ITI LIMITED
(A Government of India Undertaking)

TENDER
FOR
ESTABLISHMENT OF A 500 (or) 250 (or) 100 MW AUTOMATIC SOLAR PHOTOVOLTAIC (SPV) MODULE MANUFACTURING LINE ON A TURNKEY BASIS AT ITI LIMITED, NAINI, PRAYAGRAJ; INCLUDING A BUY-BACK PROVISION FOR THE EXISTING 18 MW SOLAR MANUFACTURING LINE.

Enquiry No.: NPC6E0001

Dated: 14th, March, 2026

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

TABLE OF CONTENT

FORM NO.
XPR14/M2/0995/24

I T I LIMITED

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

Notice Inviting Tender (NIT)

AIL: engcellx_nni@itiltd.co.in **WEB-SITE: http://www.itiltd.in**
ENQUIRY NO. NPC6E0001 **DATE: 14.03.2026**

DUE DATE: 04.04.2026 at 11:00 AM
OPENING DATE: 04.04.2026 at 11:30 AM

DEAR SIR,

PLEASE QUOTE YOUR LOWEST RATES AND BEST DELIVERY TERMS IN THE PRESCRIBED EXEL 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.	Establishment of a 500 (or) 250 (or) 100 MW Automatic Solar Photovoltaic (SPV) Module Manufacturing Line on a Turnkey Basis at ITI Limited, Naini, Prayagraj; including a Buy-Back Agreement for the existing 18 MW (Make:Ecoprogetti) Solar Manufacturing Line.	01 Set	Attached	Within 10 months from the date of issuance of the LC.

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 term**

Note:

- All the LC related charges have to be borne by the party.
- All the 3 LCs (50%, 40% & 10%) would be opened together in one go.
- 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. **The price bid must explicitly include a buy-back value for the 18 MW Ecoprogetti SPV line.**

   This buy-back price will be factored into the commercial evaluation to determine the total project cost.

9. **Batch no. should be indicated on component, packet & delivery challan.**
10. **Test Certificate / Checklist should accompany each supply.**
11. **Goods will not be accepted if above instructions are not followed.**
12. **Tech. leaflet/ordering information should be enclosed with quotations.**
13. **No conditional offer is acceptable.**
14. **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.**
15. **SD/PBG shall be liable to be forfeited, if Vendor fails to execute the PO.**
16. **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**
17. **For any clarification, e-mail to enqcellx_nni@itiltd.co.in, Phone No: 0532 -2687379, Mob.7007462166/7053714146.**
18. The reverse auction will be applicable 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. You may be present at the time of tender opening.
19. **Reverse Auction**
    - **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 incompliance with ISO 14001 requirement.
Please visit our web-site: http://www.itiltd.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** *	NPC6E0001
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	NPC6E0001	**NIT**	Word/excel	

(D) **Work / Item Details**:

1	**Work / Item Title** *	Establishment of a 500 (or) 250 (or) 100 MW Automatic Solar Photovoltaic (SPV) Module Manufacturing Line on a Turnkey Basis at ITI Limited, Naini, Prayagraj; including a Buy-Back Agreement for the existing 18 MW (Make:Ecoprogetti) Solar Manufacturing Line.
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)	N/A
7	**Bid Validity days** * (120 / 90 / 60 /30) If other, specify	120 days

8	**Calendar Completion / Delivery Period in Days**	10 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. ITI Ltd, Naini Unit, Mirzapur Road, Naini, Allahabad
11a	**Pre Bid Meeting Place** *	
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)	Fixed
2(b)	If EMD Fee is Fixed then EMD Amount (In INR): If EMD Fee is Percentage then EMD Percentage %	1.00 Cr. NA
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**:

Sl No		**Dates (DD/MM/YY)**	
1	Publishing Date	14.03.2026	17:00
2	Document Sale / **Download** Start Date		
3	Document Sale / **Download** End Date	04.04.2026	11:00
4	Seek Clarification Start Date	---	
5	Seek Clarification End Date	---	
6	Pre Bid Meeting Date	---	
7	Bid Submission Start Date	14.03.2026	17:00
8	Bid Submission End Date	04.04.2026	11:00
9	Bid Opening Date	04.04.2026	11:30

(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_xxxxx / Tender_xxxxx / BOQ_xxxxx / Addl_xxxxx, where xxxxx is 'Actual file name'

Prepared by: AM (IMM)
(Mobile.) **7007462166/7053714146**

Approved by: CM (Services, AM & IMM)
(Phone No.) **0532-2687379**

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

BID DETAILS

Enquiry No.: NPC6E0001

Dated: 14th , March, 2026

ITI Limited invites Tender for "Establishment of a 500 (or) 250 (or) 100 MW Automatic Solar Photovoltaic (SPV) Module Manufacturing Line on a Turnkey Basis at ITI Limited, Naini, Prayagraj; including a Buy-Back Agreement for the existing 18 MW (Make:Ecoprogetti) Solar Manufacturing Line"

Scope of Work	Establishment of a 500 (or) 250 (or) 100 MW Automatic Solar Photovoltaic (SPV) Module Manufacturing Line on a Turnkey Basis at ITI Limited, Naini, Prayagraj; including a Buy-Back Agreement for the existing 18 MW (Make:Ecoprogetti) Solar Manufacturing Line.
Estimated Tender Cost (in Cr)	N/A
Tender Document Cost	Rs. 20000/- To be paid through online modes i.e. Internet Payment Gateway, Net Banking, etc. in the ITI's Bank account.
Earnest Money Deposit	Rs. 1.0 Cr The Earnest Money Deposit (EMD) shall be paid via Internet Payment Gateway (IPG), Demand Draft, Bank Guarantee, or any other valid legal instrument issued by a Nationalized or Scheduled Commercial Bank.

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

Note: All MSMEs notified as per GFR 2017 clause no. 1.10.4 shall be exempted from payment of Tender Document Fee and Bid Security/ Earnest Money Deposit. For claiming this exemption, MSME must, along with their offer, provide proof of their being registered as MSME (indicating the terminal validity date of their registration) for the item tendered, with any agency mentioned in the notification of Ministry of MSME.

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 FDR or Bank Guarantee from any Nationalized/ Scheduled Commercial Bank. The BG/FDR is to be made in favor of ITI Limited, Naini & validity should be 180 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: All MSMEs notified as per GFR 2017 clause no. 1.10.4 shall be exempted from payment of Tender Document Fee and Bid Security/ Earnest Money Deposit. For claiming this exemption, MSME must, along with their offer, provide proof of their being registered as MSME (indicating the terminal validity date of their registration) for the item tendered, with any agency mentioned in the notification of Ministry of MSME.

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:-

   Applicable for Part A/B/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 /250/100 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 7 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 100MW.

or

- Two similar completed works of capacity not less than or equal to 125MW.

or

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

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.

In case of any clarifications on this notification and technical requirement, please contact –

Asst. Manager – Production & Business Development

ITI Limited, Naini Mirzapur Road, Naini, Prayagraj – 211010 (UP) INDIA,

Ph: 6394793179

Email: pradeep_nni@itiltd.co.in

Website: http://www.itiltd.in

EVALUATION CRITERIA

1. BID EVALUATION:

The evaluation process comprises the following two 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.

PRELIMINARY EXAMINATION

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.

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

1.2 EVALUATION OF PRICE BID

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.

Price bids shall be evaluated on DAP ITI Naini basis.

Technical Requirements (PART-A)			
Scope of the work: The scope of this tender is setting up of 500 MW Automatic SPV module manufacturing line (On turnkey basis) including supply, installation and commissioning, process optimization and warranty of 02 years. The scope is including the layout design and required training for running and maintenance of the manufacturing line.			**Bidder Remark**
S. No.	**M/C Description**	**Required Specifications**	
1	Automatic Glass Loading Machine	• Automatic glass loading unit equipped with robotics (6- Axis)/gantry to pick up glass from pallets of various sizes and	
		• Separate bin provided for storing the protective paper removed by the robot/gantry.	
		• Capacity to accommodate a minimum of 2 pallets of glass min. 100 glass/pallet for continuous operation.	
		• Adjustable speed control for the robot (6 axis)/gantry.	
		• Remote assistance facility available.	
		• The robot (6 axis)/gantry should be capable of handling (picking up/dropping) a minimum of 100 glass per hour.	
		• The machine is designed to smoothly handle glass sizes of up to a maximum of 2500 mm x 1400 mm.	
2	Inline EVA Cutting & Laying Machine	• 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 100 EVA pieces per hour.	
		• The machine is designed to smoothly handle EVA sizes of up to a maximum of 2520 mm x 1420 mm.	
3	Buffer	• 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.	
		Note: A buffer should be incorporated at the necessary process step to enable non-stop operation.	
		• Throughput : Cumulative minimum 13200 Half Cut Cells/ Hr	
		• Automatic robot (6 axis)/gantry for accurate cell pickup and placement.	
		• Capable of processing thin PV solar cells (≥ 0.130 mm), such as Mono, Bifacial, PERC, TopCon HJT (upgradable), and other high-efficiency solar cells, without mechanical and thermal stress.	
		• Cell compatibility: 182 - 230 mm	
		• Cell Thickness: 130µm-300µm (typical)	
		• Breakage Rate: ≤ 0.2%	
		• Busbar compatibility: 10 - 22 BB	

4	Tabber Stringer	A Stringer Head is required along with the machine: 2 different types (to be decided by ITI before shipping).	
		• 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 minimum 13200 nos of Half Cut or One Third Solar Cells/Hour.	
		• Flat Ribbon Size Capability: Width - 0.5mm to 1.2mm, Round Wire Size Capability: > ø 0.25mm	
		• Capability to handle round wire and flat ribbon.	
		• Maximum String Length: 2500mm.	
		• Adjustable gap between cell to cell and string to string: 1mm to 1.5 mm (typical)	
		• Number of solar cells per string and other recipe parameters adjustable via touch-screen.	
		• Automatic loading of the cell basket in case of inbuilt NDC laser unit.	
		• Automatic stretching and fluxing of the ribbon before soldering.	
		• Automatic spray fluxing/immersed flux 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 Either in Tabber & Stringer or Layup machine	
5	Layup Station	• Automatic pick up of the strings using ROBOT (6 AXIS)/GANTRY	
		• Throughput of layup station shall match or exceed integrated tabber-stringer.	
		• Vision system with camera for precision alignment & positioning of cell strings on glass.	
		• Clockwise / anticlockwise turning of the strings settable in recipe for half cut and one third cut.	
		• Placing of the strings on the glass with glass Centering.	
		• 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 100 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: Adjustable; Tape width 5 to 10 mm adjustable (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) with/without Flux.	
		• Ribbon processing: L bend, U bend	
		• Cell compatibility: 182 - 230 mm	
		• Busbar compatibility: 10 - 22 BB (All H/W & S/W to be provided along with machine for suitable bus bar from 10 BB to 22 BB)	
		• Should be compatible for Glass-Glass & Glass-Back sheet module	
		• Compatible for Flat Ribbon	
		• Suitable for module with JB at the Centre	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
		• The machine should be capable of handling a minimum of 100 SPV Module per hour.	
8	Inline EVA / Back sheet 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.	
		• Maximum EVA / Backsheet Roll diameter: 450 mm or more. Bigger size is preferred	
		• The machine should be capable of handling (cutting and laying) a minimum of 100 nos EVA & 100 nos Backsheet per hour.	
9	Printing of module detail on labels	• Printing of barcode, make, model & manufacturer logo etc as per BIS requirements on labels of different sizes for placing inside the module before lamination	
10	Inline Automatic IInd Glass Loading Machine (For Glass to Glass Module)	• Automatic glass loading unit equipped with robot (6 axis)/gantry 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 (6 axis)/gantry.	
		• Capacity to accommodate a minimum of 2 pallets of 100 glass for continuous operation.	
		• Adjustable speed control for the robot (6 axis)/gantry.	
		• Remote assistance facility available.	
		• The robot (6 axis)/gantry should be capable of handling (picking up/dropping) a minimum of 100 glass per hour. • The machine is designed to smoothly handle glass sizes of up to a maximum of 2500 mm x 1400 mm.	
11	Automated Optical Inspection (AOI)	• High Resolution camera system for Capturing module image.	
		• No. of Cameras (16MP): 02 (Minimum)	
		• Capable to analyze 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. • Motorized 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	Pre-Electroluminescence (EL) Tester	• Capability to detect Micro-cracks, 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.	
		• 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.	
		• Motorized 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 100 SPV Module per hour.	
13	Automatic G2G Panel Edge Sealing Tape Machine	• 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	• Suitable for Glass-Back sheet, Glass-Glass modules using EVA / POE.	
		• Automatic laminator capable of laminate 100 Nos SPV (SPV Module Size: 2500 mm X 1400 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.	
		• Uniform temperature on the entire lamination chamber. • Automatic release sheet made of Teflon or higher grade material on both module sides during lamination. • Additional 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	Inline Auto Trimming	• 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 100 SPV Module per hour.	

16	Framing Station	Framing Station should consist of Automatic Sealant Dispensing Station with Automatic Framing Machine. • Suitable for Glass-Back sheet, Glass-Glass modules	
		• Automatic Robot (6 axis)/gantry should pick the frames from the Silicon dispensing machine and place it on the framing machine.	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
		• The machine should be capable of handling a minimum of 100 SPV Module per hour.	
17	Module Cleaning Machine	• To clean the glass & Aluminium frame after curing of the modules.	
		• Provision for collecting waste material after module Cleaning.	
		• Module Orientation: Short/Long Side Leading	
18	Inline Potting System	• 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	
		• The machine should be capable of dispensing a minimum of 300 Junction box per hour.	
19	Curing Station	• 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.	
20	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	
21	Sun Simulator	• Light Source: LED	
		• Class A+A+A+ or Better.	
		• Suitable for module with cells: Mono, Poly, Mono PERC, Topcon, Mono Bifacial, Back Contact, Thin Film & HJT.	
		• Range of intensity : 200 W/m² – 1200W/m²	
		• Provision shall be made for measurement of power of module at different level of intensity range.	
		• Irradiance measurement by pyranometer/ equivalent device.	
		• Temperature Sensors to measure the module and the environment temperature.	
		• Max. Module size: 2500 mm X 1400 mm.	
		• LED source life time more than 12 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 100 SPV Module per hour.	
		• Capability to detect Micro-cracks, 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.	

22	Post Electroluminescence (EL) Tester	• 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.	
		• 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.	
		• Motorized 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 100 SPV Module per hour.	
23	Hi-Pot Tester	• Complies with IEC 61730 standards (Latest Version)	
		• IR : up to 1500V	
		• Motorized Loading & Unloading with Auto Contact for testing	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
24	Module Back Label printing Machine	The machine should be capable of printing minimum of 100 Nos Back Label per hour as per the Sun Simulator data • Should be able to support different label sizes	
		• Remote assistance facility	
25	Module Sorter	• automatic Module Sorter Machine With 6 Axis Robot (6 axis)/gantry System.	
		• Separation of modules based on the sun simulator Data & classification.	
		• To segregate the modules in 5 different bins.	
		• Adjustable Speed control.	
		• Remote assistance facility.	
26	Back sheet 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	
27	90 deg & 180 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	
28	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	
29	Transport system with Direction Changer	• 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	

30	NDC Solar cell scribing and Separating machine (in case of separate machine)	• Total Speed of Solar cell scribing & Separating machine >15000 Half Cells/Hour • Automatic separation of Scribed solar cells • Cell Size: 182 –230 mm • Scribing Accuracy: ≤ ±0.1 mm • Scribing width : < 0.05 mm • Cutting thickness: 0.15-0.2mm • Defect Rate: ≤0.05% • 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	
31	Soldering Station	• 06 nos. for manual string repair	
32	LIST OF TROLLEYS & CARTS	• Glass Handling trolley (capacity minimum 200 glasses)-2 Nos. • Cell Handling trolley/Cart- 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.	
33	JB placing & Soldering Station	• JB placing & soldering station to be provided consisting of temperature controlled Soldering Irons along with accessories.	

Technical Requirements (PART-B)			
Scope of the work: Setting up of 250MW Automatic Solar Photovoltaic (SPV) Module Manufacturing line which is upgradable up to 500MW Line (On Turnkey Basis) at ITI Limited, NAINI, Prayagraj. 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. The scope is including the layout design and required training for running and maintenance of the manufacturing line.			**Bidder Remark**
S. No.	**M/C Description**	**Required Specifications**	
1	Automatic Glass Loading Machine	• Automatic glass loading unit equipped with robotics (6- Axis)/gantry to pick up glass from pallets of various sizes and	
		• Separate bin provided for storing the protective paper removed by the robot/gantry.	
		• Capacity to accommodate a minimum of 2 pallets of glass min. 50 glass/pallet for continuous operation.	
		• Adjustable speed control for the robot (6 axis)/gantry.	
		• Remote assistance facility available.	
		• The robot (6 axis)/gantry should be capable of handling (picking up/dropping) a minimum of 50 glass per hour.	
		• The machine is designed to smoothly handle glass sizes of up to a maximum of 2500 mm x 1400 mm.	
2	Inline EVA Cutting & Laying Machine	• 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 50 EVA pieces per hour.	
		• The machine is designed to smoothly handle EVA sizes of up to a maximum of 2520 mm x 1420 mm.	
3	Buffer	• Capacity to store up to 50 laminates.	
		• Equipped with an automatic piece counter.	
		• Ensures smooth movement of laminates/modules.	
		• Module orientation: Short/Long side leading.	
		• Remote assistance facility available.	
		Note: A buffer should be incorporated at the necessary process step to enable non-stop operation.	
		• Throughput : Cumulative minimum 6600 Half Cut Cells/ Hr	
		• Automatic robot (6 axis)/gantry for accurate cell pickup and placement.	
		• Capable of processing thin PV solar cells (≥ 0.130 mm), such as Mono, Bifacial, PERC, TopCon HJT (upgradable), and other high-efficiency solar cells, without mechanical and thermal stress.	
		• Cell compatibility: 182 - 230 mm	
		• Cell Thickness: 130µm-300µm (typical)	
		• Breakage Rate: ≤ 0.2%	

4	Tabber Stringer	• Busbar compatibility: 10 - 22 BB	
		A Stringer Head is required along with the machine: 2 different types (to be decided by ITI before shipping).	
		• 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 minimum 6600 nos of Half Cut or One Third Solar Cells/Hour.	
		• Flat Ribbon Size Capability: Width - 0.5mm to 1.2mm, Round Wire Size Capability: > ø 0.25mm	
		• Capability to handle round wire and flat ribbon.	
		• Maximum String Length: 2500mm.	
		• Adjustable gap between cell to cell and string to string: 1mm to 1.5 mm (typical)	
		• Number of solar cells per string and other recipe parameters adjustable via touch-screen.	
		• Automatic loading of the cell basket in case of inbuilt NDC laser unit.	
		• Automatic stretching and fluxing of the ribbon before soldering.	
		• Automatic spray fluxing/immersed flux 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 Either in Tabber & Stringer or Layup machine.	
5	Layup Station	• Automatic pick up of the strings using ROBOT (6 AXIS)/GANTRY	
		• Throughput of layup station shall match or exceed integrated tabber-stringer.	
		• Vision system with camera for precision alignment & positioning of cell strings on glass.	
		• Clockwise / anticlockwise turning of the strings settable in recipe for half cut and one third cut.	
		• Placing of the strings on the glass with glass Centering.	
		• 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 50 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: Adjustable; Tape width 5 to 10 mm adjustable (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) with/without Flux.	
		• Ribbon processing: L bend, U bend	
		• Cell compatibility: 182 - 230 mm	
		• Busbar compatibility: 10 - 22 BB (All H/W & S/W to be provided along with machine for suitable bus bar from 10 BB to 22 BB)	
		• Should be compatible for Glass-Glass & Glass-Back sheet module	
		• Compatible for Flat Ribbon	
		• Suitable for module with JB at the Centre	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
		• The machine should be capable of handling a minimum of 50 SPV Module per hour.	
8	Inline EVA / Back sheet 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.	
		• Maximum EVA / Backsheet Roll diameter: 450 mm or more. Bigger size is preferred	
		• The machine should be capable of handling (cutting and laying) a minimum of 50 nos EVA & 50 nos Backsheet per hour.	
9	Printing of module detail on labels	• Printing of barcode, make, model & manufacturer logo etc as per BIS requirements on labels of different sizes for placing inside the module before lamination	
10	Inline Automatic IInd Glass Loading Machine (For Glass to Glass Module)	• Automatic glass loading unit equipped with robot (6 axis)/gantry 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 (6 axis)/gantry.	
		• Capacity to accommodate a minimum of 1 pallets of 50 glass for continuous operation.	
		• Adjustable speed control for the robot (6 axis)/gantry.	
		• Remote assistance facility available.	
		• The robot (6 axis)/gantry should be capable of handling (picking up/dropping) a minimum of 50 glass per hour. • The machine is designed to smoothly handle glass sizes of up to a maximum of 2500 mm x 1400 mm.	
		• High Resolution camera system for Capturing module image.	

11	Automated Optical Inspection (AOI)	• No. of Cameras (16MP): 02 (Minimum)	
		• Capable to analyze 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. • Motorized 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	Pre-Electroluminescence (EL) Tester	• Capability to detect Micro-cracks, 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.	
		• 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.	
		• Motorized 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 50 SPV Module per hour.	
13	Automatic G2G Panel Edge Sealing Tape Machine	• 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.	
		• Suitable for Glass-Back sheet, Glass-Glass modules using EVA / POE.	
		• Automatic laminator capable of laminate 50 Nos SPV (SPV Module Size: 2500 mm X 1400 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.	

14	Fully Automatic Laminator with Loading belt & Unloading Belt	• Uniform temperature on the entire lamination chamber. • Automatic release sheet made of Teflon or higher grade material on both module sides during lamination. • Additional 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	Inline Auto Trimming	• 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 50 SPV Module per hour.	
16	Framing Station	Framing Station should consist of Automatic Sealant Dispensing Station with Automatic Framing Machine. • Suitable for Glass-Back sheet, Glass-Glass modules	
		• Automatic Robot (6 axis)/gantry should pick the frames from the Silicon dispensing machine and place it on the framing machine.	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
		• The machine should be capable of handling a minimum of 50 SPV Module per hour.	
17	Module Cleaning Machine	• To clean the glass & Aluminium frame after curing of the modules.	
		• Provision for collecting waste material after module Cleaning.	
		• Module Orientation: Short/Long Side Leading	
18	Inline Potting System	• 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	
		• The machine should be capable of dispensing a minimum of 150 Junction box per hour.	
19	Curing Station	• 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.	
20	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	
		• Light Source: LED	
		• Class A+A+A+ or Better.	

21	Sun Simulator	• Suitable for module with cells: Mono, Poly, Mono PERC, Topcon, Mono Bifacial, Back Contact, Thin Film & HJT.	
		• Range of intensity : 200 W/m² – 1200W/m²	
		• Provision shall be made for measurement of power of module at different level of intensity range.	
		• Irradiance measurement by pyranometer/ equivalent device.	
		• Temperature Sensors to measure the module and the environment temperature.	
		• Max. Module size: 2500 mm X 1400 mm.	
		• LED source life time more than 12 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 50 SPV Module per hour.	
22	Post Electroluminescence (EL) Tester	• Capability to detect Micro-cracks, 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.	
		• Motorized 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 50 SPV Module per hour.	
23	Hi-Pot Tester	• Complies with IEC 61730 standards (Latest Version)	
		• IR : up to 1500V	
		• Motorized Loading & Unloading with Auto Contact for testing	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	

24	Module Back Label printing Machine	The machine should be capable of printing minimum of 50 Nos Back Label per hour as per the Sun Simulator data • Should be able to support different label sizes	
		• Remote assistance facility	
25	Module Sorter	• automatic Module Sorter Machine With 6 Axis Robot (6 axis)/gantry System.	
		• Separation of modules based on the sun simulator Data & classification.	
		• To segregate the modules in 5 different bins.	
		• Adjustable Speed control.	
		• Remote assistance facility.	
26	Back sheet 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	
27	90 deg & 180 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	
28	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	
29	Transport system with Direction Changer	• 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	
30	NDC Solar cell scribing and Separating machine (in case of separate machine)	• Total Speed of Solar cell scribing & Separating machine >7500 Half Cells/Hour • Automatic separation of Scribed solar cells • Cell Size: 182 –230 mm • Scribing Accuracy: ≤ ±0.1 mm • Scribing width : < 0.05 mm • Cutting thickness: 0.15-0.2mm • Defect Rate: ≤0.05% • 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	
31	Soldering Station	• 06 nos. for manual string repair	

32	LIST OF TROLLEYS & CARTS	• Glass Handling trolley (capacity minimum 50 glasses)-2 Nos. • Cell Handling trolley/Cart- 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.	
33	JB placing & Soldering Station	• JB placing & soldering station to be provided consisting of temperature controlled Soldering Irons along with accessories.	

Technical Requirements (PART-C)			
Scope of the work: Setting up of 100MW Automatic Solar Photovoltaic (SPV) Module Manufacturing line which is upgradable up to 250MW Line (On Turnkey Basis) at ITI Limited, NAINI, Prayagraj. 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. The scope is including the layout design and required training for running and maintenance of the manufacturing line.			**Bidder Remark**
S. No.	**M/C Description**	**Required Specifications**	
1	Automatic Glass Loading Machine	• Automatic glass loading unit equipped with robotics (6- Axis)/gantry to pick up glass from pallets of various sizes and	
		• Separate bin provided for storing the protective paper removed by the robot/gantry.	
		• Capacity to accommodate a minimum of 2 pallets of glass min. 20 glass/pallet for continuous operation.	
		• Adjustable speed control for the robot (6 axis)/gantry.	
		• Remote assistance facility available.	
		• The robot (6 axis)/gantry should be capable of handling (picking up/dropping) a minimum of 20 glass per hour.	
		• The machine is designed to smoothly handle glass sizes of up to a maximum of 2500 mm x 1400 mm.	
2	Inline EVA Cutting & Laying Machine	• 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 20 EVA pieces per hour.	
		• The machine is designed to smoothly handle EVA sizes of up to a maximum of 2520 mm x 1420 mm.	
3	Buffer	• Capacity to store up to 20 laminates.	
		• Equipped with an automatic piece counter.	
		• Ensures smooth movement of laminates/modules.	
		• Module orientation: Short/Long side leading.	
		• Remote assistance facility available.	
		Note: A buffer should be incorporated at the necessary process step to enable non-stop operation.	
		• Throughput : Cumulative minimum 3000 Half Cut Cells/ Hr	
		• Automatic robot (6 axis)/gantry for accurate cell pickup and placement.	
		• Capable of processing thin PV solar cells (≥ 0.130 mm), such as Mono, Bifacial, PERC, TopCon HJT (upgradable), and other high-efficiency solar cells, without mechanical and thermal stress.	
		• Cell compatibility: 182 - 230 mm	
		• Cell Thickness: 130µm-300µm (typical)	
		• Breakage Rate: ≤ 0.2%	

4	Tabber Stringer	• Busbar compatibility: 10 - 22 BB	
		A Stringer Head is required along with the machine: 2 different types (to be decided by ITI before shipping).	
		• 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 minimum 3000 nos of Half Cut or One Third Solar Cells/Hour.	
		• Flat Ribbon Size Capability: Width - 0.5mm to 1.2mm, Round Wire Size Capability: > ø 0.25mm	
		• Capability to handle round wire and flat ribbon.	
		• Maximum String Length: 2500mm.	
		• Adjustable gap between cell to cell and string to string: 1mm to 1.5 mm (typical)	
		• Number of solar cells per string and other recipe parameters adjustable via touch-screen.	
		• Automatic loading of the cell basket in case of inbuilt NDC laser unit.	
		• Automatic stretching and fluxing of the ribbon before soldering.	
		• Automatic spray fluxing/immersed flux 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 Either in Tabber & Stringer or Layup machine.	
5	Layup Station	• Automatic pick up of the strings using ROBOT (6 AXIS)/GANTRY	
		• Throughput of layup station shall match or exceed integrated tabber-stringer.	
		• Vision system with camera for precision alignment & positioning of cell strings on glass.	
		• Clockwise / anticlockwise turning of the strings settable in recipe for half cut and one third cut.	
		• Placing of the strings on the glass with glass Centering.	
		• 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 20 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: Adjustable; Tape width 5 to 10 mm adjustable (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) with/without Flux.	
		• Ribbon processing: L bend, U bend	
		• Cell compatibility: 182 - 230 mm	
		• Busbar compatibility: 10 - 22 BB (All H/W & S/W to be provided along with machine for suitable bus bar from 10 BB to 22 BB)	
		• Should be compatible for Glass-Glass & Glass-Back sheet module	
		• Compatible for Flat Ribbon	
		• Suitable for module with JB at the Centre	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
		• The machine should be capable of handling a minimum of 20 SPV Module per hour.	
8	Inline EVA / Back sheet 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.	
		• Maximum EVA / Backsheet Roll diameter: 450 mm or more. Bigger size is preferred	
		• The machine should be capable of handling (cutting and laying) a minimum of 20 nos EVA & 20 nos Backsheet per hour.	
9	Printing of module detail on labels	• Printing of barcode, make, model & manufacturer logo etc as per BIS requirements on labels of different sizes for placing inside the module before lamination	
10	Inline Automatic IInd Glass Loading Machine (For Glass to Glass Module)	• Automatic glass loading unit equipped with robot (6 axis)/gantry 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 (6 axis)/gantry.	
		• Capacity to accommodate a minimum of 1 pallets of 20 glass for continuous operation.	
		• Adjustable speed control for the robot (6 axis)/gantry.	
		• Remote assistance facility available.	
		• The robot (6 axis)/gantry should be capable of handling (picking up/dropping) a minimum of 20 glass per hour. • The machine is designed to smoothly handle glass sizes of up to a maximum of 2500 mm x 1400 mm.	
		• High Resolution camera system for Capturing module image.	

11	Automated Optical Inspection (AOI)	• No. of Cameras (16MP): 02 (Minimum)	
		• Capable to analyze 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. • Motorized 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	Pre-Electroluminescence (EL) Tester	• Capability to detect Micro-cracks, 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.	
		• 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.	
		• Motorized 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 20 SPV Module per hour.	
13	Automatic G2G Panel Edge Sealing Tape Machine	• 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.	
		• Suitable for Glass-Back sheet, Glass-Glass modules using EVA / POE.	
		• Automatic laminator capable of laminate 20 Nos SPV (SPV Module Size: 2500 mm X 1400 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.	

14	Fully Automatic Laminator with Loading belt & Unloading Belt	• Uniform temperature on the entire lamination chamber. • Automatic release sheet made of Teflon or higher grade material on both module sides during lamination. • Additional 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	Inline Auto Trimming	• 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 20 SPV Module per hour.	
16	Framing Station	Framing Station should consist of Automatic Sealant Dispensing Station with Automatic Framing Machine. • Suitable for Glass-Back sheet, Glass-Glass modules	
		• Automatic Robot (6 axis)/gantry should pick the frames from the Silicon dispensing machine and place it on the framing machine.	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	
		• The machine should be capable of handling a minimum of 20 SPV Module per hour.	
17	Module Cleaning Machine	• To clean the glass & Aluminium frame after curing of the modules.	
		• Provision for collecting waste material after module Cleaning.	
		• Module Orientation: Short/Long Side Leading	
18	Inline Potting System	• 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	
		• The machine should be capable of dispensing a minimum of 60 Junction box per hour.	
19	Curing Station	• 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.	
20	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	
		• Light Source: LED	
		• Class A+A+A+ or Better.	

21	Sun Simulator	• Suitable for module with cells: Mono, Poly, Mono PERC, Topcon, Mono Bifacial, Back Contact, Thin Film & HJT.	
		• Range of intensity : 200 W/m² – 1200W/m²	
		• Provision shall be made for measurement of power of module at different level of intensity range.	
		• Irradiance measurement by pyranometer/ equivalent device.	
		• Temperature Sensors to measure the module and the environment temperature.	
		• Max. Module size: 2500 mm X 1400 mm.	
		• LED source life time more than 12 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 20 SPV Module per hour.	
22	Post Electroluminescence (EL) Tester	• Capability to detect Micro-cracks, 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.	
		• Motorized 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 20 SPV Module per hour.	
23	Hi-Pot Tester	• Complies with IEC 61730 standards (Latest Version)	
		• IR : up to 1500V	
		• Motorized Loading & Unloading with Auto Contact for testing	
		• Module Orientation: Short/Long Side Leading	
		• Remote assistance facility	

24	Module Back Label printing Machine	The machine should be capable of printing minimum of 20 Nos Back Label per hour as per the Sun Simulator data • Should be able to support different label sizes	
		• Remote assistance facility	
25	Module Sorter	• automatic Module Sorter Machine With 6 Axis Robot (6 axis)/gantry System.	
		• Separation of modules based on the sun simulator Data & classification.	
		• To segregate the modules in 5 different bins.	
		• Adjustable Speed control.	
		• Remote assistance facility.	
26	Back sheet 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	
27	90 deg & 180 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	
28	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	
29	Transport system with Direction Changer	• 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	
30	NDC Solar cell scribing and Separating machine (in case of separate machine)	• Total Speed of Solar cell scribing & Separating machine >3000 Half Cells/Hour • Automatic separation of Scribed solar cells • Cell Size: 182 –230 mm • Scribing Accuracy: ≤ ±0.1 mm • Scribing width : < 0.05 mm • Cutting thickness: 0.15-0.2mm • Defect Rate: ≤0.05% • 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	
31	Soldering Station	• 06 nos. for manual string repair	

32	LIST OF TROLLEYS & CARTS	• Glass Handling trolley (capacity minimum 20 glasses)-2 Nos. • Cell Handling trolley/Cart- 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.	
33	JB placing & Soldering Station	• JB placing & soldering station to be provided consisting of temperature controlled Soldering Irons along with accessories.	

General Terms & Conditions for Part-A, Part-B & Part-C

1. Project description:

Part-A: Setting up of 500MW 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 2 years. The scope is including the layout design and required training for running and maintenance of the line.

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

Part-C: Setting up of 100MW Automatic Solar Photovoltaic (SPV) Module Manufacturing line which is upgradable up to 250MW Line (On Turnkey Basis) at ITI Limited, NAINI, Prayagraj. 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.

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 1400 mm smoothly, using cells with a maximum size of 210 mm x 210 mm (up to 22 busbars).

3. Trial Run of the Line: The bidder will conduct a trial run of the line and manufacture a minimum of 210 KW for 500MW SPV line and/or 175KW for 250MW SPV line and/or 105 KW for 100MW SPV line. The SPV panel will be of 700Wp. (Arrangement of all the certified raw materials will be in the scope of bidder). The manufactured SPV modules during the trial run will remain the sole property of ITI. Bidder will provide BOM, technical data sheet along with test report from reputed test lab of all the raw material.

The throughput will be assessed during two operations (one each for G-to-G and G-to-B SPV Modules). Tentatively 50% each of the trial run will be on G-to-G & G-to-B or as decided mutually later on. SPV Panel manufactured during optimization/adjustment etc. will not be considered for assessing the throughput of the machine.

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 one (01) 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 The breakage of Solar Cell must be less than 0.2% from over all the line.

5.2 Following process parameters should be demonstrated:

5.2.1 Gel content >=80%
5.2.2 Ribbon Peel Strength > = 2N(Front Side)
5.2.3 EVA to Glass peel strength >=16N/CM
5.2.4 EVA to Backsheet Peel Strength >=40N/CM.
5.2.5 The manufactured SPV modules will be tested according to the parameters specified in clauses 5.4.1 to 5.4.4 and the STC standard at a test Lab.

6. Project Time Line: The timeline for completing the entire scope of work is 10 months from the date of issuance of the LC.

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 proper functioning of the line shall be supplied free of 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 Module:

Bidder shall provide 01 nos of Golden Module of tentatively 680Wp along with test lab certificate, however bidder to confirm with ITI any change in wattage of the Golden Module before manufacturing/testing/ dispatch.

9. Liability and Insurances:

9.1 All the supply mentioned required under this NIT shall be insured up to delivery & installation commissioning. 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. up to 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 clearance, if any is the part of basic price. Company will not pay more than the basic price except GST Charges, custom duty and demurrage charges, if any.

11. Pre Dispatch Inspections: Pre Dispatch Inspection of module manufacturing equipment's will be done by ITI/ITI's representative at single 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 minimum of three (03) ITI officials for minimum of 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 shall give comprehensive Guarantee/Warranty for a period of 24 months for complete manufacturing line from the date of successful installation & commissioning of the line (this includes standard warranty period of the manufacturing 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.

Bidder will also undertake for after sales support for supplied item post warranty period, indicated above, for the next 3 years after the 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: Available area for line installation is approx. 5000 Sqm.

15. Compliance Statement:

Bidder has to submit compliance statement of technical requirement including General Terms & Condition. Bidder has to submit technical catalogue of all offered machines along with the technical bid.

The bidder must specify the utility requirements in the technical bid, including the capacity of the compressor, the UPS with the battery bank, and the air conditioning system. The arrangement and installation & commissioning (I&C) of all utilities, including the UPS, compressor, air conditioning system, and pneumatic pipeline, will be the responsibility of ITI.

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 manufacturer (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/DVD/Pen drive/SD memory 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. Rework Station: Rework loop to be provided after EL and before lamination. Rework station is consisting of buffer, conveyers, manual glass lifter along with accessories for manual repairing of the string & cells.
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. The bidder shall provide full support to ITI for the electrical wiring/work of all the equipment/machines supplied by the bidder. The cost of the electrical wiring/work shall be borne by ITI Limited, Naini.
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. Persons deployed by the bidder for I & C of the manufacturing line must follow safety & statutory regulations. ITI will not be responsible for any untoward incident resulting out of laxity on part of bidder or by person deployed for the work.

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.

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-VIII)

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

18. **Liquidated Damages Clause:**

Time shall be the essence of the contract. The materials against an order arising out of this enquiry must be delivered by the supplier in accordance with the delivery schedule indicated in the Purchase Order (P.O.). In case of any change, the supplier shall inform us in advance and obtain our approval for the revised delivery schedule. Should the supplier fail to deliver the materials or any 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 the first four weeks and 0.7% per week thereafter, subject to a maximum of 10% of the value of the non-executed part of the Work Order for such delay or part thereof, or to terminate the contract in respect of the balance supply so delayed and purchase the 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 initiate for in response to a clarification requested by a prospected 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:

The bidder offering the lowest net price (Quoted Price minus Buy-Back Value of the existing setup) shall be declared the L1 bidder for each part independently (Part A, B, and C). The Financial Bid format is enclosed for reference. ITI reserves the sole discretion to award procurement for Part A, B, or C, and the successful bidder shall have no claim regarding the selection or volume of parts awarded.

FORCE MAJEURE:

Neither party shall bear responsibility for the complete or partial nonperformance of any of its obligations, if the non-performance results from such Force Majeure circumstances i.e. Flood, Fire, Earth Quake, Epidemic and other acts of God as well as War, Military Operation, Blockade, Act or Actions of State Authorities that have arisen after signing of the present contract. Party invoking this clause shall serve notice of seven days along with the proof of occurrence of the force majeure event to the opposite party. At the time of cessation of such force majeure event a notice of the same shall also be served to the opposite party.

In such circumstances, upon a written approval of ITI, the time stipulated for the performance of an obligation under the present contract will stand extended correspondingly for the period of time of action of these circumstances and their consequences. However, any such extension shall be given only if extension is granted by the ultimate buyer/ user.

Parties at all times take reasonable steps within their respective powers and consistent with good operation practices (but without incurring un reasonable additional costs) to:
a) Prevent Force Majeure Events affecting the performance of the Company's obligations under this agreement;
b) Mitigate the affect of any Force Majeure Event; and
c) Comply with its obligations under this agreement.

Further if the period of Force Majeure event extends beyond three months* the parties may consider the foreclosure of the agreement. * Period of three months may vary at the discretion of ITI as per the validity period of the contract.

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 Tile:
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 understood 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

Annexure-II

Bidders Profile

Sl. No.	Profile	Details		
1	Name and address of Company			
2	Type of company			
3	Contact Details of the Bidder (Contact person name with designation, Telephone Number, FAX, E- mail and Web site)			
4	Annual Turnover for 3 financial years (Rs in Cr)	FY 2022-23	FY2023-24	FY2024-25
5	Date of Incorporation			
6	GST Registration number			
7	PAN Number			
8	CIN Number			

Annexure-III

Tender ACCEPTANCE LETTER
(To be given on Company Letter Head)

Date:

To,

----------.

----------.

Subject: Acceptance of Terms & Conditions of Tender.

Tender Reference No: _____

Name of Work: _____

Dear Sir,

I (Name) ----------have received the Tender reference no ---------- ---------- for mentioned work from the website.

I hereby certify that I have read the entire terms and conditions of the Tender documents from Page No….to ……. (Including all documents like annexure(s), schedule(s), amendments and reference Tender etc.) which form part of the contract agreement and I shall abide here by the terms/conditions/clauses contained therein.

The corrigendum(s) issued from time to time by your department/organization too has also been taken into consideration, while submitting this acceptance letter.

I hereby unconditionally accept the Tender conditions of above mentioned tender document(s)/corrigendum(s) in its totality/entirety.

I hereby unconditionally accept all the Tender conditions of ITI in its totality/ entirety.

In the event that any provisions of this Tender are found to be violated, ITI Limited shall, without prejudice to any other right or remedy, be at liberty to reject the bid and forfeit the full Earnest Money Deposit (EMD) absolutely

Yours Faithfully,

(Signature, Date & Seal of Authorized Signatory of the Bidder)

Annexure –IV

DECLARATION BY AUTHORISED SIGNATORY OF BIDDER

Date:

To,

---------------.

---------------.

Sub: Declaration by Authorized Signatory

Tender Reference No: _____

Name of Work: _____

I/We hereby certify that all the information and data furnished by me with regard to the above tender Specification are true and complete to the best of my knowledge. I have gone through the specifications, condition, stipulations and other pertinent issues till date, and agree to comply with the requirements and Intent of the specification.

I further certify that I am authorized to represent on behalf of my company/firm for the above-mentioned tender and a valid Power of Attorney/Authorization letter to this effect is also enclosed.

Yours faithfully,

(Signature, Date & Seal of Authorized Signatory of the Bidder)

Enclosed: Power of Attorney/Authorization letter

Annexure –V

Declaration for non-blacklisting

(TO BE TYPED ON LETTER HEAD OF THE COMPANY/ FIRM)

Date:

To,

---------------.

---------------.

Sub: Declaration for non-blacklisting

Tender Reference No: _____

Name of tender/Work: _____

Dear Sir,

1. We have carefully read and understood all the terms and conditions of the tender and hereby convey our acceptance to the same.
2. The information / documents furnished along with the above offer are true and authentic to the best of my knowledge and belief. We are well aware of the fact that furnishing of any false information / fabricated document would lead to rejection of our tender at any stage besides liabilities towards prosecution under appropriate law.
3. We have apprised our self fully about the job to be done during the currency of the period of agreement and also acknowledge bearing consequences to of non-performance or deficiencies in the services on our part.
4. We have no objection, if enquiries are made about the work listed by us.
5. We have not been blacklisted by ITI or any other organization where we have worked.

Further, if any of the partners/directors of the organization /firm is blacklisted or having any criminal case against them, our bid shall not be considered. At any later point of time, if this information is found to be false, ITI may terminate the assigned contract immediately.

6. We have not been found guilty by a court of law in India for fraud, dishonesty or moral turpitude.
7. We agree that the decision of ITI in selection of Bidders will be final and binding to us.

Date:

Place: Signature of authorized person

Full Name & Designation:

Company's Seal:

N.B: The above declaration, duly signed and sealed by the authorized signatory of the company, should be enclosed with Technical Bid.

Annexure –VI

Declaration for Willingness to submit Performance Bank Guarantee (PBG)
(TO BE TYPED ON LETTER HEAD OF THE COMPANY/ FIRM)

Date:

To,

---------- .
---------- .
---------- .

Sub: Declaration for Willingness to submit Performance Bank Guarantee (PBG)

Tender Reference No: _____

Name of tender/Work: _____

Dear Sir,

I/We hereby declare that M/s..... Address .....will submit the required PBG amount at the time of Selection.

Date:

Place: Signature of authorized person

Full Name & Designation:

Company's Seal:

N.B: The above declaration, duly signed and sealed by the authorized signatory of the company, should be enclosed with Technical Bid.

Annexure –VII

Tender ACCEPTANCE LETTER
(To be given on Company Letter Head)

Date:

To,

Subject: Acceptance of Terms & Conditions of Tender

Tender Reference No: _____

Name of tender/Work:_____

Dear Sir,

I (Name) ---------- have received the Tender reference no---------- for mentioned work from the website/email.

I hereby certify that I have read the entire terms and conditions of the tender documents from Page No. _____ to _____ (including all documents like annexure(s), schedule(s), amendments and reference Tender etc.) which form part of the contract agreement and I shall abide here by the terms/conditions/ clauses contained therein.

The corrigendum(s) issued from time to time by your department/organization too has also been taken into consideration, while submitting this acceptance letter.

I hereby unconditionally accept the Tender conditions of above mentioned tender document(s)/corrigendum(s) in its totality/entirety.

I hereby unconditionally accept all the Tender conditions of ITI Tender document / corrigendum(s) in its totality/ entirety.

In the event that any provisions of this Tender are found to be violated, ITI Limited shall, without prejudice to any other right or remedy, be at liberty to reject the bid and forfeit the full Earnest Money Deposit (EMD) absolutely.

Yours Faithfully,

(Signature of the Bidder, with Official Seal)

ANNEXURE- VIII

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 on .....day of 2026

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 WITHNESSETH 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 Actor 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 original 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 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 equitant 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 TREATEMENT 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 spy, 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 VIOLATIG 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 extend 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 …….. to .....weeks 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 extent 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

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

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

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

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.

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

……

Name Designation.

Witness:

1. ……..

2. ……..

For BIDDER(S)/CONTRACTOR(S)

……

Name Designation.

1. ……

2. ……

Annexure - IX

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 Establishment of a 500 (or) 250 (or) 100 MW Automatic Solar Photovoltaic (SPV) Module Manufacturing Line on a Turnkey Basis at ITI Limited, Naini, Prayagraj; including a Buy-Back Agreement for the existing 18 MW (Make:Ecoprogetti) Solar Manufacturing Line.

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

This has reference to above referred tender of Establishment of a 500/250/100 MW Automatic Solar Photovoltaic (SPV) Module Manufacturing Line on a Turnkey Basis at ITI Limited, Naini, Prayagraj; including a Buy-Back Agreement for the existing 18 MW (Make:Ecoprogetti) Solar Manufacturing Line.

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) (Signature ITI authorities)

Name of Bidder - Designation

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

Financial Bid

Proforma for quoting the rates

Quotation No. / Date	
TENDER No.	**NPC6E0001**
Name of Work	Establishment of a 500 (or) 250 (or) 100 MW Automatic Solar Photovoltaic (SPV) Module Manufacturing Line on a Turnkey Basis at ITI Limited, Naini, Prayagraj; including a Buy-Back Agreement for the existing 18 MW (Make:Ecoprogetti) Solar Manufacturing Line.
HSN CODE (08 DIGIT)	
Name of the Firm	

Sr. No.	DESCRIPTION OF MATERIAL AND ITI CODE	Unit	Qty. (set.)	Unit Rate	Total Amount	Net Amount
1	500MW manufacturing line setup at ITI Naini (Turnkey Basis)	Set	**1.00**		0	0
2	250MW manufacturing line upgradable to 500MW setup at ITI Naini (Turnkey Basis)	Set	**1.00**		0	0
3	100MW manufacturing line upgradable to 500MW setup at ITI Naini (Turnkey Basis)	Set	**1.00**		0	0
4	Buy Back of 18MW manufacturing line setup at ITI Naini (Make: Ecoprogetti)	Set	**1.00**		0	-
A	**Delivery Schedule**					
B	**Payment Terms**					
C	**Validity of Offer**					
D	**Remark**					
E	**Note**	**Above items evaluated seperately 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 wll be considered at the time of price bid opening.
4) This format is for reference only. The price bid must be submitted using the attached price bid document.

Terms & Conditions:

1. Evaluation: The commercial evaluation will be conducted based on the Net Price (Total Quoted Price minus Buy-Back Value).
2. Part-wise Selection: ITI Limited reserves the right to award Part-A/B/C at its sole discretion.
3. Inclusions: Prices must be inclusive of supply, installation, commissioning, and turnkey responsibilities as per the technical specifications.
4. Buy-Back Execution: The successful bidder is responsible for the decommissioning and removal of the 18 MW Ecoprogetti line at their own cost.