sharing a land border with INDIA are required to meet additional eligibility criteria. Such bidders must submit a certificate of approval as attached in annexure- I from the relevant authority in INDIA to participate in this tender.

5. **Preference to Make In India products (For bids < 200 Crore):** Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/ Products. The minimum local content to qualify as a Class 1 & 2 local supplier is Minimum 50% and 20% respectively. If the bidder wants to avail the Purchase preference, the bidder must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted. In case the bid value is more than Rs 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or a chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in -India) order 2017 dated 04.06.2020.

Experience

Experience in successfully completing similar works in **INDIA** during the last 5 years, ending on the last day of the month prior to the one in which applications are invited, should be one of the following: -

- Three similar completed works of capacity not less than or equal to 200MW.

or

- Two similar completed works of capacity not less than or equal to 250MW.

or

- One similar completed works of capacity not less than or equal to 400MW.

Similar Works refers to having supplied, installed, and commissioned a Solar Manufacturing line of the above-mentioned capacity.

(A copy of Work orders/PO and certificates indicating its successful execution must be enclosed)

Overall Average Annual Turnover

1. OEM/ Subsidiary office should have Positive (+ve) Net worth at the close of the preceding financial year. (Auditor's certificate shall be submitted for the same).
2. OEM/ Subsidiary office should have Minimum Average Annual Turnover (MAAT) of **Rs. 20.0 Cr.** in last 3 financial years.

(The bidder should submit Audited Financial Statement for last 3 years to this effect. Additionally, Solvency Certificate from Nationalized bank is required.)
Turnover of Group of company will not be considered for evaluation (A summarized sheet of average turnover, certified by registered CA should be compulsorily enclosed).

3. The Bidder should have valid GSTIN & PAN registration certificate. A copy of which should be enclosed.

Note: Bidder will have to submit an undertaking on its letter head issued by the CA/Managing Director/Director of the company that it is financially meeting the Eligibility criteria as mentioned as above.

EVALUATION CRITERIA

1. BID EVALUATION:

The evaluation process comprises the following four steps:

Step I: Responsiveness check of Techno Commercial Bid

Step II: Evaluation of Price Bid separately

1.1 RESPONSIVENESS CHECK OF TECHNO-COMMERCIAL BID

The Techno Commercial Bid submitted by Bidders shall be scrutinized to establish responsiveness to the requirements laid down in the NIT.

Any of the following may cause the Bid to be considered “Non-responsive”, at the sole discretion of ITI:

- a. Bids that are incomplete, i.e. not accompanied by any of the applicable formats inter alia covering letter, power of attorney supported by a board resolution, Bid Security etc.;
- b. Bid not signed by authorized signatory and /or stamped in the manner indicated in this NIT;
- c. Material inconsistencies in the information /documents submitted by the Bidder, affecting the Eligibility Criteria;
- d. Information not submitted in the formats specified in this NIT;
- e. Bid being conditional in nature;
- f. Bid not received by the Bid Deadline;
- g. Bid having Conflict of Interest;
- h. Bidder delaying in submission of additional information or clarifications sought by ITI as applicable;
- i. Bidder makes any misrepresentation.

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

1.2 PRELIMINARY EXAMINATION

1.2.1 ITI will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and stamped and whether the Bids are otherwise in order.

1.2.2 If there is a discrepancy between words and figures, the amount written in words will prevail.

1.3 EVALUATION OF PRICE BID

1.4.1 Price Bid of the Qualified Bidders shall be opened and evaluated separately (Part-A, Part-B & Part-C). Any Bid not meeting any of the requirements of this NIT may cause the Bid to be considered “Non-responsive” at the sole decision of the ITI.

1.4.2 Price bids shall be evaluated on DAP ITI Naini basis.

Technical Requirements (PART-A)			Bidder Remark
<p>Scope of the work: The scope of this tender is setting up of 500 MW Fully-Automatic SPV module manufacturing line (On turnkey basis) including supply, installation and commissioning, process optimization and warranty for minimum of 5 years. The scope is including the layout design and required training for running and maintenance of the manufacturing line.</p>			
S. No.	M/C Description	Required Specifications	
1	Automatic Glass Loading Machine	<ul style="list-style-type: none"> • Fully automatic glass loading unit equipped with robotics (6-Axis) to pick up glass from pallets of various sizes and dimensions and place it onto the transport system. • Separate bin provided for storing the protective paper removed by the robot. • Capacity to accommodate a minimum of 2 pallets of glass for continuous operation. • Adjustable speed control for the robot. • Remote assistance facility available. • The robot should be capable of handling (picking up/dropping) a minimum of 125 glass pieces per hour. • The machine is designed to smoothly handle glass sizes of up to a maximum of 2500 mm x 1440 mm. 	
2	Inline EVA Cutting & Laying Machine	<ul style="list-style-type: none"> • Automatic cutting and laying of EVA over the glass. • The speed and all cutting measurements should be adjustable via the touch-screen interface. • Automatic piece counter included. • Remote assistance facility available. • Maximum EVA roll diameter: 450 mm or more (larger sizes are preferred). • Module orientation: Short/Long side leading. • The machine should be capable of handling (cutting and laying) a minimum of 125 EVA pieces per hour. • The machine is designed to smoothly handle EVA sizes of up to a maximum of 2520 mm x 1460 mm. 	
3	Buffer	<ul style="list-style-type: none"> • Capacity to store up to 100 laminates. • Equipped with an automatic piece counter. • Ensures smooth movement of laminates/modules. • Module orientation: Short/Long side leading. • Remote assistance facility available. <p>Note: A buffer should be incorporated at the necessary process step to enable non-stop operation.</p>	

4	Tabber Stringer	• Throughput : Cummulative 18000 Half Cut Cells/ Hr	
		• Automatic robot for accurate cell pickup and placement.	
		• Capable of processing very thin PV solar cells (≥ 0.110 mm), such as mono, poly, bifacial, PERC, HJT, and other high-efficiency solar cells, without mechanical and thermal stress.	
		• Cell compatibility: 182 - 230 mm	
		• Cell Thickness: 110 μ m-300 μ m	
		• Breakage Rate: < 0.2%	
		• Busbar compatibility: 9 - 22 BB or more	
		• Stringer Head required along with machine: 10BB ,16 BB & 20 BB	
		• Infrared soldering technology with high soldering quality.	
		• High precision alignment performed both optically and mechanically.	
		• High-resolution cameras for alignment, broken cell detection, visual inspection of microcracks and edge chips before soldering (reputed make).	
		• Half-cell and one-third cell compatibility.	
		• In-built laser unit or separate machine for solar cell scribing and separation, with a cumulative capacity of 18000 Half Cut Cells/Hour.	
		• Ribbon Size Capability: Width - 0.3mm to 1.1mm	
		• Capability to handle round wire and flat ribbon.	
		• Maximum String Length: 2500mm.	
		• Adjustable gap between cell to cell and string to string: ≥ 0.2 mm.	
		• Number of solar cells per string and other recipe parameters adjustable via touch-screen.	
		• Automatic loading of the cell basket.	
		• Automatic stretching and fluxing of the ribbon before soldering.	
		• Automatic spray fluxing on the ribbon.	
		• Provision for removing thermal stress on the cell.	
		• Adjustable tab and solder length.	
		• Touch screen with embedded PC.	
		• Remote assistance facility.	
		• Quick ribbon changeover.	
		• Emergency stop during human intervention.	
• Capability to check all manufactured string before layup using AI based software.			

5	Layup Station	• Automatic pick up of the strings using ROBOT (6-Axis).	
		• Throughput of layup station shall match or exceed tabber-stringer & to be integrated with the Tabber-Stringer.	
		• Vision system with camera for precision alignment & positioning of cell strings on glass.	
		• Clockwise / anticlockwise turning of the strings settable in recipe.	
		• Placing of the strings on the glass with glass Centring.	
		• Touch screen for setting parameters (number of strings per module, string spacing, orientation of each string etc.	
		• Seamless movement/transport of laminates assembly through conveyor transport system with adequate space	
		• Emergency stop during human intervention.	
		• Remote assistance facility	
		• Provision of Tray for Reject Strings	
• The machine should be capable of handling a minimum of 125 SPV Module per hour.			
6	Automatic Cell String Taping machine	• Capable to handle tape thickness 50~130µm	
		• Four Tape Head supply with the Machine	
		• Taping Attaching Accuracy: ±2mm	
		• Tape length:18mm;Tape width 5/8/10mm (Standard configuration is one set of taping length)	
		• The equipment features an Industrial HMI for user interaction, allowing operators to monitor and control the machine. • The machine is equipped with a system to detect when the tape roll is empty	
7	Automatic Bussing	• Automatic Soldering of the interconnection between the strings.	
		• Soldering Technology: Induction (Contactless Soldering) without Flux.	
		• Ribbon processing: L bend, U bend, Overlapped Ribbon, Vertical Ribbon.	
		• Cell compatibility: 182 - 230 mm	
		• Busbar compatibility: 9 - 22 BB or more	
		• Should be compatible for Glass-Glass & Glass-Backsheet module	
		• Should be compatible for Flat & Round Ribbon	
		• Suitable for Twin peak module with JB at the Centre	
		• Capable fo processing Modules designed as per IEC 61730 (Latest Version)	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
• The machine should be capable of handling a minimum of 125 SPV Module per hour.			

8	Inline EVA / Backsheet Cutting, Punching & Laying Machine	• Automatic Cut, Punch / Incision, Pick & Place of EVA / Backsheet over the Strings.	
		• The speed and all the measurements for cutting should be adjustable from the touch-screen.	
		• Automatic piece counter.	
		• Module Orientation: Short/Long Side Leading.	
		• Remote assistance facility.	
9	Automatic Bar Code M/C	• Maximum EVA / Backsheet Roll diameter: 450 mm or more. Bigger size is preferred	
		• Automatic piece counter.(Should be able to print Barcode,Make & model no. of manufacturer & logo)	
10	Inline Automatic Ind Glass Loading Machine (For Glass to Glass Module)	• Fully automatic glass loading unit equipped with robotics (6-Axis) to pick up glass from pallets of various sizes and dimensions and place it onto the transport system.	
		• Separate bin provided for storing the protective paper removed by the robot.	
		• Capacity to accommodate a minimum of 2 pallets of glass for continuous operation.	
		• Adjustable speed control for the robot.	
		• Remote assistance facility available.	
		• The robot should be capable of handling (picking up/dropping) a minimum of 125 glass pieces per hour.	
11	Automated Optical Inspection (AOI)	• The machine is designed to smoothly handle glass sizes of up to a maximum of 2500 mm x 1440 mm.	
		• High Resolution camera system for Capturing module image.	
		• No. of Cameras (16MP): 02 (Minimum)	
		• Capable to analyse all visual defects such as Ribbon Alignment, Major Cell breakage, String Alignment, Foreign particle, Cell to Cell Gap, String to String Gap, Label & Barcode presence/Misalignment etc.	
		• Motorised Loading & Unloading with Auto Contact for testing.	
		• Software with Latest PC Configuration.	
		• Large size monitor (preferably ≥ 43inch) to be provided.	
		• Module Orientation: Short/Long Side Leading.	
• Remote assistance facility.			

12	Electroluminescence (EL) Tester	<ul style="list-style-type: none"> • Capability to detect Microcracks, Contamination, Sintering Defect, Defects of Solar cell material (Debris, Cracked, Broken Gate, pollution), Defects from the Welding Process (Weld, De-Solder, Broken Fingers), Mix different levels Cells sorted wrongly with AI based facility. 	
		<ul style="list-style-type: none"> • Minimum 6 Optimized NIR EL camera of 4 Mega Pixel. 	
		<ul style="list-style-type: none"> • Software and Graphics: PC based software. Operator controlled user friendly image processing software to store and reload images user friendly automation containing unit. Provision for rejecting not good modules. All the software required should be provided in CD and image form. 	
		<ul style="list-style-type: none"> • Dark current I-V test should be in-built in the machine 	
		<ul style="list-style-type: none"> • Computer: Industrial PC with keyboard/mouse interface on PC, Latest version with ≥ 43 inch flat screen monitor for clear vision with high performance graphic cards. 	
		<ul style="list-style-type: none"> • Data base for data storage. 	
		<ul style="list-style-type: none"> • Motorised Loading & Unloading with Auto Contact for testing. 	
		<ul style="list-style-type: none"> • Module Orientation: Long Side Leading. 	
		<ul style="list-style-type: none"> • Auto Detection software. 	
		<ul style="list-style-type: none"> • Remote assistance facility. 	
13	Automatic G2G Panel Edge Sealing Tape Machine	<ul style="list-style-type: none"> • The machine should be capable of handling a minimum of 125 SPV Module per hour. 	
		<ul style="list-style-type: none"> • Compatible with different glass thickness (glass thickness 1.8-3.2mm). • Easy Changeover if the Glass Thickness Change. 	
		<ul style="list-style-type: none"> • The equipment features an Industrial HMI for user interaction, allowing operators to monitor and control the machine. • The machine is equipped with a system to detect when the tape roll is empty. 	
		<ul style="list-style-type: none"> • Machine compatible with Standard size of Edge Sealing tape. 	

14	Fully Automatic Laminator with Loading belt & Unloading Belt	• Suitable for Glass-Back sheet, Glass-Glass modules using EVA / POE.	
		• Automatic laminator capable of laminate 125 Nos SPV (SPV Module Size: 2500 mm X 1440 mm) Module per hour.	
		• Module Orientation: Short/Long Side Leading.	
		• Heating System: Suitable Electrical heating system in order to maintain Temperature Uniformity.	
		• Heating System supply should be separate from control panel and pump supply.	
		• Lamination platen operating temperature: Up to 180 °C.	
		• The temperatures in each zone should be independent in order to have uniform gel content over the complete surface of the module.	
		• Automatic release sheet made of Teflon or higher grade material on both module sides during lamination.	
		• Additional Dry Back-up Pump to be supplied for non-stop operation.	
		• Equipped with Safety alarm system while loading / unloading and automatic emergency stop during human intervention.	
		• User friendly software with touch screen operation for setting of process parameter like temperature, time and vacuum.	
		• Remote Assistance Facility.	
15	Automatic G2G Panel Edge Sealing Tape Removing machine	• Compatible with different glass thickness (glass thickness 1.8-3.2mm),	
		• Easy Changeover if the Glass Thickness Change.	
16	Inline Auto Trimming	• The equipment features an Industrial HMI for user interaction, allowing operators to monitor and control the machine.	
		• Machine compatible with Standard size of Edge Sealing tape.	
		• Module Orientation: Short/Long Side Leading	
		• To Trim simultaneously the 4 edges of the panel.	
		• Suitable for Glass-Backsheet, Glass-Glass modules.	
17	Framing Station	• Provision for collecting waste material after module trimming.	
		• Remote assistance facility	
		• The machine should be capable of handling a minimum of 125 SPV Module per hour.	
		Framing Station should consist of Fully Automatic Sealant Dispensing Station with Automatic Framing Machine.	
		• Suitable for Glass-Back sheet, Glass-Glass modules	
		• Automatic Robot (6-Axis) should pick the frames from the Silicon dispensing machine and place it on the framing machine.	
• Buffer for 30 sets of Frames to be incorporated in the silicon dispensing machine			
• Module Orientation: Short/Long Side Leading			
• Remote assistance facility			
• The machine should be capable of handling a minimum of 125 SPV Module per hour.			

18	Junction Box Dispensing, Placing & Soldering Station	• Uniform dispensing to the Junction Box.	
		• Dispensing System should be Programmable for different J-Box Size & Shape.	
		• Placing System should be Programmable for different J-Box Size & Shape.	
		• Soldering System should be Programmable for different J-Box Size & Shape.	
		• Remote assistance facility	
19	Inline Potting System	• The machine should be capable of Dispensing, Placing & Soldering a minimum of 125 Junction box per hour.	
		• Uniform dispensing of Bicomponent to the Junction Box (Regular & Split)	
		• Dispensing System should be Programmable for different J-Box Size & Shape	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
20	Curing Station	• The machine should be capable of dispensing a minimum of 375 Junction box per hour.	
		• Automatic Centering, Loading & Unloading of the Modules.	
		• To provide minimum 4 Hrs of Curing time which can be adjusted via control system.	
		• Module Orientation: Short/Long Side Leading.	
		• Remote assistance facility.	
21	Grinding Machine	• To grind the edges of the Aluminium frame after curing of the modules.	
		• Provision for collecting waste material after module Grinding	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	

22	Sun Simulator	• Light Source: LED	
		• Class A+A+A+ or Better.	
		• Suitable for module with cells: Mono, Poly, PERC, HIT, Bifacial, Back Contact and Thin Film.	
		• Range of intensity : 200 W/m ² – 1200W/m ²	
		• Provision shall be made for measurement of power of module at different level of intensity range.	
		• Provision shall also be made for measurement of power of module at different level of temperature range.	
		• Pyrometer for irradiance measurements.	
		• Temperature Sensors to measure the module and the environment temperature.	
		• Illuminated area: 2800 mm x 1600 mm	
		• Max. Module size: 2500 mm X 1440 mm.	
		• LED source life time more than 50 Million pulses.	
		• Thermal Printer for bar code and back label printing to be provided	
		• Database for data storage.	
		• Automatic load/unloading system with Auto contact.	
		• Bidder shall provide Spectral Distribution, Range wise spectral mismatch as per IEC60904-9 ed.3 and Temporal Spectral Stability Test Certificate from ISO/IEC 17025 accredited lab along with bid.	
		• Module Orientation: Short/Long Side Leading	
• Remote assistance facility			
• The machine should be capable of handling a minimum of 125 SPV Module per hour.			

23	Electroluminescence (EL) Tester	<ul style="list-style-type: none"> • Capability to detect Microcracks, Contamination, Sintering Defect, Defects of Solar cell material (Debris, Cracked, Broken Gate, pollution), Defects from the Welding Process (Weld, De-Solder, Broken Fingers), Mix different levels Cells sorted wrongly with AI based facility. 	
		<ul style="list-style-type: none"> • Minimum 6 Optimized NIR EL camera of 4 Mega Pixel. 	
		<ul style="list-style-type: none"> • Software and Graphics: PC based software. Operator controlled user friendly image processing software to store and reload images user friendly automation containing unit. Provision for rejecting not good modules. All the software required should be provided in CD and image form. 	
		<ul style="list-style-type: none"> • Dark current I-V test should be in-built in the machine 	
		<ul style="list-style-type: none"> • Computer: Industrial PC with keyboard/mouse interface on PC, Latest version with ≥ 43 inch flat screen monitor for clear vision with high performance graphic cards. 	
		<ul style="list-style-type: none"> • Data base for data storage. 	
		<ul style="list-style-type: none"> • Motorised Loading & Unloading with Auto Contact for testing. 	
		<ul style="list-style-type: none"> • Module Orientation: Long Side Leading. 	
		<ul style="list-style-type: none"> • Auto Detection software. 	
		<ul style="list-style-type: none"> • Remote assistance facility. 	
24	Hi-Pot Tester	<ul style="list-style-type: none"> • The machine should be capable of handling a minimum of 125 SPV Module per hour. 	
		<ul style="list-style-type: none"> • Complies with IEC 61730 standards (Latest Version) 	
		<ul style="list-style-type: none"> • IR : upto 1500V 	
		<ul style="list-style-type: none"> • Motorised Loading & Unloading with Auto Contact for testing 	
25	Labelling Machine	<ul style="list-style-type: none"> • Module Orientation: Short/Long Side Leading 	
		<ul style="list-style-type: none"> • Remote assistance facility 	
		<ul style="list-style-type: none"> • To print Back Label as per the Sun Simulator data and paste it automatically on the back side of the module 	
		<ul style="list-style-type: none"> • Should be able to support different label sizes 	
26	Module Sorter	<ul style="list-style-type: none"> • The machine should be capable of labelling 125 Nos Back Label per hour. 	
		<ul style="list-style-type: none"> • Fully automatic Module Sorter Machine With 6 Axis Robotic System. 	
		<ul style="list-style-type: none"> • Separation of modules based on the sun simulator Data & classification. 	
		<ul style="list-style-type: none"> • To segregate the modules in 5 different bins. 	
		<ul style="list-style-type: none"> • Adjustable Speed control. 	
		<ul style="list-style-type: none"> • Remote assistance facility. 	

27	Strip Cutting machine	• Automatic Cut of the Strip with settable dimension	
		• The speed and all the measurements for cutting should be adjustable from the touch-screen	
		• Automatic piece counter	
		• Remote assistance facility	
28	90 Deg Visual Inspection (Minimum 2 nos.)	• To inspect the modules for any visual defects such as cracks, Ribbon Misalignment, Heat Bubbles, Air Bubbles, EVA Shrinkage etc.	
		• Equipped with Pass / Reject Buttons for sorting.	
		• Module Orientation: Short/Long Side Leading	
29	Centering Conveyors	• Conveyors to be provided for centering the modules at required position such as before EL, Sun Simulator etc.	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
		• Conveyors to be provided at required position with support for both Standard as well as Twin Peak modules.	
		• Capability to rotate the module on the conveyors for easy access, in case of reworking	
		• Module Orientation: Short/Long Side Leading	
		• Should capable of handling Glass to Backsheet & Glass to Glass Module.	
• Remote assistance facility			

30	Transport system with Direction Changer	<ul style="list-style-type: none"> • Transport system with Direction changer to be incorporated in the line at all critical position for seamless movement of the module • Module Orientation: Short/Long Side Leading • Remote assistance facility 	
31	Solar cell scribing and Separating machine	<ul style="list-style-type: none"> • Total Speed of Solar cell scribing Machine Separating machine >20000 Half Cells/Hour • Automatic separation of Scribed solar cells • Cell Size: 166 -230 mm • Scribing Accuracy: ± 0.075 mm • Scribing width : < 0.05 mm • Cutting thickness: 0.15-0.2mm • Defect Rate: 0.03% • Grooving Depth: 20-50% of cell thickness (adjustable) • Dimension of the cut solar cells to be defined by the customer for the preliminary setting of the equipment 	
32	Laptop for remote access	<ul style="list-style-type: none"> • 5 Nos.(As per attached Technical Specification) 	
33	Static Chair	<ul style="list-style-type: none"> • 10 nos. (As per attached Technical Specification) 	
34	Printer	<ul style="list-style-type: none"> • 5 Nos. Mono (As per attached Technical Specification) • 2 Nos. Color (As per attached Technical Specification) 	
35	Soldering Station	<ul style="list-style-type: none"> • 06 nos. for manual string repair 	
36	LIST OF TROLLEYS & CARTS	<ul style="list-style-type: none"> • Glass Handling trollys (capacity minimum 200 glasses)-2 Nos. • Cell Handling trollys/Carts- 2 Nos. • EVA and Back sheet handling cart- 6 Nos. • Aluminum Frame Transfer Trolley- 2 Nos. • Corner Block Transfer Trolley- 1 No. • Framed Module transfer trolley/cart- 04 Nos. 	

Technical Requirements (Part-B)			Bidder Remark
Scope of the work: Setting up of phase-1 for 250 MW Fully-Automatic SPV module manufacturing line (On turnkey basis) which is upgradable up to 500MW including supply, installation, testing and commissioning, process optimization and warranty for minimum 5 years. The scope is including the layout design and required training for running and maintenance of the line.			
S. No.	M/C Description	Required Specifications	
1	Automatic Glass Loading Machine	<ul style="list-style-type: none"> • Fully automatic glass loading unit equipped with robotics (6-Axis) to pick up glass from pallets of various sizes and dimensions and place it onto the transport system. • Separate bin provided for storing the protective paper removed by the robot. • Capacity to accommodate a minimum of 2 pallets of glass for continuous operation. • Adjustable speed control for the robot. • Remote assistance facility available. • The robot should be capable of handling (picking up/dropping) a minimum of 72 glass pieces per hour. • The machine is designed to smoothly handle glass sizes of up to a maximum of 2500 mm x 1440 mm. 	
2	Inline EVA Cutting & Laying Machine	<ul style="list-style-type: none"> • Automatic cutting and laying of EVA over the glass. • The speed and all cutting measurements should be adjustable via the touch-screen interface. • Automatic piece counter included. • Remote assistance facility available. • Maximum EVA roll diameter: 450 mm or more (larger sizes are preferred). • Module orientation: Short/Long side leading. • The machine should be capable of handling (cutting and laying) a minimum of 72 EVA pieces per hour. • The machine is designed to smoothly handle EVA sizes of up to a maximum of 2520 mm x 1460 mm. 	
3	Buffer	<ul style="list-style-type: none"> • Capacity to store up to 100 laminates. • Equipped with an automatic piece counter. • Ensures smooth movement of laminates/modules. • Module orientation: Short/Long side leading. • Remote assistance facility available. <p>Note: A buffer should be incorporated at the necessary process step to enable non-stop operation.</p>	

4	Tabber Stringer	<ul style="list-style-type: none"> • Throughput : Cumulative 10500 Half Cut Cells/ Hr • Automatic robot for accurate cell pickup and placement. 	
		<ul style="list-style-type: none"> • Capable of processing very thin PV solar cells (≥ 0.110 mm), such as mono, poly, bifacial, PERC, HJT, and other high-efficiency solar cells, without mechanical and thermal stress. 	
		<ul style="list-style-type: none"> • Cell compatibility: 182 - 230 mm 	
		<ul style="list-style-type: none"> • Cell Thickness: 110μm-300μm 	
		<ul style="list-style-type: none"> • Breakage Rate: < 0.2% 	
		<ul style="list-style-type: none"> • Busbar compatibility: 9 - 22 BB or more 	
		<ul style="list-style-type: none"> • Stringer Head required along with machine: 10BB ,16 BB & 20 BB 	
		<ul style="list-style-type: none"> • Infrared soldering technology with high soldering quality. 	
		<ul style="list-style-type: none"> • High precision alignment performed both optically and mechanically. 	
		<ul style="list-style-type: none"> • High-resolution cameras for alignment, broken cell detection, visual inspection of microcracks and edge chips before soldering (reputed make). 	
		<ul style="list-style-type: none"> • Half-cell and one-third cell compatibility. 	
		<ul style="list-style-type: none"> • In-built laser unit or separate machine for solar cell scribing and separation, with a cumulative capacity of 10500 Half Cut Cells/Hour. 	
		<ul style="list-style-type: none"> • Ribbon Size Capability: Width - 0.3mm to 1.1mm 	
		<ul style="list-style-type: none"> • Capability to handle round wire and flat ribbon. 	
		<ul style="list-style-type: none"> • Maximum String Length: 2500mm. 	
		<ul style="list-style-type: none"> • Adjustable gap between cell to cell and string to string: ≥ 0.2 mm. 	
		<ul style="list-style-type: none"> • Number of solar cells per string and other recipe parameters adjustable via touch-screen. 	
		<ul style="list-style-type: none"> • Automatic loading of the cell basket. 	
		<ul style="list-style-type: none"> • Automatic stretching and fluxing of the ribbon before soldering. 	
		<ul style="list-style-type: none"> • Automatic spray fluxing on the ribbon. 	
		<ul style="list-style-type: none"> • Provision for removing thermal stress on the cell. 	
		<ul style="list-style-type: none"> • Adjustable tab and solder length. 	
		<ul style="list-style-type: none"> • Touch screen with embedded PC. 	
		<ul style="list-style-type: none"> • Remote assistance facility. 	
		<ul style="list-style-type: none"> • Quick ribbon changeover. 	
		<ul style="list-style-type: none"> • Emergency stop during human intervention. 	
		<ul style="list-style-type: none"> • Capability to check all manufactured string before layup using AI based software. 	

5	Layup Station	<ul style="list-style-type: none"> • Automatic pick up of the strings using ROBOT (6-Axis). • Throughput of layup station shall match or exceed tabber-stringer & to be integrated with the Tabber-Stringer. 			
		<ul style="list-style-type: none"> • Vision system with camera for precision alignment & positioning of cell strings on glass. 			
		<ul style="list-style-type: none"> • Clockwise / anticlockwise turning of the strings settable in recipe. 			
		<ul style="list-style-type: none"> • Placing of the strings on the glass with glass Centring. 			
		<ul style="list-style-type: none"> • Touch screen for setting parameters (number of strings per module, string spacing, orientation of each string etc. 			
		<ul style="list-style-type: none"> • Seamless movement/transport of laminates assembly through conveyor transport system with adequate space 			
		<ul style="list-style-type: none"> • Emergency stop during human intervention. 			
		<ul style="list-style-type: none"> • Remote assistance facility 			
		<ul style="list-style-type: none"> • Provision of Tray for Reject Strings 			
		<ul style="list-style-type: none"> • The machine should be capable of handling a minimum of 72 SPV Module per hour. 			
6	Automatic Cell String Taping machine	<ul style="list-style-type: none"> • Capable to handle tape thickness 50~130µm • Four Tape Head supply with the Machine • Taping Attaching Accuracy: ±2mm • Tape length:18mm;Tape width 5/8/10mm (Standard configuration is one set of taping length) • The equipment features an Industrial HMI for user interaction, allowing operators to monitor and control the machine. • The machine is equipped with a system to detect when the tape roll is empty 			
		<ul style="list-style-type: none"> • Automatic Soldering of the interconnection between the strings. 			
7	Automatic Bussing	<ul style="list-style-type: none"> • Soldering Technology: Induction (Contactless Soldering) without Flux. • Ribbon processing: L bend, U bend, Overlapped Ribbon, Vertical Ribbon. • Cell compatibility: 182 - 230 mm • Busbar compatibility: 9 - 22 BB or more • Should be compatible for Glass-Glass & Glass-Backsheet module • Should be compatible for Flat & Round Ribbon • Suitable for Twin peak module with JB at the Centre • Capable fo processing Modules designed as per IEC 61730 (Latest Version) • Module Orientation: Short/Long Side Leading • Remote assistance facility 			
		<ul style="list-style-type: none"> • The machine should be capable of handling a minimum of 72 SPV Module per hour. 			
		<ul style="list-style-type: none"> • Automatic Cut, Punch / Incision, Pick & Place of EVA / Backsheet over the Strings. 			
		<ul style="list-style-type: none"> • The speed and all the measurements for cutting should be adjustable from the touch-screen. 			
		<ul style="list-style-type: none"> • Automatic piece counter. 			
		<ul style="list-style-type: none"> • Module Orientation: Short/Long Side Leading. 			
		<ul style="list-style-type: none"> • Remote assistance facility. 			
		<ul style="list-style-type: none"> • Maximum EVA / Backsheet Roll diameter: 450 mm or more. Bigger size is preferred 			
		8	Inline EVA / Backsheet Cutting, Punching & Laying Machine	<ul style="list-style-type: none"> • The speed and all the measurements for cutting should be adjustable from the touch-screen. 	
				<ul style="list-style-type: none"> • Automatic piece counter. 	

9	Automatic Bar Code M/C	<ul style="list-style-type: none"> • Automatic piece counter.(Should be able to print Barcode,Make & model no. of manufacturer & logo) 	
10	Inline Automatic Ind Glass Loading Machine (For Glass to Glass Module)	<ul style="list-style-type: none"> • Fully automatic glass loading unit equipped with robotics (6-Axis) to pick up glass from pallets of various sizes and dimensions and place it onto the transport system. • Separate bin provided for storing the protective paper removed by the robot. • Capacity to accommodate a minimum of 2 pallets of glass for continuous operation. • Adjustable speed control for the robot. • Remote assistance facility available. • The robot should be capable of handling (picking up/dropping) a minimum of 72 glass pieces per hour. • The machine is designed to smoothly handle glass sizes of up to a maximum of 2500 mm x 1440 mm. 	
11	Automated Optical Inspection (AOI)	<ul style="list-style-type: none"> • High Resolution camera system for Capturing module image. • No. of Cameras (16MP): 02 (Minimum) • Capable to analyse all visual defects such as Ribbon Alignment, Major Cell breakage, String Alignment, Foreign particle, Cell to Cell Gap, String to String Gap, Label & Barcode presence/Misalignment etc. • Motorised Loading & Unloading with Auto Contact for testing. • Software with Latest PC Configuration. • Large size monitor (preferably ≥ 43inch) to be provided. • Module Orientation: Short/Long Side Leading. • Remote assistance facility. 	
12	Electroluminescence (EL) Tester	<ul style="list-style-type: none"> • Capability to detect Microcracks, Contamination, Sintering Defect, Defects of Solar cell material (Debris, Cracked, Broken Gate, pollution), Defects from the Welding Process (Weld, De-Solder, Broken Fingers), Mix different levels Cells sorted wrongly with AI based facility. • Minimum 6 Optimized NIR EL camera of 4 Mega Pixel. • Software and Graphics: PC based software. Operator controlled user friendly image processing software to store and reload images user friendly automation containing unit. Provision for rejecting not good modules. All the software required should be provided in CD and image form. • Dark current I-V test should be in-built in the machine • Computer: Industrial PC with keyboard/mouse interface on PC, Latest version with ≥ 43 inch flat screen monitor for clear vision with high performance graphic cards. • Data base for data storage. • Motorised Loading & Unloading with Auto Contact for testing. • Module Orientation: Long Side Leading. • Auto Detection software. • Remote assistance facility. • The machine should be capable of handling a minimum of 72 SPV Module per hour. 	

13	Automatic G2G Panel Edge Sealing Tape Machine	<ul style="list-style-type: none"> • Compatible with different glass thickness (glass thickness 1.8-3.2mm). • Easy Changeover if the Glass Thickness Change. • The equipment features an Industrial HMI for user interaction, allowing operators to monitor and control the machine. • The machine is equipped with a system to detect when the tape roll is empty. • Machine compatible with Standard size of Edge Sealing tape. 	
14	Fully Automatic Laminator with Loading belt & Unloading Belt	<ul style="list-style-type: none"> • Suitable for Glass-Back sheet, Glass-Glass modules using EVA / POE. • Automatic laminator capable of laminate 72 Nos SPV (SPV Module Size: 2500 mm X 1440 mm) Module per hour. • Module Orientation: Short/Long Side Leading. • Heating System: Suitable Electrical heating system in order to maintain Temperature Uniformity. • Heating System supply should be separate from control panel and pump supply. • Lamination platen operating temperature: Up to 180 °C. • The temperatures in each zone should be independent in order to have uniform gel content over the complete surface of the module. • Automatic release sheet made of Teflon or higher grade material on both module sides during lamination. • Additional Dry Back-up Pump to be supplied for non-stop operation. • Equipped with Safety alarm system while loading / unloading and automatic emergency stop during human intervention. • User friendly software with touch screen operation for setting of process parameter like temperature, time and vacuum. • Remote Assistance Facility. 	
15	Automatic G2G Panel Edge Sealing Tape Removing machine	<ul style="list-style-type: none"> • Compatible with different glass thickness (glass thickness 1.8-3.2mm), • Easy Changeover if the Glass Thickness Change. • The equipment features an Industrial HMI for user interaction, allowing operators to monitor and control the machine. • Machine compatible with Standard size of Edge Sealing tape. 	
16	Inline Auto Trimming	<ul style="list-style-type: none"> • Module Orientation: Short/Long Side Leading • To Trim simultaneously the 4 edges of the panel. • Suitable for Glass-Backsheet, Glass-Glass modules. • Provision for collecting waste material after module trimming. • Remote assistance facility • The machine should be capable of handling a minimum of 72 SPV Module per hour. 	
17	Framing Station	<p>Framing Station should consists of Fully Automatic Sealant Dispensing Station with Automatic Framing Machine.</p> <ul style="list-style-type: none"> • Suitable for Glass-Back sheet, Glass-Glass modules • Automatic Robot (6-Axis) should pick the frames from the Silicon dispensing machine and place it on the framing machine. • Buffer for 30 sets of Frames to be incorporated in the silicon dispensing machine • Module Orientation: Short/Long Side Leading • Remote assistance facility • The machine should be capable of handling a minimum of 72 SPV Module per hour. 	

18	Junction Box Dispensing, Placing & Soldering Station	• Uniform dispensing to the Junction Box.	
		• Dispensing System should be Programmable for different J-Box Size & Shape.	
		• Placing System should be Programmable for different J-Box Size & Shape.	
		• Soldering System should be Programmable for different J-Box Size & Shape.	
		• Remote assistance facility	
19	Inline Potting System	• The machine should be capable of Dispensing, Placing & Soldering a minimum of 72 Junction box per hour.	
		• Uniform dispensing of Bicomponent to the Junction Box (Regular & Split)	
		• Dispensing System should be Programmable for different J-Box Size & Shape	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
20	Curing Station	• The machine should be capable of dispensing a minimum of 216 Junction box per hour.	
		• Automatic Centering, Loading & Unloading of the Modules.	
		• To provide minimum 4 Hrs of Curing time which can be adjusted via control system.	
		• Module Orientation: Short/Long Side Leading.	
		• Remote assistance facility.	
21	Grinding Machine	• To grind the edges of the Aluminium frame after curing of the modules.	
		• Provision for collecting waste material after module Grinding	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
22	Sun Simulator	• Light Source: LED	
		• Class A+A+A+ or Better	
		• Suitable for module with cells: Mono, Poly, PERC, HIT, Bifacial, Back Contact and Thin Film.	
		• Range of intensity : 200 W/m ² – 1200W/m ²	
		• Provision shall be made for measurement of power of module at different level of intensity range.	
		• Provision shall also be made for measurement of power of module at different level of temperature range.	
		• Pyrometer for irradiance measurements.	
		• Temperature Sensors to measure the module and the environment temperature.	
		• Illuminated area: 2800 mm x 1600 mm	
		• Max. Module size: 2500 mm X 1440 mm.	
		• LED source life time more than 50 Million pulses.	
		• Thermal Printer for bar code and back label printing to be provided	
		• Database for data storage.	
		• Automatic load/unloading system with Auto contact.	
		• Bidder shall provide Spectral Distribution, Range wise spectral mismatch as per IEC60904-9 ed.3 and Temporal Spectral Stability Test Certificate from ISO/IEC 17025 accredited lab along with bid.	
		• Module Orientation: Short/Long Side Leading	
• Remote assistance facility			
• The machine should be capable of handling a minimum of 72 SPV Module per hour.			

23	Electroluminescence (EL) Tester	<ul style="list-style-type: none"> • Capability to detect Microcracks, Contamination, Sintering Defect, Defects of Solar cell material (Debris, Cracked, Broken Gate, pollution), Defects from the Welding Process (Weld, De-Solder, Broken Fingers), Mix different levels Cells sorted wrongly with AI based facility. 	
		<ul style="list-style-type: none"> • Minimum 6 Optimized NIR EL camera of 4 Mega Pixel. 	
		<ul style="list-style-type: none"> • Software and Graphics: PC based software. Operator controlled user friendly image processing software to store and reload images user friendly automation containing unit. Provision for rejecting not good modules. All the software required should be provided in CD and image form. 	
		<ul style="list-style-type: none"> • Dark current I-V test should be in-built in the machine 	
		<ul style="list-style-type: none"> • Computer: Industrial PC with keyboard/mouse interface on PC, Latest version with ≥ 43 inch flat screen monitor for clear vision with high performance graphic cards. 	
		<ul style="list-style-type: none"> • Data base for data storage. 	
		<ul style="list-style-type: none"> • Motorised Loading & Unloading with Auto Contact for testing. 	
		<ul style="list-style-type: none"> • Module Orientation: Long Side Leading. 	
		<ul style="list-style-type: none"> • Auto Detection software. 	
		<ul style="list-style-type: none"> • Remote assistance facility. 	
24	Hi-Pot Tester	<ul style="list-style-type: none"> • The machine should be capable of handling a minimum of 72 SPV Module per hour. 	
		<ul style="list-style-type: none"> • Complies with IEC 61730 standards (Latest Version) 	
		<ul style="list-style-type: none"> • IR : upto 1500V 	
		<ul style="list-style-type: none"> • Motorised Loading & Unloading with Auto Contact for testing 	
25	Labelling Machine	<ul style="list-style-type: none"> • Module Orientation: Short/Long Side Leading 	
		<ul style="list-style-type: none"> • Remote assistance facility 	
		<ul style="list-style-type: none"> • To print Back Label as per the Sun Simulator data and paste it automatically on the back side of the module 	
		<ul style="list-style-type: none"> • Should be able to support different label sizes 	
26	Module Sorter	<ul style="list-style-type: none"> • The machine should be capable of labelling 72 Nos Back Label per hour. 	
		<ul style="list-style-type: none"> • Fully automatic Module Sorter Machine With 6 Axis Robotic System. 	
		<ul style="list-style-type: none"> • Separation of modules based on the sun simulator Data & classification. 	
		<ul style="list-style-type: none"> • To segregate the modules in 5 different bins. 	
27	Strip Cutting machine	<ul style="list-style-type: none"> • Adjustable Speed control. 	
		<ul style="list-style-type: none"> • Remote assistance facility. 	
		<ul style="list-style-type: none"> • Automatic Cut of the Strip with settable dimension 	
		<ul style="list-style-type: none"> • The speed and all the measurements for cutting should be adjustable from the touch-screen 	
		<ul style="list-style-type: none"> • Automatic piece counter 	
		<ul style="list-style-type: none"> • Remote assistance facility 	

28	90 Deg Visual Inspection (Minimum 2 nos.)	<ul style="list-style-type: none"> To inspect the modules for any visual defects such as cracks, Ribbon Misalignment, Heat Bubbles, Air Bubbles, EVA Shrinkage etc. Equipped with Pass / Reject Buttons for sorting. Module Orientation: Short/Long Side Leading 	
29	Centering Conveyors	<ul style="list-style-type: none"> Conveyors to be provided for centering the modules at required position such as before EL, Sun Simulator etc. Module Orientation: Short/Long Side Leading Remote assistance facility Conveyors to be provided at required position with support for both Standard as well as Twin Peak modules. Capability to rotate the module on the conveyors for easy access, in case of reworking Module Orientation: Short/Long Side Leading Should capable of handling Glass to Backsheet & Glass to Glass Module. Remote assistance facility 	
30	Transport system with Direction Changer	<ul style="list-style-type: none"> Transport system with Direction changer to be incorporated in the line at all critical position for seamless movement of the module Module Orientation: Short/Long Side Leading Remote assistance facility 	
31	Solar cell scribing Machine Separating machine	<ul style="list-style-type: none"> Total Speed of Solar cell scribing Machine Separating machine ≥ 20000 Half Cut Cells/Hour Automatic separation of Scribed solar cells ≥ 8000 Cell Size: 166 -230 mm Scribing Accuracy: ± 0.075 mm Scribing width : < 0.05 mm Cutting thickness: 0.15-0.2mm Defect Rate: 0.03% Grooving Depth: 20-50% of cell thickness (adjustable) Dimension of the cut solar cells to be defined by the customer for the preliminary setting of the equipment 	
32	Laptop for remote access	<ul style="list-style-type: none"> 5 Nos.(As per attached Technical Specification) 	
33	Static Chair	<ul style="list-style-type: none"> 10 nos.(As per attached Technical Specification) 	
34	Printer	<ul style="list-style-type: none"> 5 Nos. Mono (As per attached Technical Specification) 2 Nos. Color (As per attached Technical Specification) 	
35	Soldering Station	<ul style="list-style-type: none"> 6 nos. for manual string repair 	
36	LIST OF TROLLEYS & CARTS	<ul style="list-style-type: none"> Glass Handling trollys (capacity minimum 200 glasses)-2 Nos. Cell Handling trollys/Carts- 2 Nos. EVA and Back sheet handling cart- 6 Nos. Aluminum Frame Transfer Trolley- 2 Nos. Corner Block Transfer Trolley- 1 No. Framed Module transfer trolley/cart- 04 Nos. 	

General Terms & Conditions for Part-A & Part-B:

1. Project description:

Part-A: Setting up of 500MW Fully Automatic Solar Photovoltaic (SPV) Module Manufacturing line (On Turnkey Basis) at ITI Limited, NAINI, Prayagraj, including supply, installation and commissioning, process optimization and warranty with minimum 5 years. The scope is including the layout design and required training for running and maintenance of the line.

Part-B: Setting up of 250MW Fully Automatic Solar Photovoltaic (SPV) Module Manufacturing line which is upgradable up to 500MW Line (On Turnkey Basis) at ITI Limited, NAINI, Prayagraj.

2. Scope of Work: The detailed scope of work includes the solar manufacturing line, which must be capable of producing modules with a maximum size of 2500 mm x 1440 mm smoothly, using cells with a maximum size of 210 mm x 210 mm (up to 22 busbars). The line should also be compatible with up to 24 busbars.

3. Trial Run of the Line: The bidder will conduct a trial run of the line for a minimum of one month after the successful completion of installation and commissioning. During this period, a minimum of 500 kW of SPV modules will be produced (Arrangement of all the raw materials will be in the scope of bidder).

A set of these modules will be sent to Indian laboratories authorized by MNRE for BIS certification.

4. The bidder shall provide three (03) sets of toolboxes along with the manufacturing line. Additionally, the bidder shall deploy one (01) official on a 24-hour basis for a period of five (05) years to handle the maintenance and repair of the manufacturing line. The machine must be repaired within 24 hours of breaking down.

5. Performance Guarantee:

5.1 Successful Production of minimum 500 KW of SPV Modules during trial run.

5.2 The breakage of Solar Cell must be less than 0.2% from over all the line.

5.3 One-month smooth production as calculation sheet.

5.4 Following process parameters should be demonstrated:

5.4.1 Gel content $\geq 80\%$

5.4.2 Ribbon Peel Strength $\geq 2N$ (Front Side)

5.4.3 EVA to Glass peel strength $\geq 16N/CM$

5.4.4 EVA to Backsheet Peel Strength $\geq 40N/CM$.

5.4.5 Module manufactured by the line must qualify Design & Safety qualification BIS certificate for the modules upto 750Wp.

6. Project Time Line: The time line for completion of the installation & of line 7 month from the date of issue of purchase order.

7. Mode of Execution:

The entire work shall be executed on turnkey basis. Any item (S) not included in the NIT but essentially required for completion of the line shall have to be carried out /supplied without any extra cost. Such work not listed in the NIT of work but elaborately described to perform or to facilitate particular operator (S) required for completion of the project shall deemed to have been included in the scope of this work and the bidder shall supply, install & commission the same without any extra cost.

8. Supply of Golden Solar Cell: Bidder should provide gloden solar cell (01 Nos each for 10BB, 16BB & 20 BB) along with laboratory certificate for calibration of Solar Cell Tester.

9. Liability and Insurances:

9.1 All the supply mentioned required under this NIT shall be insured till ITI Limited, Naini, Prayagraj. The bidder shall be responsible for loss, damages or depreciation to goods, Equipment & machineries upto delivery at site. The replacement of the effected items shall also be carried out by the bidder to meet the performance of the line wit in specified time.

9.2 All insurance related expenses shall be borne by bidder. Goods, Equipments & Machineries supplied shall be fully insured against the loss or damage or theft or pilferage or fire accident or combination etc. upto delivery at site i.e., ITI Limited, Naini, Prayagraj.

10. Taxes and Duties:

Proper tax invoices, raised against the different work viz. Supply, installation & commissioning etc must be submitted mentioning the tax component (GST) clearly and separately. All charges including custom duty,if any is the part of basic price. Company will pay only GST charges as applicable. Company will not pay more than the basic price except GST Charges/duty.

11. Pre Dispatch Inspections: Pre Dispatch Inspection of module manufacturing equipment's will be done by ITI/ITI's representative at OEM location only. ITI/ITI's representative shall have free access to the bidder's works during testing and final inspection of module manufacturing equipment's. Bidder shall inform the ITI not less than 30 days in advance. All testing/inspection arrangements shall be the responsibility of the bidder. ITI reserves the right to inspect the material during manufacturing and/or before dispatch as per specifications and test protocols. Internal inspection report and inspection certificate must accompany the supply.

12. Training: Bidder should provide adequate training to Three (3) ITI officials for min. 15 Days free of cost on operation and maintenance at the time of pre-dispatch inspection of the equipment's at OEM works. The cost of training & PDI is in the bidder scope. Bidder also provide training to ITI supervisors & workers on operation and maintenance of all the machines at the time, trial run of production of SPV Modules at ITI Limited, Naini, Prayagraj.

13. Warranty: The bidder should give comprehensive Guarantee/Warranty for a period of 60 months for overall manufacturing line from the date of successful installation & commissioning of the line. During this period bidder/ manufacturer should replace/ repair the defective parts including consumables. The entire expenditure including freight, customs duty, customs clearing charges, GST and local transportation if any for such replacement shall be borne by the bidder. In order to un-interrupted operation of line, during warranty period, a set of spare parts & consumables for overall manufacturing line shall be provided by bidder at the time of installation. Bidder will also undertake for after sales support for supplied item for the next 5 years completion of warranty period on chargeable basis. Bidder will provide the list of Spare parts and consumables with tentative price before completion of the warranty period of line.

14. Area: ITI Will provide area only upto 4000 sqm in single location.

15. Compliance Statement: Bidder has to submit compliance statement of Technical requirement including General Terms & Condition.

16. Miscellaneous:

i. Bidder shall supply all equipment as per specifications to ITI Limited, Naini. Integrate all equipment and commission the Solar Manufacturing Module line along with conveyor/transport system.

ii. bidder shall supply all new equipment and not for any refurbished / used equipment.

iii. All major machines/equipments such as Tabber Stringer, Laminator, Sun Simulator, Automatic bussing, EL tester, Auto trimming, Auto framing, etc should be from a reputed manufacture(OEM). Bidder should also responsible for calibration of all major machines/equipments during warranty period.

iv. Three sets of operation and maintenance manuals in Hard & Soft copy for each Machines/equipments along with bought out items manual in English shall be supplied. Maintenance manual should include complete electrical schematics, all mechanical/pneumatic/hydraulic diagram, troubleshooting chart, routine checks and preventive maintenance schedule and recommended spare parts list. Three sets of backup software CD's/Pen drive of all equipment is also to be provided.

v. The equipment shall be designed taking into account all safety and Occupational Health and Safety Advisory Services (OHSAS) requirements. Hazards connected with operation & maintenance of the equipment shall be brought out explicitly and instructions for minimizing the hazards (environmental/safety) to be indicated.

vi. The equipment shall be aesthetically fabricated.

vii. All pneumatics e.g. solenoid valves, isolation valves, gauges should be of well-known reputed make. bidder should specify the make & model.

viii. PC, PLC, electronics module used for automation in equipment should be of well-known reputed make. bidder should specify the make.

ix. List of spares, parts numbers, price and address of original bidders of spares/subsystems should be provided.

x. Provide required service facilities.

xi. Environmental requirements and their tolerance limits may be furnished.

xii. All required certifications under BEE/MNRE standards (such as Salt Mist, PID, ALMM, BEE Star Labeling, etc.), along with BIS certification, will be carried out on the samples produced (SPV modules up to 750Wp) during trial run of the manufacturing line. All the raw material (BOM) for manufacturing of trial run samples (For BIS Purpose) must be commercially available at competitive prices in India. However, bidder shall take consent of ITI for finalization of raw material/components as per BOM. The tentative SPV modules to be manufactured are attached in Annexure-III. The Bidder will assist ITI in all certification processes. All the raw material's test lab report must be submitted by bidder.

xiii. RFI filter/surge suppresser shall be provided at mains (incoming) stage as well as at the input stage of critical electronic instruments / systems used in the equipment.

xiv. The bidder should submit test and guarantee certificates for all the supplied equipment. Calibration certificates for all the instruments / gauges / indicators shall be provided. Calibration procedures are also to be indicated in detail. All equipment shall be guaranteed for trouble-free operation against manufacturing defects for a minimum period of 5 years from date of commissioning.

xv. Equipment should be rated for nominal 415 V+/-5% /3 phase / 50 Hz / 4wire or 220 V+/-5% / 1 phase / 50Hz / 3 wire systems only. Any voltage above or below the mentioned range shall be in the scope of bidder. ITI will provide single point of nominal 415 V+/-5% /3 phase / 50 Hz / 4wire or 220 V+/-5% / 1 phase / 50Hz / 3 wire only.

xvi. Service Engineers deputed by the bidder for installation of the equipment at ITI works shall comply with safety regulations, and have had adequate training in Environmental / Health / Safety hazards associated with the installation and operation of the equipment.

xvii. ITI will like to deal directly with manufactures of equipment or turnkey bidder and all the commercial invoices will be raised by equipment manufactures.

xviii. All requirements of export licensing, Govt. permissions or any other statutory clearance from the country of export as per regulations existing in the bidder's country shall be the responsibility of bidder.

xix. Three sets of tools, jigs, and fixtures will be provided with the manufacturing line.

xx. The bidder shall upgrade the software for the solar manufacturing line for a period of five years. All software must come with lifetime validity.

xxi. OEM Should have registered/subsidiary office & authorized service center in India.

Technical Requirements (Part C)			Bidder Remark
S. No.	M/C Description	Required Specifications	
<p>Scope of the work: Upgradation of existing 18MW Semi-Automatic SPV module manufacturing line (Make: Ecoprogetti Srl, Italy) up to 50MW Automatic SPV module manufacturing line (On turnkey basis) including supply, installation and commissioning, process optimization and warranty with minimum 2 years. The scope is including the layout design and required training for running and maintenance of the line.</p> <p>Note: ITI Naini having machine of Ecoprogetti (Model No.:ETS700 (02 nos. Tabber & Stringer),ECOLAB,ECOCUT 10,ECOLAYUP 100,ECOCUTO1,ECOLAM09,ECOPH2,ECOFRAME IH,ECOSUN PLUS,ECOSIL</p>			
1	Tabber Stringer	<ul style="list-style-type: none"> • Throughput : Cummulative 3000 Half Cut Cells/ Hr • Automatic robot for accurate cell pickup and placement. • Capable of processing very thin PV solar cells (≥ 0.10 mm), such as mono, poly, bifacial, PERC, HJT, and other high-efficiency solar cells, without mechanical and thermal stress. • Cell compatibility: 180 - 230 mm • Cell Thickness: 110μm-300μm • Breakage Rate: < 0.2% • Busbar compatibility: 9 - 22 BB or more • Stringer Head required: 9 BB • Infrared soldering technology with high soldering quality. • High precision alignment performed both optically and mechanically. • High-resolution cameras for alignment, broken cell detection, visual inspection of microcracks and edge chips before soldering (reputed make). • Half-cell and one-third cell compatibility. • Ribbon Size Capability: Width - 0.3mm to 1.1mm • Capability to handle round wire and flat ribbon. • Maximum String Length: 2000mm. • Adjustable gap between cell to cell and string to string: ≥ 0.2 mm. • Number of solar cells per string and other recipe parameters adjustable via touch-screen. • Automatic loading of the cell basket. • Automatic stretching and fluxing of the ribbon before soldering. • Automatic spray fluxing on the ribbon. • Provision for removing thermal stress on the cell. • Adjustable tab and solder length. • Touch screen with embedded PC. • Remote assistance facility. • Quick ribbon changeover. • Emergency stop during human intervention. • Capability to check all manufactured string before layup using AI based software. • Upgaration of Existing Layup station. 	

2	Automatic Bussing	• Automatic Soldering of the interconnection between the strings.	
		• Soldering Technology: Induction (Contactless Soldering) without Flux.	
		• Ribbon processing: L bend Ribbon.	
		• Cell compatibility: 182 - 230 mm	
		• Busbar compatibility: 9 - 22 BB or more	
		• Should be compatible for Glass-Backsheet module	
		• Should be compatible for Flat & Round Ribbon	
		• Suitable for module with JB at the Top	
		• Capable fo processing Modules designed as per IEC 61730 (Latest Version)	
		• Module Orientation: Long Side Leading	
3	Inline Auto Trimming	• Remote assistance facility	
		• The machine should be capable of handling a minimum of 72 SPV Module per hour.	
		• Module Orientation:Short/Long Side Leading	
		• To Trim simultaneously the 4 edges of the panel.	
		• Suitable for Glass-Backsheet	
		• Provision for collecting waste material after module trimming.	
4	Auto Framing Station	• Remote assistance facility	
		• The machine should be capable of handling a minimum of 72 SPV Module per hour.	
		Fully Automatic Inline Framing Machine	
		• Suitable for Glass-Back sheet	
		• Module Orientation: Long Side Leading	
5	Upgradation of Sun Simulator	• Remote assistance facility	
		• The machine should be capable of handling a minimum of 60 SPV Module (240 Nos of Frames) per hour.	
6	Transport system with Centering & Direction	• Fully Automatic Sun Simlation with Auto Contact facilities.	
	Centering & Direction	All Transport system with Centering & Direction changer to be incorporated in the line at all critical position for seamless movement of the module	

General Terms & Conditions:	
1. Project description: Upgradation of existing 18MW Semi-Automatic SPV module manufacturing line (Make: Ecoprogetti Srl, Italy) up to 50MW Automatic SPV module manufacturing line (On turnkey basis) at ITI Limited, NAINI, Prayagraj.	
2. Trial Run of the Line: The bidder will conduct a trial run of the line for a minimum of one month after the successful completion of installation and commissioning. During this period, a minimum of 50 kW of SPV modules will be produced.(Arrangement of all the raw materials will be in the scope of bidder). A set of these modules will be sent to Indian laboratories authorized by MNRE for BIS certification & other required certification.	
4. The bidder shall provide three (03) sets of toolboxes along with the manufacturing line. Additionally, the bidder shall deploy one (01) official on a 24-hour basis for a period of two (02) years to handle the maintenance and repair of the manufacturing line. The machine must be repaired within 24 hours of breaking down.	
5.Performance Guarantee:	
5.1 Successful Production of minimum 50 KW of SPV Modules during trail runs.	
5.2 The breakage of Solar Cell must be less than 0.2% from over all the line.	
5.3 One-month smooth production as calculation sheet.	
5.4 Following process parameters should be demonstrated.	
· Gel content >=80%	
· Ribbon Peel Strength > = 2N(Front Side),	
· EVA to Glass peel strength >=16N/CM	
· EVA to Backsheet Peel Strength >=40N/CM.	
5.5 Module manufactured by the line must qualify Design & Safety qualification BIS certificate for the modules upto 400Wp.	
6. Project Time Line: The time line for completion of the installation & of line 6 month from the date of issue of purchase order.	
7. Mode of Execution/FOC: The entire work shall be executed on turnkey basis. Any item (S) not included in the NIT but essentially required for completion of the line shall have to be carried out /supplied without any extra cost. Such work not listed in the NIT of work but elaborately described to perform or to facilitate particular operator (S) required for completion of the project shall deemed to have been included in the scope of this work and the bidder shall supply, install & commission the same without any extra cost.	

<p>8. Price Escalation: No price escalation is allowed. The rate(s) quoted against the work shall remain firm during the entire contract period. Any change in forex rate shall not be considered for price variation.</p>	
<p>9. Liability and Insurances:</p>	
<p>9.1 All the supply mentioned required under this NIT shall be insured till ITI Limited, Naini, Prayagraj. The bidder shall be responsible for loss, damages or depreciation to goods, Equipment & machineries upto delivery at site. The replacement of the effected items shall also be carried out by the bidder to meet the performance of the line wit in specified time.</p>	
<p>9.2 All insurance related expenses shall be borne by bidder. Goods, Equipments & Machineries supplied shall be fully insured against the loss or damage or theft or pilferage or fir accident or combination etc. upto delivery at site i.e., ITI Limited, Naini, Prayagraj.</p>	
<p>10. Taxes and Duties: Proper tax invoices, raised against the different work viz. Supply, installation & commissioning etc must be submitted mentioning the tax component (GST) clearly and separately. All charges including custom duty is the part of basic price. Company will pay only GST charges as applicable. Company will not pay more than the basic price except GST Charges/duty.</p>	
<p>11. Training: Bidder will provide training to ITI supervisors & workers on operation and maintenance of all the machines at the time, trial run of production of SPV Modules at ITI Limited, Naini, Prayagraj.</p>	
<p>12. Warranty: The bidder should give comprehensive Guarantee/Warranty for a period of 24 months for overall manufacturing line from the date of successful installation & commissioning of the line. During this period bidder/ manufacturer should replace/ repair the defective parts including consumables. The entire expenditure including freight, customs duty, customs clearing charges, GST and local transportation if any for such replacement shall be borne by the bidder. In order to un-interrupted operation of line, during warranty period, a set of spare parts & consumables for overall manufacturing line shall be provided by bidder at the time of installation. bidder will also undertake for after sales support for supplied item for the next 10 years completion of warranty period on chargeable basis. bidder will provide the list of Spare parts and consumables with tentative price before completion of the warranty</p>	
<p>13.Compliance Statement:Bidder has to submit compliance statement of Technical requirement including General Terms & Condition.</p>	

14. Miscellaneous:	
i. Bidder shall supply all equipment as per specifications to ITI Limited, Naini. Integrate all equipment and commission the Solar Manufacturing Module line along with conveyor/transport system.	
ii. bidder shall supply all new equipment and not for any refurbished / used equipment.	
iv. Three sets of operation and maintenance manuals in Hard & Soft copy for each Machines/equipments along with bought out items manual in English shall be supplied. Maintenance manual should include complete electrical schematics, all mechanical/pneumatic/hydraulic diagram, troubleshooting chart, routine checks and preventive maintenance schedule and recommended spare parts list. Three sets of backup software CD's/Pen drive of all equipment is also to be provided.	
v. The equipment shall be designed taking into account all safety and Occupational Health and Safety Advisory Services (OHSAS) requirements. Hazards connected with operation & maintenance of the equipment shall be brought out explicitly and instructions for minimizing the hazards (environmental/safety) to be indicated.	
vi. The equipment shall be aesthetically fabricated.	
vii. All pneumatics e.g. solenoid valves, isolation valves, gauges should be of well-known reputed make. bidder should specify the make & model.	
viii. PC, PLC, electronics module used for automation in equipment should be of well-known reputed make. bidder should specify the make	
ix. List of spares, parts numbers, price and address of original bidders of spares/subsystems should be	
x. Provide required service facilities.	
xi. Environmental requirements and their tolerance limits may be furnished.	
xii. All required certifications under BEE/MNRE standards (such as Salt Mist, PID, ALMM, BEE Star Labeling, etc.), along with BIS certification, will be carried out on the samples produced (SPV modules up to 400Wp) during trial run of the manufacturing line. All the raw material (BOM) for manufacturing of trial run samples (For BIS Purpose) must be commercially available at competitive prices in India. However, bidder shall take consent of ITI for finalization of raw material/components as per BOM. The tentative SPV modules to be manufactured are attached in Annexure-IV. The Bidder will assist ITI in all certification processes. All the raw material's test lab report must be submitted by bidder.	
xiii. RFI filter/surge suppresser shall be provided at mains (incoming) stage as well as at the input stage of critical electronic instruments / systems used in the equipment.	
xiv. The bidder should submit test and guarantee certificates for all the supplied equipment. Calibration certificates for all the instruments / gauges / indicators shall be provided. Calibration procedures are also to be indicated in detail. All equipment shall be guaranteed for trouble-free operation against manufacturing defects for a minimum period of 2 years from date of commissioning.	

<p>xv. Equipment should be rated for nominal 415 V+/-5% /3 phase / 50 Hz / 4wire or 220 V+/-5% /1 phase / 50Hz / 3 wire systems only.Any voltage above or below the mentioned range shall be in the scope of bidder.ITI will provide single point of nominal 415 V+/-5% /3 phase / 50 Hz / 4wire or 220 V+/-5% /1 phase / 50Hz / 3 wire only.</p>	
<p>xvi. Service Engineers deputed by the bidder for installation of the equipment at ITI works shall comply with safety regulations, and have had adequate training in Environmental / Health / Safety hazards associated with the installation and operation of the equipment.</p>	
<p>xvii. ITI will like to deal directly with manufactures of equipment or turnkey bidder and all the commercial invoices will be raised by equipment manufactures.</p>	
<p>xviii. All requirements of export licensing, Govt. permissions or any other statutory clearance from the country of export as per regulations existing in the bidder's country shall be the responsibility of bidder.</p>	
<p>xix. Three sets of tools, jigs, and fixtures will be provided with the manufacturing line.</p>	
<p>xx. The bidder shall upgrade the software for the solar manufacturing line for a period of two years. All software must come with lifetime validity.</p>	
<p>xxi. OEM Should have registered/subsidiary office & authorized service center in India.</p>	

GENERAL CONDITIONS

1. All the relevant test certificates of various Components as mentioned in the ITI tender shall be provided along with the bid.
2. Bidder shall provide BOQ, Drawings and Datasheets of each component of solar manufacturing line.
3. The bidder shall submit clause by clause compliance to the technical requirement.
4. Bidder should have to submit make/model list with its proposal as per technical requirement.
5. **Tender Acceptance Letter:** Bidder should submit unconditional acceptance of all terms & conditions of the Tender document on company's/firm letter head duly signed & stamped by the authorized signatory.
6. Bidder should Sign & Stamped on each page of Tender documents.
7. No deviation certificate on company letter head has to be submitted with the bid documents.
8. Quotations shall be liable to be rejected if there is/are any deviation(s) from the specifications.
9. Escalation in price (except where price variation clause is applicable), deviation from delivery schedule, terms and conditions will not be permitted in your quotation. Statutory Taxes & Duties should be shown separately from the price.
10. Catalogue, literature, specification details should accompany the quotation. Incomplete quotations are liable to be rejected.
11. Any deviations whether technical or commercial stated anywhere in the bid shall not be taken into account and may render the bid non-responsible and liable to be rejected.
12. Bidder Profile should be submitted along with the bid.
13. Quotation/offer shall be submitted within the bid submission last date.
14. ITI reserves the right to suspend or cancel the Tender at any stage, to accept, or reject any or all offers at any stage of the process and / or to modify process, or any part thereof, at any time without assigning reason, any obligation or liability whatsoever.
15. During the evaluation of Tender, if ITI requires any clarifications, the Bidder should be ready to give clarifications for any part of the offer against this tender to ITI to complete the evaluation.
16. Bidder must submit the signed integrity pact along with the technical bid. (Format Attached at Annexure-II)

17. All import duties, including customs duties, levies, and associated charges, shall be borne solely by the bidder. The procuring entity, [ITI], will only bear the applicable Goods and Services Tax (GST) as per prevailing regulations.

18. Liquidated Damages Clause:

Time is the essence of contract and the materials, against an order arising out of this enquiry must be delivered by the supplier according to the delivery schedule indicated in the P.O. In case of any change, the supplier should inform us in advance and obtain our approval to the revised delivery schedule. Should the supplier fail to deliver the material or part thereof as per the delivery schedule, or any extension thereof, we shall be entitled at our option either to recover from the supplier, as penalty, a sum equivalent to ½% (half percent) per week for first four weeks and 0.7% per week thereafter for such delay or part thereof or terminate the contract in respect of the balance supply so delayed and purchase materials elsewhere at the risk and cost of the defaulting supplier.

Note: LD against late supply and I & C will be recoverable from the amount payable to vendors/supplies against Bill of Exchange/LC.

Authorized Signatory: All certificates and documents received as part of offer shall be signed by the “Authorized Representative”. Power of attorney in the name of person signing the documents is mandatory (On Non-Judicial Stamp paper). (Signing is not mandatory in technical manuals)

Validity of Offer: Quoted/Offer Price shall be valid for 120 days.

Late Offer: Any offer received after the prescribed time line shall be rejected.

Language of offers: The offers submitted by vendor and all the correspondence and documents relating to the offers exchanged by the vendor shall be in English language only.

Cost of TENDER: The vendor shall bear all cost associated with the preparation & submission of its TENDER including cost of presentation for 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 TENDER process. In this case, submissions of required material as per sample plan of certifying agency is to be arranged & provided free of cost by bidder.

Amendment of TENDER: 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 prospective vendor modified by the TENDER document by an amendment. In order to provide prospective vendor reasonable time in which to take the amendment into account in preparing their offers, 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 TENDER.

Disclaimer: ITI and / or its officers employees disclaim all/ any liability 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 documents 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.

Award of Contract:

Bidder offering the Lowest quoted price shall be declared as the L1 bidder (in each part separately means Part-A/B and Part-C). The Financial Bid format is enclosed.

Procurement against Part-A/B and Part-C will be at sole discretion of ITI without any claim from the successful Bidder.

LAND BORDER SHARING DECLARATION
Annexure to Bid Form: Eligibility Declarations

(To be submitted as part of tender/Technical Bid)(On company letter head)
(Along with supporting documents, if any)

Tender Document No. _____ Tender Title: _____
Bidder's Name: _____(Address and contact details)
Bidder's Reference No. _____
Date: _____

Restrictions on procurement from Bidders from a country or countries, or a class of countries under Rule 144(xi) of the General Financial Rules 2017.

“We have read the clause regarding restrictions on procurement from a Bidder of a country which shares a land border with India; and solemnly certify that we are not from such a country or, if from such a country, we are registered with the Competent Authority (copy enclosed). We hereby certify that we fulfill all requirements in this regard and are eligible to be considered.”

Penalties for false or misleading declarations:

We hereby confirm that the particulars given above are factually correct and nothing is concealed and also undertake to advise any future changes to the above details. We understand that any wrong or misleading self-declaration by us would be violation of Code of integrity and would attract penalties as mentioned in this tender document, including debarment.

(Signature with date)

(Name and designation)
Duly authorized to sign Bid for and on behalf of

PRE-CONTRACT INTEGRITY PACT

(To be executed on plain paper and submitted along with Technical Bid/ RFQ. To be signed by the BIDDER and same signatory Competent/ Authorized to sign the relevant contract on behalf of the ITI Ltd).

TENDER No.....

This Integrity Pact is made onday of2024

BETWEEN:

ITI Limited,having its Registered & corporate office at ITI Bhavan, Dooravaninagar, Bangalore – 560016 India, and established under the Ministry of Communications & IT, Government of India (hereinafter called the Principal), which term shall unless excluded by or is repugnant to the context, be deemed to include its Chairman & Managing Director, Directors, Officers or any of them specified by the Chairman & Managing Director in this behalf and shall include its successors and assigns) ON THE ONE PART

AND:

M/s represented by..... Chief Executive Officer (here in after called the BIDDER(s)), which term shall unless excluded by or is repugnant to the context be deemed to include its heirs, representatives, successors and assigns of the IMSP/contract ON THE SECOND PART.

Preamble

WHEREAS the Principal intends to award, under laid down organizational procedures, TENDER/contract for.....(name of the Stores / equipment's / items). The Principal, values full compliance with all relevant laws of the land, regulations, economic use of resources and of fairness/ transparency in its relations with its BIDDER(s).

In order to achieve these goals, the Principal has appointed an Independent External Monitor (IEM), who will monitor the TENDER process and the execution of the contract for compliance with the principles as mentioned herein this agreement.

WHEREAS, to meet the purpose aforesaid, both the parties have agreed to enter into this Integrity Pact the terms and conditions of which shall also be read as integral part and parcel of the TENDER and contract between the parties.

NOW THEREFORE, IN CONSIDERATION OF MUTUAL COVENANTS STIPULATED IN THIS PACT THE PARTIES HEREBY AGREE AS FOLLOWS AND THIS PACT WITNESSETH AS UNDER:

SECTION 1 – COMMITMENTS OF THE PRINCIPAL

The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

a. No employee of the Principal, personally or through family members, will in connection with the TENDER for or the execution of the contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the personal is not legally entitled to.

b. The Principal will, during the TENDER process treat all BIDDER(s) with equity and reason. The Principal will in particular, before and during the TENDER process, provide to all BIDDER(s) the same information and will not provide to any BIDDER(s) confidential/ additional information through which the BIDDER(s) could obtain an advantage in relation to the TENDER process or the contract execution.

c. The Principal will exclude from the process all known prejudiced persons. If the principal obtains information on the conduct of any of its employee, which is a criminal offence under IPC/PC Act if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary action as per its internal laid down Rules/ Regulations.

SECTION 2 – COMMITMENTS OF THE IMSP / CONTRACTOR

2.1 The BIDDER(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself observe the following principles during the participation in the TENDER process and during the execution of the contract.

a. The BIDDER(s)/contractor(s) will not, directly or through any other person or firm offer, promise or give to any of the Principal's employees involved in the TENDER process or the execution of the contract or to any third person any material or other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever (during the TENDER process or during the execution of the contract.

b. The BIDDER(s)/contractor(s) will not commit any offence under IPC/PC Act, further the BIDDER(s)/contractor(s) will not use improperly, for purposes of competition of personal gain, or pass onto others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

c. The BIDDER(s)/Contractor(s) of foreign origin shall disclose the name and address of the agents /representatives in India, if any. Similarly, the BIDDER(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any.

d. The BIDDER(s) f Contractor(s) will, when presenting the bid, disclose any and all payments made, are committed to or intend to make to agents, brokers or any other intermediaries in connection with the award of the contract.

e. The BIDDER(s)/Contractor(s) will not bring any outside influence and Govt. bodies directly or indirectly on the bidding process in furtherance to his bid.

f. The BIDDER(s)/Contractor(s) will not instigate third persons to commit offences outlined above or to be an accessory to such offences.

SECTION 3 – DISQUALIFICATION FROM TENDER PROCESS & EXCLUSION FROM FUTURE CONTRACTS

If the BIDDER(s)/Contractor(s), during TENDER process or before the award of the contract or during execution has committed a transgression in violation of Section 2, above or in any other form such as to put his reliability or credibility in question the Principal is entitled to disqualify BIDDER(s)/Contractor(s) from the TENDER process.

If the BIDDER(s)/Contractor(s), has committed a transgression through a violation of Section 2 of the above, such as to put his reliability or credibility into question, the Principal shall be entitled exclude including blacklisting for future TENDER/contract award process. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Principal taking into consideration the full facts and circumstances of each case, particularly taking into account the number of transgression, the position of the transgressor within the company hierarchy of the BIDDER(s)/Contractor(s) and the amount of the damage. The exclusion will be imposed for a period of minimum one year.

The BIDDER(s)/Contractor(s) with its free consent and without any influence agrees and undertakes to respect and uphold the Principal's absolute right to resort to and impose such exclusion and further accepts

and undertakes not to challenge or question such exclusion on any ground including the lack of any hearing before the decision to resort to such exclusion is taken. The undertaking is given freely and after obtaining independent legal advice.

A transgression is considered to have occurred if the Principal after due consideration of the available evidence concludes that on the basis of facts available there are no material doubts.

The decision of the Principal to the effect that breach of the provisions of this Integrity Pact has been committed by the BIDDER(s)/ Contractor(s) shall be final and binding on the BIDDER(s)/Contractor(s), however the BIDDER(s)/Contractor(s) can approach IEM(s) appointed for the purpose of this Pact.

On occurrence of any sanctions/ disqualifications etc. arising out from violation of integrity pact BIDDER(s)/ Contractor(s) shall not be entitled for any compensation on this account.

Subject to full satisfaction of the Principal, the exclusion of the BIDDER(s)/Contractor(s) could be revoked by the Principal if the IMSP (s)/ Contractor(s) can prove that he has restored/ recouped the damage caused by him and has installed a suitable corruption preventative system in his organization.

SECTION 4 – PREVIOUS TRANSGRESSION

The BIDDER(s)/Contractor(s) declares that no previous transgression occurred in the last 3 years immediately before signing of this Integrity Pact with any other company in any country conforming to the anti- corruption/transparency International (TI) approach or with any other Public Sector Enterprises/ Undertaking in India of any Government Department in India that could justify his exclusion from the TENDER process.

If the BIDDER(s)/ Contractor(s) make incorrect statement on this subject, he can be disqualified from the TENDER process or action for his exclusion can be taken as mentioned under Section-3 of the above for transgressions of Section-2 of the above and shall be liable for compensation for damages as per Section- 5 of this Pact.

SECTION 5 – COMPENSATION FOR DAMAGE

If the Principal has disqualified the BIDDER(s)/Contractor(s) from the TENDER process prior to the award according to Section 3 the Principal is entitled to forfeit the Earnest Money Deposit/Bid Security/ or demand and recover the damages equivalent to Earnest Money Deposit/Bid Security apart from any other legal that may have accrued to the Principal.

In addition to 5.1 above the Principal shall be entitled to take recourse to the relevant provision of the contract related to termination of Contract due to Contractor default. In such case, the Principal shall be entitled to forfeit the Performance Bank Guarantee of the Contractor or demand and recover liquidate and all damages as per the provisions of the contract agreement against termination.

SECTION 6 – EQUAL TREATMENT OF ALL IMSPS/CONTRACTORS

The Principal will enter into Integrity Pact on all identical terms with all IMSPs and contractors for identical cases.

The BIDDER(s)/Contractor(s) undertakes to get this Pact signed by its subcontractor(s)/sub- vendor(s)/ associate(s), if any, and to submit the same to the Principal along with the TENDER document/contract before signing the contract. The BIDDER(s)/Contractor(s) shall be responsible for any violation(s) of the provisions laid down in the Integrity Pact Agreement by any of its subcontractors/ sub-vendors / associates.

The Principal will disqualify from the TENDER process all IMSPs who do not sign this Integrity Pact or violate its provisions.

SECTION 7 – CRIMINAL CHARGES AGAINST VIOLATING BIDDER(S)/CONTRACTORS

7.1 If the Principal receives any information of conduct of an BIDDER(s)/Contractor(s) or sub-contractor/ sub- vendor/associates of the BIDDER(s)/Contractor(s) which constitutes corruption or if the principal has substantive suspicion in this regard, the principal will inform the same to the Chief Vigilance Officer of the Principal for appropriate action.

SECTION 8 – INDEPENDENT EXTERNAL MONITOR(S)

The Principal appoints competent and credible Independent External Monitor(s) for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this pact.

The Monitor is not subject to any instructions by the representatives of the parties and performs his functions neutrally and independently. He will report to the Chairman and Managing Director of the Principal.

The BIDDER(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all product documentation of the Principal including that provided by the BIDDER(s)/Contractor(s). The BIDDER(s)/Contractor(s) will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The Monitor is under contractual obligation to treat the information and documents BIDDER(s)/Contractor(s) with confidentiality.

The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the project provided such meeting could have an impact on the contractual relations between the Principal and the BIDDER(s)/Contractor(s). As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in specific manner, refrain from action or tolerate action.

The Monitor will submit a written report to the Chairman & Managing Director of the Principal within toweeks from the date of reference or intimation to him by the principal and, should the occasion arise, submit proposals for correcting problematic situations.

If the Monitor has reported to the Chairman & Managing Director of the Principal a substantiated suspicion of an offence under relevant IPC/PC Act, and the Chairman & Managing Director of the principal has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

The word 'Monitor' would include both singular and plural.

Details of the Independent External Monitor appointed by Principal at present is furnished below:

SECTION 9 - FACILITATION OF INVESTIGATION

9.1 In case of any allegation of violation of any provisions of this Pact or payment of commission, the Principal or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER(s)/Contractor(s) and the BIDDER(s)/Contractor(s) shall provide necessary information and documents in English and shall extend all help to the Principal for the purpose of verification of the documents.

SECTION 10 - LAW AND JURISDICTION

The Pact is subject to the Law as applicable in Indian Territory. The place of performance and jurisdiction shall the seat of the Principal.

The actions stipulated in this Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

SECTION 11 – PACT DURATION

This Pact begins when both the parties have legally signed it. It expires after 12 months on completion of the warranty/ guarantee period of the project /work awarded, to the fullest satisfaction of the Principal.

If the BIDDER(s)/Contractor(s) is unsuccessful, the Pact will automatically become invalid after three months on evidence of failure on the part of the BIDDER(s)/Contractor(s).

If any claim is lodged/made during the validity of the Pact, the same shall be binding and continue to be valid despite the lapse of the Pact unless it is discharged/determined by the Chairman and Managing Director of the Principal.

SECTION 12 - OTHER PROVISIONS

12.1 This pact is subject to Indian Law, place of performance and jurisdiction is the Registered & Corporate office of the Principal at Bangalore.

12.2 Changes and supplements as well as termination notices need to be made in writing by both the parties. Side agreements have not been made.

12.3 If the BIDDER(s)/Contractor(s) or a partnership, the pact must be signed by all consortium members and partners.

12.4 Should one or several provisions of this pact turn out to be invalid, the remainder of this pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

12.5 Any disputes/ difference arising between the parties with regard to term of this Pact, any action taken by the Principal in accordance with interpretation thereof shall not be subject to any Arbitration. Arbitration proceeding under Arbitration and Conciliation act 1996.

12. 6 The action stipulates in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

In witness whereof the parties have signed and executed this Pact at the place date first done mentioned in the presence of the witnesses:

For PRINCIPAL

For BIDDER(S)/CONTRACTOR(S)

.....

.....

Name Designation.

Name Designation.

Witness:

1.

1.

2.

2.

Annexure - III

SPV Modules with DCR Solar Cells		
SPV Module Wattage	No. of SPV Modules	Total wattage (W)
540	15	8100
550	15	8250
580	15	8700
600	15	9000
620	15	9300
650	15	9750
680	15	10200
700	15	10500
720	15	10800
740	15	11100
750	210	157500
	360	253200

SPV Modules with Non DCR Solar Cells		
SPV Module Wattage	No. of SPV Modules	Total wattage (W)
540	15	8100
550	15	8250
580	15	8700
600	15	9000
620	15	9300
650	15	9750
680	15	10200
700	15	10500
720	15	10800
740	15	11100
750	210	157500
	360	253200

Annexure - IV

SPV Modules with DCR Solar Cells		
SPV Module Wattage	No. of SPV Modules	Total wattage (W)
75	2	150
85	2	170
100	2	200
110	2	220
120	25	3000
300	2	600
335	2	670
350	2	700
360	2	720
380	2	760
400	45	18000
	88	25190

SPV Modules with Non DCR Solar Cells		
SPV Module Wattage	No. of SPV Modules	Total wattage (W)
75	2	150
85	2	170
100	2	200
110	2	220
120	25	3000
300	2	600
335	2	670
350	2	700
360	2	720
380	2	760
400	45	18000
	88	25190

SITE VISIT REPORT LETTER

(To be submitted separately for each location on letterhead of bidder)

Date: _____

To,
Purchase Officer (Enquiry Cell), IMM Dept
ITI Limited, Mirzapur Road, Naini Unit,
Naini, Prayagraj-211010

Sub.: Site Visit Report for Setting up of 500MW Fully Automatic solar photovoltaic (SPV) Module Manufacturing line (On Turnkey Basis) at ITI Limited, NAINI, Prayagraj.

Ref.: ITI's Tender No. -----

This has reference to above referred tender of Setting up of 500MW Fully Automatic solar photovoltaic (SPV) Module Manufacturing line (On Turnkey Basis) at ITI Ltd, Naini Unit, Mirzapur Road , Naini, Prayagraj.

I / We hereby declare that we have visited site.

"I/We have familiarized ourselves with the site conditions, the space of the building, and the requirements of the tender conditions. We have verified all the details necessary to execute the project. We have no issues undertaking the project and completing it within the stipulated time frame."

Thanking you,
Yours faithfully

(Signature of Bidder)
Name of Bidder -

(Signature ITI authorities)
Designation

LAPTOP SPECIFICATIONS (Make: Apple/Lenovo/Acer/Dell/HP/Asus)

S.No.	LAPTOP DESCRIPTION		
	Parameter	In Windows	In MacBook
1.	Processor Make	Intel Core i7	Apple (M3 or better)
2.	Processor Generation	14 th	M4 chip or better
3.	OPERATING SYSTEM	Windows 11 Professional	Mac OS Sonoma or better
5.	Microsoft Office License Copy	OFFICE 16 & above	OFFICE 16 & above
6.	RAM Size (GB)	≥8	≥8
7.	Wireless Connectivity	Wi-Fi 6: 802.11ax	Wi-Fi 6: 802.11ax
8.	Version of Bluetooth Available	5.3	5.3
9.	Type of Drives used to populate the Internal Bays	SSD	SSD
10.	Total SSD Capacity (GB)	≥1024	≥500
11.	Display Size (Inch)	≥14	≥14
	Display Resolution (Pixels)	1920x1080	2880*1864
12.	Webcam Resolution	HD	
13.	Battery Type, Chemistry	Integrated, Li – ion	Integrated, Li – ion
14.	Battery Backup Time (Hours)	≥ 9 hr	≥ 9 hr
15.	Battery Warranty (Year)	1	1
16.	On Site OEM Warranty (Year) (OEM/ Authorized channel partner shall note that W/G to be fulfilled by OEM at site)	5	5
17.	Laptop Bag	1no.	1no

Technical Specification for Printer (B&W)

Key Functions	Print, Scan and Copy
Description	High productivity Color Multi-Function Centre with 2-Sided printing, Dual Band Wireless, Gigabit Ethernet connectivity
Print Speed (A4/Letter)	≥25ppm
Print Resolution	≥ 1200 x 1200 dpi
2-Sided Feature	Automatic 2-Sided Printing

CONNECTIVITY/NETWORKING

Interface	USB2.0, Gigabit Ethernet (10Base-T/100Base-TX/1000Base-T), Wi-Fi Direct, Dual Band Wireless LAN (2.4GHz/5.0GHz)
Front USB Direct Print	Yes
Mobile Solutions	Print & Scan
Desktop Solutions	Print & Scan
Web Connect	Yes

COPY FUNCTIONS

Copy Speed (A4/Letter)	≥ 25 cpm
Copy Resolution	≥ 600 x 600 dpi
Reduction / Enlargement Ratio	25% - 400% in 1% increments

SCAN FUNCTIONS

Scan Technology	CIS
Resolution (Optical)	≥ 600 dpi
Scan-to Functions	SharePoint, E-mail, E-mail Server Image, OCR, File, FTP, FTPS, Network (Windows only), USB

PAPER HANDLING

Input Tray (Standard)	≥ 250 Sheets
Multi-purpose Tray/Manual Slot	1 Sheet
Automatic Document Feeder (ADF)	≥ 50 Sheets
Media Size (Standard Tray)	A4, Letter, Legal, Mexican Legal, India Legal, Executive, A5, A5 Long Edge, A6, JIS B5, A4 Short (270mm), Folio, 16K (195 x 270 mm)

OTHERS

Memory	512MB
OS Compatibility	Windows: Win10, 11/Server 2012/2012R2/2016/2019/2022 Linux: CUPS, LPD/LPRng (x86/x64 environment)
Security Features	Setting Lock, Secure Function Lock, Secure Print, Active Directory, LDAP
Power Source	220-240V AC 50/60Hz

Technical Specification for Printer(Color)

Key Functions	Print, Scan and Copy
Description	High productivity Color Multi-Function Centre with 2-Sided printing, Dual Band Wireless, Gigabit Ethernet connectivity
Print Speed (A4/Letter)	≥26ppm
Print Resolution	≥ 600 x 2,400 dpi
2-Sided Feature	Automatic 2-Sided Printing

CONNECTIVITY/NETWORKING

Interface	USB 2.0, Gigabit Ethernet (10Base-T/100Base-TX/1000Base-T), Wi-Fi Direct, Dual Band Wireless LAN (2.4GHz/5.0GHz)
Front USB Direct Print	Yes
Mobile Solutions	Print & Scan
Desktop Solutions	Print & Scan
Web Connect	Yes

COPY FUNCTIONS

Copy Speed (A4/Letter)	≥ 26 cpm
Copy Resolution	≥ 600 x 600 dpi
Reduction / Enlargement Ratio	25% - 400% in 1% increments

SCAN FUNCTIONS

Scan Speed (Mono/Color)	27/21 ipm (A4) 29/22 ipm (LTR)
Scan Technology	CIS
Resolution (Optical)	≥ 1,200 x 1,200 dpi
Resolution (Interpolated)	≥ 19,200 x 19,200 dpi
Scan-to Functions	SharePoint, E-mail, E-mail Server Image, OCR, File, FTP, FTPS, Network (Windows only), USB

PAPER HANDLING

Input Tray (Standard)	≥ 250 Sheets
Multi-purpose Tray/Manual Slot	1 Sheet
Automatic Document Feeder (ADF)	50 Sheets
Media Size (Standard Tray)	A4, Letter, Legal, Mexican Legal, India Legal, Executive, A5, A5 Long Edge, A6, JIS B5, A4 Short (270mm), Folio, 16K (195 x 270 mm)

OTHERS

Memory	512MB
OS Compatibility	Windows: Win10, 11/Server 2012/2012R2/2016/2019/2022 Linux: CUPS, LPD/LPRng (x86/x64 environment)
Security Features	Setting Lock, Secure Function Lock, Secure Print, Active Directory, LDAP
Power Source	220-240V AC 50/60Hz

ITI LIMITED
(MIRZAPUR ROAD, NAINI , ALLAHABAD- 211010 (U.P.) ,INDIA)

Financial Bid

Proforma for quoting the rates

Quotation No. / Date					
TENDER No.					
Name of Work					
HSN CODE (08 DIGIT)					
Name of the Firm					
Sr.No.	DESCRIPTION OF MATERIAL AND ITI CODE	Unit	Qty. (set.)	Unit Rate	Total Amount
1	500MW manufacturing line setup at ITI Naini (Turnkey Basis)	Set	1.00		-
2	250MW manufacturing line upgradable to 500MW setup at ITI Naini (Turnkey Basis)	Set	1.00		-
3	Upgradation of 18MW to 50MW manufacturing line setup at ITI Naini (Turnkey Basis)	Set	1.00		-
A	Delivery Schedule				
B	Payment Terms				
C	Validity of Offer				
D	Remark				
E	Note	Above items evaluated separately at the time of price bid evaluation			

Note: - 1) No color cells should be left blank
2) Mode of currency accepted: INR/EURO/DOLLAR
3) Conversion rate factor against the evaluation of price bid will be considered at the time of price bid opening.