

Telephone Shilpa Sangstha Limited

Tongi, Gazipur
(A State Owned Public Limited Company)

Tender DOCUMENT

FOR

"Supply Installation, Testing and Commissioning of Assembling Plant of Solar Panel as a Comprehensive Package on Turn-key Basis"

GENERAL CONDITIONS OF TENDER AND CONTRACT

TENDER NO. TSS/Solar Panel/2010/10-1

Dated: 01/12/2010



টেলিফোন শিল্প সংস্থা

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**Tender Document for
Supply, Installation, Testing and Commissioning of
Assembling Plant of Solar Panel
as a Comprehensive Package on Turnkey Basis**

Telephone Shilpa Sangstha (TSS), a state owned company, has planned to set up an assembly plant for assembling of Solar Panel for selling in open market and to the power/Telecom utilities viz. BTCL, Teletalk, PDB, REB, DPDC, DESCO, and public/Housing consumers according to their requirements and the approved specifications using state-of-the-art technology with the following equipment, accessories and goods:

1. **Semi-automatic Laminator**
2. **Automatic Laminator**
3. **Laser cutter**
4. **Cell Sorter**
5. **Sun Simulator**
6. **Framing machine**
7. **EVA, TPT Cutting Table**
8. **Cell Welding Table**
9. **Module Transfer Carrier**
10. **Ready Material Carrier**
11. **Assembling Table**
12. **Appearance inspection table**
13. **Trimming Table**
14. **Cleaning Table**
15. **Cell Select Table**
16. **Raw materials (For testing)**

Above plant to be setup to assemble Solar Panel from mono and poly crystal solar cell The proposed equipments to be according to the approved specifications enclosed with this document as Appendix – A. This tender is for Supply, Installation, Testing and Commissioning of Assembling Plant of Solar Panel as a Comprehensive Package on Turnkey Basis including training and technological support and transfer of required knowledge to the working manpower of TSS. A team of TSS will be attached with the supplier's installation team to acquire the knowledge of operation and maintenance till acceptance certificate of the equipment be issued by the representative of TSS after successful completion of the acceptance tests.

For better understanding of the prospective bidders the Tender Document has been divided into the following 6 (Six) Chapter:

- a. Chapter-I: General Information
- b. Chapter-II: Terms and Conditions
- c. Chapter-III: Technical particulars/ Information
- d. Chapter-IV: Price Schedules
- e. Chapter-V: Forms: Annexure – 1 to Annexure – 10

f. Chapter-IV: Appendix – A: Technical Specifications

Chapter – I: General Information:

1. A complete set of Bidding Documents may be purchased from the Cash Section of TSS or from GPO, Room No.7 (1st floor), Dhaka-1000, by any interested eligible bidder or his representative on submission of a written application in their official pad and on payment, in cash, of non-refundable Taka 20,000/- (Taka twenty thousand) only on all working days from the date of publication of this invitation in the national dailies. No tender schedule/ document will be sold on the date of opening of tender. No tender document will be sold by post. Tender Information is also available at TSS web **site: [http:// www.tss.com.bd](http://www.tss.com.bd)**.

2. The Prospective bidders are to submit their offers as the following separate sealed envelopes Supply, Installation, Testing and Commissioning of Assembling Plant of Solar Panel as a Comprehensive Package on Turnkey Basis with the equipments to be supplied as per the attached specifications (Appendix – A) and test the same:

- a. Technical Offer.
- b. Financial Offer.

The Bidders may visit the site to prepare their tender Document. On completion of the evaluation of “Technical Offer”, the “Financial Offer” of only the technically responsive Bidders will be open and evaluated for the financial comprehensive. After completion of evaluation of the “Financial Offer” the lowest evaluated responsive bidder will be selected on the basis of both technical and financial competitiveness.

3. Bidders shall provide the detail explanation of the technical matters if deem necessary with reference to relevant pages of their offer/ supporting catalogue/ brochure/ certificates/ documents etc.

4. The Offers shall be addressed to the Managing Director, Telephone Shilpa Sangstha Ltd.Tongi, Gazipur, Bangladesh.

5. One tender box shall be kept in the TSS factory/ office at Tongi, and another tender box in the office of the Company Secretary, TSS Board of Directors, Room No.7, Dak Bhaban (PMG Building) Dhaka -1000 for dropping sealed Tenders/ Offers/ Bids. The Bidder shall drop their offers in one sealed envelopes addressed as mentioned above containing two separate sealed envelopes clearly marked as “Technical Offer” and “Financial Offer”. The tender offers shall have to be dropped only on date and time mentioned in the “Invitation for Re-Tender”, in any one of the tender boxes kept at the above mentioned 2 (two) places.

6. Both the tender boxes at the above 2 (two) places shall be closed at the same time just after 11.30 A.M (local time) on tender closing date mentioned in the “Invitation for Tender”. After closing the tender box kept in the office of the Secretary, TSS-Board of Directors, Room No. 7, Dak Bhaban (PMG Building), Dhaka-1000 the unopened sealed box shall be brought to TSS office at Tongi, and then both the tender boxes shall be opened at 2.30 P.M (local time) on tender closing date mentioned in the “Invitation for Re-Tender” in TSS, Tongi, Gazipur, in presence of the tenderers or their authorized representatives, if they remain present. Immediately after opening of both the above tender boxes the envelope(s) of the “Technical Offer” will be opened and details of the bidders as well as submitted papers/ documents/ certificates/ Bid Security will be checked and noted.

7. Pre-Bid Meeting: All prospective bidders, who has purchased tender document, are requested to attend a pre-bid conference with the purchaser's representative to be held in the conference room of TSS, Tongi, Gazipur on a date and time to be specified by TSS. A notice in daily newspapers shall notify the date and time, either separately or together with the invitation of bid. The purpose of the meeting would be to clarify the requirement of the bidding documents including the Technical Specification. Clarifications provided or amendments made following the queries raised in the pre-bid meeting would be communicated in writing to all prospective bidders. Such clarifications and/or amendment will become an integral part of the Bidding Documents.

8. Tender's offers/bids are to be submitted in sealed envelopes (one "Original" and two "copy" of the Original). All the papers, documents, certificates, Bid Security, technical specifications, price quotation, as well as signed tender documents are to be submitted in two separate envelopes marked "**Technical Offer**" and "**Financial offer**" with name and address of the bidder clearly marked on it. A soft copy (in CD) of the technical offer must also be submitted with the bid.

9. Offers may be submitted by the reputed manufacturers or trading company through their authorized Local Agents/ distributors/ representatives in Bangladesh. In that case authenticated documentary proof in this regards has to be submitted with the "Technical Offer".

10. a. Tenderers shall pay a Bid Security with their Technical Offer for an amount of Taka 7,50,000.00 (Taka Seven lac fifty thousand) or equivalent USD only in the form of Pay Order/ Bank guarantee (Annex-6) in favour of Telephone Shilpa Sangstha Ltd., issued by any Scheduled Bank in Bangladesh, or from any reputable foreign Bank duly endorsed with full obligation and liabilities by a Schedule Bank in Bangladesh located in Dhaka. The **Bid Security** must be with a validity period of minimum 148 **(One Hundred and Fourty Eight) days** from the date of submission of the tender. Tenderers are specifically advised not to submit Bid Security with validity period less than 148 **(One Hundred and Fourty Eight) days** from the date of submission of the Tender. The Bid Security so deposited will be liable to forfeiture if the Tenderer(s) fails to accept any Contract within the validity period of the Bid. The Bid Security would be returned to the unsuccessful tenderers within 28 (twenty-eight) days of placing of the order for **Supply, Installation, Testing and Commissioning of Assembling Plant of Solar Panel as a Comprehensive Package on Turnkey Basis**. The successful Tenderer's Bid Security will be returned after receiving Performance Guarantee (PG) as per Clause 24 of this tender schedule, otherwise this Bid Security will be forfeited for non-acceptance of the Purchase order and non-submission of PG. Any of the above mentioned Bid Security will not accrue any interest in favor of any of the bidders. Offer without requisite Bid Security will straightway be rejected and will not be considered for evaluation on any ground whatsoever.

b. Tender/Bid must remain valid for **120(One hundred twenty) days** from the closing date.

11. Prices will be quoted in US Dollars and in BDT. FOB price and freight charge should be shown separately as mentioned in the Price Schedule at Chapter-IV.

12. The successful bidder/ principal/ manufacturer of major equipments (i.e. semi-automatic Laminator, Automatic Laminator, and Laser cutter) have to meet the following criteria/ terms/ conditions.
13. Bidders failing to comply with all criteria will be treated as disqualified :
 - a. Shall have sufficient proven experience for supplying and assembling similar type of equipment within the last 3 (three) years.
 - b. Shall submit Manufacturer's Authorization Certificate for the offered items.
 - c. The Manufacturer(s) shall certify country of manufacture/ origin for the offered items.
 - d. Shall submit the catalogue and necessary data sheet in support of the offered product(s).
 - e. Shall submit at least 2 (two) certificates from the users using similar type of equipment within the last 2 (two) years with satisfaction.
 - f. The **Bid Security** shall remain valid for 148 (One hundred forty eight) days from the date of submission of the Bid.
 - g. Tender/Bid must remain valid for 120(One hundred twenty) days from the closing date.
 - h. Shall submit the "original" purchase receipt of the Tender Document with the "Original" of the "Technical Offer" and its copies with the each "copy" of the "Technical Offer".
 - i. The Bidder must submit a Compliance Statement clause by clause.

Chapter – II: Terms and Conditions

14. Compliance of Tender Specifications:

All terms and conditions mentioned in technical specification should be treated, as Part of this tender and compliance to Technical Specification is mandatory. Equipment to be supplied must fulfill all the requirements of this Technical Specification and the purpose of the TSS.

15. Compliance Statement:

Compliance against each of the features/specifications must be explained in details and supported by supplied original brochure/catalogue with specific cross-reference to particular item as and where deemed required.

16. Quality of Products:

All hardware, components and software products of all the related items/ equipment, tools etc., included under this tender document must be brand new and of well-reputed brand. Refurbish product/item will not be acceptable.

17. Qualifications and Experience Criterion:

The manufacturer of the major item (i.e. semi-automatic Laminator, Automatic Laminator, and Laser cutter) shall have a minimum manufacturing experience of 2 (Two) years with adequate supply records. The evidence in these regards shall have to be submitted with “Technical Offer”. The major equipment must be of proven international standard and shall have appropriate ISO or equivalent certification.

18. Project Implementation Plan:

Shipment of all items is to be completed **within 90 (ninety) days** from the date of signing the contract. All Machine/equipment included under this tender document is to be installed and commissioned in all respect and handed over to TSS for its commercial operational stage by the manufacturer/ tenderer/ supplier in Dhaka within 30 (thirty) days after receiving the plant equipment/ accessories/ stores by TSS or within 150 (One hundred fifty) days after signing the contract whichever is earlier.

19. Complete offer:

a. Bidder must submit all the goods and services as per BoQ mentioned in chapter iv of the tender document. Bidder should also include additional items which is not mentioned in the BoQ but they fill necessary to fulfill the fuctional requirement of the plant. Bidder should submit un-priced BoQ of the offered goods and services indicating model number and quantity in thr technical offer without which the technical offer will not be considered for evaluation.

b. Tenders lacking fulfillment of any sections of this tender document are liable to be rejected. If the Tenderer/ Bidder feels necessity of any further information or clarifications in respect of the technical specifications or other terms and conditions of the tender, may get it clarified in writing before submission of the tender/ Bid. Any claim what so ever raised later on after

submission of the tender/ Bid will not be entertained.

c. Any amendment/ change or an alternative proposal by the Tenderer/ Bidder shall not be accepted and the proposal so proposed/ submitted shall be rejected assigning any reason thereof.

20. Pre-Shipment Inspection (PSI):

PSI program must be arranged by the supplier/ local agent/ manufacturer at the manufacturer's premises/ plants before shipping the consignment. All expenses for travel (air tickets), accommodation and food for the PSI will be borne by the supplier/ local agent/ manufacturer. The supplier has to quote the cost of PSI for 3 (three) persons for 5 (five) working days with 100 USD (One hundred) per day (including holidays in between) per person.

21. Expenditure of Supplier's/ Manufacturer's Engineer:

All expenditure on travel, food, accommodation and transportation of the supplier's/ manufacturer's engineers/ technicians for installation will be borne by supplier/ manufacturer.

22. Penalty for Failure:

Failure to supply the contracted plants/ equipment/ good will compel TSS to cancel the contract with necessary legal action without any compensation to the supplier/ manufacturer(s).

23. Firm and Fixed' Rules:

The cost of the item is to be "**Firm and fixed**". TSS will not accept any increase of the price at any stage of this tender process.

24. Warranty/Guarantee:

a. Warranty Service:

Minimum 12 (twelve) months warranty of all products and services from **the date of final acceptance by TSS** is to be provided.

b. Guarantee for Spare Support:

Assurance and guarantee certificate for the spares and required maintenance or replacement support are to be provided at cost by the manufacturer of the item/ equipment for a period of at least 10 (ten) years is to be provided in the Technical Offer.

c. Guarantee for Expected Life:

Expected life of the items/ equipment mentioned in tender document should not be less than 10 years. The supplier is to provide in the

Technical Offer a guarantee certificate to this effect from the original manufacturer of items/ equipment.

25. Payment Terms:

Payment will be made through irrevocable LC with schedule bank in Bangladesh and negotiating Bank as recommended by the Tenderer/ Contractor. The payment terms will be as follows:

- a. 75% of the C&F Value of the goods shall be released on submission of the following documents:
 - i. Bill of lading
 - ii. Invoice
 - iii. Packing note
 - iv. Factory Acceptance Test Certificate by the buyer at seller's site
 - v. Warranty certificate
- b. 25% of C&F value of the equipment payment shall be released on production of acceptance certificate from consignee after completion of the installation and acceptance.
- c. 100% PSI costs shall be released after receiving the PSI program by TSS.
- d. 100% of the Training cost shall be released on successful completion of the training at the site.
- e. 100% of the Installation cost will be released after the successful completion of the installation, testing and commissioning.

26. Performance Guarantee (PG):

Successful Tenderers shall pay a Performance Guarantee (PG) equivalent to 10% (ten percent) of the total C&F value of the plants/ equipment/ materials within 20 (twenty) days from the issue of Notification of Award (NOA), in the form of Bank Draft/ Pay Order/ irrevocable Bank Guarantee (proforma enclosed) from any scheduled bank in favour of Telephone Shilpa Sangstha Ltd., and payable at Dhaka for the due diligent and faithful observance and performance of all terms and conditions of the Tender Document. The validity of the PG shall be for a minimum period of 12 (twelve) months from the date of acceptance by TSS. This PG will not accrue any interest in favour of the tenderer/ manufacturer.

27. Cost of Letter of Credit:

All Bank charges in respect of Letter of Credit (LC) outside Bangladesh are to be borne by the tenderer/ manufacturer. Any change for amendment requested by the tenderer/ manufacturer is to be borne by them.

28. Insurance:

Insurance of goods under contract from the time these are loaded on board the ship/ aircraft in the supplier's country, till these are unloaded at consignee's premises, TSS shall obtain a open cover marine insurance policy for an amount equal to 110% of

the C&F value of the goods from “**Sadharan Bima Corporation**” 24-25, Dilkusha C/A, Dhaka-1000, Bangladesh / any other insurance company of Bangladesh.

29. Taxes and Duties:

TSS shall pay all taxes and duties, payable under government laws, for all goods and materials imported under the contract into any port of entry into Bangladesh. But such goods and materials must have to be included in the Price Schedules as mention in the Chapter-IV and or its subsequent amendment(s) (if any).

30. Signatory of the Price Quotation:

The Schedule of Price Quotation in Taka/ US Dollars shall be duly signed by the Tenderer/ manufacturer giving name, designation and official seal of the signatory.

31. Price Evaluation:

For the price evaluation purpose the quoted prices for foreign items in US Dollars and in BDT for local items will be considered.

32. Price Corrections for Errors:

In case of any confusion in copies of the offers the original offer will prevail. In case of any arithmetic errors in the amounts noted in the price Schedule the unit price will prevail and corrections will be made accordingly. If the Price offered by the Bidder is disclosed in any form in the Technical Offer the Tender will be rejected.

33. Offer by Fax/ Courier:

Fax offers or offers submitted by mail/ courier are not acceptable. Down loaded copy of the offer is also not acceptable. All offers are to be submitted as one “Original” and two “copies” of the original in separate sealed envelopes clearly marked as “Original” and “Copy” for both the “Technical Offer” and “Financial Offer”.

34. Signature on Tender Document:

The Tender document shall be sealed and signed by the Bidder or a person duly authorized to sign on behalf of the Bidder in each page.

35. Conditional Offer:

Conditional offer or alternative offer will not be accepted.

36. Authorization Certificate:

Authorization certificate/ letter issued by the manufacturer has to be signed giving name, designation & official seal and to be submitted in original with the “original” of the “Technical Offer” and copies with “Copy” of the “Technical Offer”.

37. More than One Offer:

If any Principal/ manufacturer give more than one offer through more than one local agent/ bidder, then all the offers of that Particular principal/ manufacturer/ tenderer will be treated as rejected.

38. Date of Manufacture:

All the offered item/equipment shall be brand new, latest model of production and not produced before 2008.

39. Country of Origin/Manufacturing:

Country of Origin as well as manufacturing/assembling of all items is to be mentioned in the Schedule of Price Quotation.

40. Packing:

All the equipment, tools, accessories and goods shall be suitably packed in order to avoid damage during transit or handling. Each package shall prevent ingress of moisture and dust and cushioned with a suitable material to prevent damage due to shocks during transit. The lid of the package may be suitably sealed. The packages shall be properly sealed against accidental opening in transit. The packages/ packing cases may be marked to indicate the fragile nature of the contents.

All packages imported are liable to be opened for Customs examination and packing shall therefore be designed to facilitate opening and repacking thereafter. Each package shall have the following information printed on it in bold letters.

- Name of the supplier
- Port/ Place of loading
- Port/ Place of destination
- Name of consignee
- Contract number
- Brief description of stores
- Number of packages
- Gross and net weight
- Package measurements

In addition, each package shall be clearly marked or stenciled in red on two sides. The shipping mark to be inscribed is shown below.



On the other two sides arrow marking with the wording “THIS SIDE UP” and “FREGILE” shall be clearly marked or stenciled to indicate the face of the package to be kept upward.

41. Manuals/Documents:

Suppliers/ manufacturer shall supply operational and maintenance manuals of all equipment/ items quoted in the offer in English along with a soft copy in a CD (compatible version: MS Word/ PDF).

42. Fast Moving Spare Parts:

Supplier/ manufacturer shall provide a list of Essential backup spares/ items (critical and fast moving) as deemed fit and required for the smooth commercial operation of the plant with price and quantity required for two years beyond warranty periods.

43. Training:

Both overseas and local training has to be provided by the supplier/ manufacturer to the engineers and technicians on operation and maintenance. The overseas and local training costs shall include required air tickets, lodging, food and training material/premises is to be quoted in the financial offer. The proposed training schedules and syllabus are to be submitted while signing the contract after mutual discussion with TSS during the contract negotiation period. For both local and foreign training bidder should notify TSS 4-6 weeks before.

a. Factory Training:

The details of this course module are given below:

- a) Number of Engineers : 6(Six)
- b) Number of minimum working days : 2 (Two) weeks
- c) Per diem charge to Trainee : US\$ 100 (One Hundred) per day
(including all holidays in between and travel days) per person

b. Local Training:

The Bidder shall provide practical Equipment based training in Bangladesh at TSS premises. The details of the local training shall be as follows:

For all equipment:

- a) Number of Engineer/Technician : 15 (Fifteen)
- b) Number of minimum working days : 3 (Three) weeks.
- c) Per diem charge to trainee : BDT 500(Five hundred) per day per trainee

44. Installation and Acceptance:

- a. The installation of all the mentioned equipment will be on TURN KEY basis. It will include installation, testing, commissioning and commercial operation of the items/equipment along with its all related facilities. After satisfactory trial run, the supplier/ manufacturer shall carry out acceptance check of the system in presence of TSS Team. TSS Team may also carry out acceptance check during acceptance of the system.
- b. The system is to be commissioned and handed over to TSS in full operational condition. If the system is found unsatisfactory, acceptance check will be held up till the equipment is corrected by the supplier/ manufacturer. Necessary rectification/replacement of the equipment, if needed during acceptance check, is to be completed within 01 (one) month without any additional cost to TSS. However, if any defect occurred during carrying out the acceptance check by the TSS team, the cost is be reimbursed by TSS.
- c. Installation cost is to be quoted separately.

45. Liquidated Damage:

Following clause will be included in the contract:

- a. In case the supplier/ tenderer/ manufacturer fails to complete shipment within the schedule of shipment mentioned in the contract, the purchaser shall have the right to impose and recover liquidated damages at the rate of 1% of the value of any stores which the supplier has failed to deliver for each week or Part of a week subject to maximum of 10% of the total contract value.
- b. Should the delivery of the materials be delayed due to causes such as labor strikes, factory closure, fire, war, dock strike etc. to be termed as “FORCE MAJEURE” beyond the reasonable control of the suppliers/ tenderer/ manufacturer, liquidated damage will not be charged, however the delay shall have to be supported by documentary evidences from appropriate authorities.

46. Rejection Clause:

The tender shall be rejected as per the conditions of rejections mentioned in any Clauses in the Tender Document and for the following:

- i. The requisite Bid Security is not provided with the Technical Offer.
- ii. The price is disclosed in any form other than in the Financial Offer.
- iii. The Guaranteed Technical Particulars are not filled in.
- iv. More than one Tender submitted by any Tenderer/ manufacturer.
- v. Insufficient experience or Incomplete Offers:
 - (a) User certificate of 2 (two) foreign countries of last 2 (two) years.
 - (b) Supply record for last 3 (three) years. (List with date)
- vi. Original receipt of purchase of Tender Document not submitted with the “Technical Offer”.

47. Arbitration:

All legal dispute of whatever kind arising out of the contract concluded between the parties including disputes regarding validity of contract shall be settled wherever possible, amicably with the inclusion of the ordinary Court of law of the People's Republic of Bangladesh as per the Bangladesh Arbitration Act 2001 (1 of 2001).

48. Methodology for the Assembling and Production Plan:

A write-up describing the methodology for the procurement of components, assembling, quality control, technical and logistic supports, future development, market share and other relevant factors are to be provided with the Technical Offer to inform the salient features of profitability of the project to TSS.

49. Acceptance of the Tender:

a. If the Tenderer/ manufacturer deems reasonable to include any required equipment/ accessories/ goods, without which the smooth functioning of the assembly plant will hamper, then he may indicate the same with detail reasoning and specifications, and include these as separate sheets in the "Technical Offer" as an optional Part. The Tenderer/ manufacturer shall also quote the prices of these items, if any, in a separate price sheet and include the same in the sealed "Price Offer". The quoted prices shall be valid for a period of 12 (twelve) months from the date of submission of the Tender.

b. The Tenderer shall submit only the "Price Schedule" and the "Price Proposal Sheet" (Annex-7) as the "Financial Offer" of the tender.

c. TSS does not pledge himself to accept the lowest or any tender and reserves the right of accepting the whole or any Part of the tender or portion of the quantity offered or reject any or all the tenders without assigning any reason whatsoever.

Chapter – III: Technical Particulars/ Information:

50. Technical Specifications/ Particulars of Solar Panel Assembly Plant:

Tender No. TSS/FP/Solar Panel/2010/10-1.

50.1 Scope:

This specification shall cover design, manufacture, supply, testing and commissioning of assembling plant of solar panel on turn key basis. The assembling plant should have a production capacity of 7.5 MW/year considering 80% uptime and single shift of operation. TSS may go for phase wise implementation within 2 (two) year. BoQ will be finalized at the time of contract signing.

The bidder should mention the required area for factory and submit the factory layout showing different machines for smooth production. The layout should show the all the machines including the store and office area in their proposed layout plan.

The bidder should also quote the raw materials for 50kw system which will be required for test operation and production after installation of the machines.

50.2 Service conditions:

The equipment to be supplied against this specification shall be suitable for satisfactory continuous operation under the following tropical conditions.

Sl. No.	Condition	Specification
1	Maximum ambient temperature (°C)	50
2	Maximum daily average temperature (°C)	35
3	Maximum relative humidity (%)	95
4	Maximum annual rainfall (mm)	1500
5	Maximum altitude above mean sea level (meters)	200
6	Environmental condition	Humid tropical climate with heavily polluted atmosphere

50.3 Applicable Standards:

The equipment and components supplied shall generally be in accordance with the latest editions/ amendments of the relevant standards to be mentioned by the bidder/ manufacturer

50.4 Requirements:

The equipment to be supplied against this specification shall meet the requirements stipulated in the document and specified as below.

50.4.1 Electrical Requirements:

The Solar Panel assembly plant shall be manufactured by internationally reputable manufacturer. The machines must follow the following general features:

Sl. No.	Item Description	Requirement
1.	Single Phase- Input Power: Voltage: Frequency:	230 V, AC \pm 10 % 50Hz \pm 3 %
2.	Three Phase- Input Power: Voltage: Frequency:	415.7V , AC \pm 10 % 50Hz \pm 3 %

50.4.2 Mechanical requirements:

The supplied equipment shall be made of unbreakable, high grade, fire resistant, reinforced and shock proof materials.

50.4.3 Additional Feature and functions:

The supplied equipments should be compatible with each other to form a complete production line. The bidder should submit the factory layout showing dimensions of the listed machines to form a complete production line. The bids without proper factory and production line drawing will not be considered for technical evaluation. The successful bidder must get the approval of the layout and production line drawing from TSS authority before installation of the machines.

The bidder should offer PC based central monitoring system, which should monitor all the supplied machines operational status in the central location. There should be proper logs of all the machines activities. The central monitoring system should have management reporting facilities for management. There should be provision for real time dashboard for management terminals.

51. Guaranteed Technical Particulars for Semi Automatic Laminator:**Tender No. TSS/FP/Solar Panel/2010/10-1.**

The Guaranteed Technical Particulars as stated below shall have to be completed and signed by the Tenderer/ Manufacturer and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1	Name of the manufacturer, contact address and country of manufacture	To be mentioned.	
2	Model No./Catalog Ref. No.	To be mentioned.	
3	The Semi-automatic photovoltaic module laminator should be designed for different size of lamination of crystalline & poly crystalline cells with high productivity and be used for big & special applications. The machine is suitable for both standard & fast cure EVA for encapsulation of PV cells. It should be user friendly touch screen panel to program cycle operation, controller to maintain uniform temperature and proper cooling system.	To be mentioned.	
4	Effective working area:	3600X2200 mm.	
5	Heating system:		
5.1	Type of heating:	Electrical and oil	
5.2	Temperature distribution on heating plate area during heat up:	$< \pm 2^{\circ} \text{C}$	
5.3	Temperature distribution within steady state:	$< \pm 2^{\circ} \text{C}$	
5.4	Heating plate specification:		
5.4.1	Material:	steel	
5.4.2	Thickness:	$\geq 25 \text{ mm}$	
5.4.3	Temperature range:	$\leq 180^{\circ} \text{C}$	
5.4.4	Temperature display:	Available	

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
6.	Vacuum system:		
6.1	Vacuum pumps:	≥ 150 m ³ /h	
6.2	Ultimate value of vacuum:	< 0.5 mbar	
6.3	Definition/resolution:	high	
6.4	Vacuum gauge/display	Available	
7	Control unit:		
7.1	Cycle control:	PLC base auto	
7.2	Interface:	Manual control	
7.3	Operation option:	Manual each operation	
7.4	Pre-selected working cycle:	Automatic start with a start button	
8	General requirement	Maintenance friendly design, loading and unloading of laminator from both sides (left and right) without any handicap. Easy maintenance/removal of heating plates. Documentation in English language.	
9	Operational safety:	Equipment/laminator is equipped with safety devices according to the respective standard.	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

52. Guaranteed Technical Particulars for Automatic Laminator:**Tender No. TSS/FP/Solar Panel/2010/10-1.**

The Guaranteed Technical Particulars as stated below shall have to be completed and signed by the Tenderer/ Manufacturer and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1	Name of the manufacturer, contact address and country of manufacture	To be mentioned.	
2	Model No./Catalog Ref. No.	To be mentioned.	
3	The Automatic photovoltaic module laminator should be designed for different size of lamination of crystalline & poly crystalline cells with high productivity and be used for big & special applications. The machine is suitable for both standard & fast cure EVA for encapsulation of PV cells. It should be user friendly touch screen panel to program cycle operation, controller to maintain uniform temperature and proper cooling system.	To be mentioned.	
4	Effective working area:	2200X1800 mm	
5	Heating system-		
5.1	Type of heating:	Electrical and oil	
5.2	Temperature distribution on heating plate area during heat up:	$< \pm 2^{\circ} \text{C}$	
5.3	Temperature distribution within steady state:	$< \pm 2^{\circ} \text{C}$	
5.4	Heating plate specification-		
5.4.1	Material:	steel	
5.4.2	Thickness:	$\geq 25 \text{ mm}$	
5.4.3	Temperature range:	$\leq 180^{\circ} \text{C}$	
5.4.4	Temperature display:	Available	
6.	Vacuum system-		

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
6.1	Vacuum pumps:	≥ 150 m ³ /h	
6.2	Ultimate value of vacuum:	< 0.5 mbar	
6.3	Definition/resolution:	high	
6.4	Vacuum gauge/display	Available	
7	Control unit-		
7.1	Cycle control:	PLC base auto	
7.2	Interface:	Manual control	
7.3	Operation option:	Manual each operation	
7.4	Pre-selected working cycle:	Automatic start with a start button	
8	General requirement	Maintenance friendly design, loading and unloading of laminator from both sides (left and right) without any handicap. Easy maintenance/removal of heating plates. Documentation in English language.	
9	Operational safety:	Equipment/laminator is equipped with safety devices according to the respective standard.	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

53. Guaranteed Technical Particulars for Laser Cutter:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The Guaranteed Technical Particulars as stated below shall have to be completed and signed by the Tenderer/ Manufacturer and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
01.	Name of the manufacturer, contact address and country of manufacture	To be filled.	
02.	Model No./Catalog Ref. No.	To be mentioned.	
03.	The laser Cutting Machine designed for cutting & dicing mono-crystalline & poly-crystalline solar chip and wafer. The machine should have numeric control work table movement operated user friendly instructions.	To be mentioned.	
04.	The language of manual, instructions and documentations	English	
05.	Power supply :	220 V, 50 Hz	
06.	Work platform size	: 200X200 mm	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

54. Guaranteed Technical Particulars for Cell Sorter:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The Guaranteed Technical Particulars as stated below shall have to be completed and signed by the Tenderer/ Manufacturer and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model with Catalogue	To be mentioned	
3	The Cell Sorter Machine to sort photovoltaic cells according to their electrical performance, tested under simulated sunlight.	To be mentioned	
4	Testing area:	200X200mm	
5.	Illumination	uniformity: $\pm 3\%$	
6.	Test period:	< 3 second for each module	
7.	Working period:	24 hour	
8.	Measure the required electrical properties.		

.....
Seal and Signature with name & Designation of the Tenderer

Date:

.....
Seal and Signature with name & Designation of the Manufacturer

Date:

55. Guaranteed Technical Particulars for Sun Simulator:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars as stated below. The tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
3.	The Sun Simulator for measuring I-V characteristic of large size PV module made of crystalline or polycrystalline cells.	To be mentioned	
4.	Effective test area:	2200X1800 mm	
5.	Effective test range:	5 to 300 W	
6.	Uniformity of test result:	± 0.5%	
7.	Measurement error of electric properties:	≤1%	
8.	Power supply:	220V, 50Hz	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

56. Guaranteed Technical Particulars for Framing Machine:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars as stated below. The tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
3.	The machine should be suitable to use for preparing and finishing solar panel frame and lock the four corner of the frame.	To be mentioned	
4.	Maximum panel size:	2200X1800mm	
5.	Power supply:	220v, 50Hz	
6.	Difference of diagonal line difference:	1.5mm	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

57. Guaranteed Technical Particulars for EVA, TPT Cutting Table:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars as stated below. The tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
3.	EVA sheets and TPT needs cutting to size and uniformity. The station is a strong steel table with tough top for cutting EVA and TPT before laminating. The station table has storage cabinets for different use and application.	To be mentioned	
4.	Working Dimension:	1800X1000 X 800mm	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

58. Guaranteed Technical Particulars for Welding Table:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars as stated below. The tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
3.	The working Table should includes operating platforms with power distribution board and welding template for both single cell & string soldering.	To be mentioned	
4	Operating platform:	2200X850 X 800mm	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

59. Guaranteed Technical Particulars for Module Transfer Carrier:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars as stated below. The Tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
3.	Hand truck for transportation of Glass / Solar Modules / Panel at different stage of production. The module carrier made of steel and continues welding with rubber combination. It should carry 10 sets of 240W solar panels at one time & strong mobile castors for free and smooths movement during transport of modules / panels. The wheels can be locked for safety and stability to avoid any accidental damage.	To be mentioned	
4.	240W modules	Support 10 sets of 240W modules each time	

.....
Seal and Signature with name & Designation of the Tenderer

Date:

.....
Seal and Signature with name & Designation of the Manufacturer

Date:

60. Guaranteed Technical Particulars for Ready Material Carrier:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars as stated below. The tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
3.	Hand truck for transporting the module to be laminated, carry 10 set 180W solar panel with proper protection.	To be mentioned	
	240W module	10 set	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

61. Guaranteed Technical Particulars for Assembling Table:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars as stated below. The tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
4.	Provide horizontal surface to array the welded cell string, stack the glass EVA & TPT	To be mentioned	
5.	Module	Support 240 W	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

62. Guaranteed Technical Particulars for Appearance Inspection Table:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars as stated below. The tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
3.	Inspection of laminating properties and appearance of the panel.	To be mentioned	
4.	Panel	Support 240W panel	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

63. Guaranteed Technical Particulars for Trimming Table:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars stated below. The tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
3.	Table to trim the EVA & TPT around the panel after lamination.	To be mentioned	
	Panel	Support 240W panel	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

64. Guaranteed Technical Particulars for Cleaning Table:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars as stated below. The tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
3.	Table for cleaning the surface of the module	To be mentioned	
4.	Dimension:	1800X1000X800mm	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

65. Guaranteed Technical Particulars for Cell Select Table:

Tender No. TSS/FP/Solar Panel/2010/10-1.

The requirements and the Guaranteed Technical Particulars as stated below. The tenderer/ Manufacturer shall have to complete the guaranteed Particulars Part, signed below and to be submitted with Technical Offer along with the supporting documents and printed catalogue.

Sl. No.	Item Description	Requirement	Manufacturer's/ Tenderer's Guaranteed Particulars
1.	Manufacturer's Name & Address	To be mentioned	
2.	Model No. and Catalogue	To be mentioned	
3.	Table for Select out solar cells from the faulty one.	To be mentioned	
4.	Dimension:	1200X900X800mm	

.....
Seal and Signature with name &
Designation of the Tenderer

Date:

.....
Seal and Signature with name &
Designation of the Manufacturer

Date:

Chapter – IV:

Price Schedule for Goods in Foreign Currency

Tender No. TSS/FP/Solar Panel/2010/10-1.

To be quoted in US Dollars.

Item No.	Description of Item	Qty. of units Required	Unit FOB price	Total FOB price	Freight	Total C&F Price
1	2	3	4	5 = 3 x 4	6	7 = 5+6
1.	Semi-automatic Laminator (As per requirements specified in Technical Specifications and in the Tender Document.)	2 pcs				
2.	Automatic Laminator (As per requirements specified in Technical Specifications and in the Tender Document.)	1pc				
3.	Laser cutter (As per requirements specified in Technical Specifications and in the Tender Document.)	1pc				
4.	Cell Sorter (As per requirements specified in Technical Specifications and in the Tender Document.)	1pc				
5.	Sun Simulator (As per requirements specified in Technical Specifications and in the Tender Document.)	1pc				

Item No.	Description of Item	Qty. of units Required	Unit FOB price	Total FOB price	Freight	Total C&F Price
1	2	3	4	5 = 3 x 4	6	7 = 5+6
6.	Framing machine (As per requirements specified in Technical Specifications and in the Tender Document.)	2pcs				
7.	EVA, TPT Cutting Table (As per requirements specified in Technical Specifications and in the Tender Document.)	6pcs				
8.	Cell Welding Table (As per requirements specified in Technical Specifications and in the Tender Document.)	6pcs				
9.	Module Transfer Carrier (As per requirements specified in Technical Specifications and in the Tender Document.)	4pcs				
10.	Ready Material Carrier (As per requirements specified in Technical Specifications and in the Tender Document.)	4pcs				
11.	Assembling Table (As per requirements specified in Technical Specifications and in the Tender Document.)	4pcs				

Item No.	Description of Item	Qty. of units Required	Unit FOB price	Total FOB price	Freight	Total C&F Price
1	2	3	4	5 = 3 x 4	6	7 = 5+6
12.	Appearance inspection table (As per requirements specified in Technical Specifications and in the Tender Document.)	2pcs				
13.	Trimming Table (As per requirements specified in Technical Specifications and in the Tender Document.)	2pcs				
14.	Cleaning Table (As per requirements specified in Technical Specifications and in the Tender Document.)	2pcs				
15.	Cell Select Table (As per requirements specified in Technical Specifications and in the Tender Document.)	2pcs				
16.	Raw materials (Bidder to submit the details list with the bid)	50 kW				
Total						

Total in words: _____ only.

This schedule contains _____ number corrections or errors duly initialled and signed by the authorized Person of the Tenderer.

Signature of Tenderer _____ Date _____

Name of Tenderer _____
Designation of Tenderer _____

Chapter – IV:

Price Schedule for related services in Foreign currency

Tender No. TSS/FP/Solar Panel/2010/10-1.

To be quoted in US Dollars.

Item No.	Description of Item	Qty. of Units	Unit Price in US Dollar	Total price in US Dollar
1	2	3	4	5 = 3 x 4
1.	Pre Shipment Inspection (PSI)	1 Lot		
2.	Factory Training	1 Lot		
3.	Installation, Testing & Commissioning	1 Lot		
Total				

Total in words: _____ only.

This schedule contains _____ number corrections or errors duly initialled and signed by the authorized person of the Tenderer.

Signature of Tenderer _____ Date _____

Name of Tenderer _____

Designation of Tenderer _____

Chapter – IV:

Price Schedule for related services in Local currency

Tender No. TSS/FP/Solar Panel/2010/10-1.

To be quoted in Bangladesh Taka.

Item No.	Description of Item	Qty. of Units	Unit Price in BDT	Total price In BDT
1	2	3	4	5 = 3 x4
1.	Local Training	1Lot		
2	Local Transportation upto final distination	1Lot		
3	Installation, Testing & Commissioning (local goods)	1Lot		
Total				

Total in words: _____ only.

This schedule contains ____ number corrections or errors duly initialled and signed by the authorized person of the Tenderer.

Signature of Tenderer _____ Date _____

Name of Tenderer _____

Designation of Tenderer _____

Tender Submission Sheet

Tender No. TSS/FP/Solar Panel/2010/10-1.

**To
The Managing Director
Telephone Shilpa Sangstha Limited (TSS)
Tongi, Gazipur, Bangladesh**

We, the undersigned, offer to **Supply, Installation, Testing and Commissioning of Assembling Plant of Solar Panel as a Comprehensive Package on Turnkey Basis**, the Goods as mentioned in the Price Schedule in conformity with the Tender Document.

We undertake, if our Tender is accepted, to deliver the goods in [.....] (weeks/months) from the date of [.....] in accordance with the delivery schedule.

We are not Participating as Tenderers/ Manufacturer in more than one Tender in this Tendering process. Our Tender shall be valid for the period stated in the Tender Document and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

An Bid Security in the amount stated in the Tender Document is attached in the form of a [*state pay order, bank draft, bank guarantee*] valid for a period of 28 days beyond the Tender Validity Date.

We declare that ourselves, and any subcontractors or suppliers for any Part of the Contract, have nationalities from the countries which are not band by the Government of the People's Republic of Bangladesh (GoB) and that the equipment, goods and related services will also be supplied from countries which are also not band by GoB. We also declare that the Government of Bangladesh has not declared us, and any subcontractors or suppliers for any Part of the Contract, ineligible on charges of engaging in corrupt, fraudulent, collusive or coercive practices.

We furthermore, pledge not to indulge in such practices in competing for or in executing the Contract and are aware of the relevant provisions of the Tender Document.

We understand that our Financial Proposal shall be opened and evaluated only if our Technical Proposal becomes responsive upon your evaluation.

We understand that you are not bound to accept our Technical Proposal or any other Technical Proposal that you may receive.

Signed
In the capacity of:
Duly authorised to sign the Tender on behalf of the Tenderer.

Date:

Annexure – 2

Tenderer's Information Sheet

Tender No. TSS/FP/Solar Panel/2010/10-1.

A. Individual Tenderer

1. General Information of the Tenderer		
1.1	Tenderer's Legal Name	
1.2	Tenderer's legal address in Country of Registration	
1.3	Tenderer's legal status	
	Proprietorship	
	Partnership (Registered under the Partnership Act, 1932)	
	Limited Liability Concern (Registered under the Companies Act, 1994)	
	Others	
1.4	Tenderer's Year of Trade Licence Registration	
1.5	Tenderer's business status	
	Manufacturer	
	Local Agent/Distributor of a foreign Manufacturer	
	Stockist	
	Others	
1.6	Tenderer's Authorised Representative's Information	
	Name	
	Address	
	Telephone / Fax Numbers	
	e-mail address	
1.7	Tenderer to attach copies of the following documentation:	Documents mentioned in the (a) Technical Proposal, and (b) Financial Proposal.

2. Qualification Information of the Tenderer		
2.1	Number of years of overall supply experience of the Tenderer.	
2.2	Available liquid assets.	

B. Individual Members of a Joint Venture

3.1	Each Member of a joint venture, consortium or association (JVCA) shall provide all the information requested in the form above.
3.2	Attach a power of attorney for each of the authorising signatories of the Tender on behalf of the joint venture, consortium or association (JVCA).
3.3	Attach the Agreement among all Members of the JVCA (and which is legally binding on all Members), which shows that:

Signed
 In the capacity of:
 Duly authorised to sign the Tender on behalf of the Tenderer.
 Date:

Manufacturer's Authorisation Letter
(Where applicable)

Tender No. TSS/FP/Solar Panel/2010/10-1.

[This letter of authorisation should be on the letterhead of the manufacturer and should be signed by the person with the proper authority to sign documents that are binding on the manufacturer]

To

**The Managing Director,
TELEPHONE SHILPA SANGSTHA LIMITED (TSS)
TONGI, GAZIPUR, BANGLADESH.**

WHEREAS, we *[name and address of manufacturer]* are reputable manufacturers having factories at *[list of places of factories]*.

THEREFORE, we do hereby:

1. Authorise *[name of Tenderer]* to submit a Tender in response to the Invitation for Tenders indicated above, the purpose of which is to provide the equipments, tools and other required accessories and goods as mentioned in this tender document for assembling plant of solar panel and to subsequently sign the Contract for the supply of such Goods; and,
2. Extend our full guarantee and warranty in accordance with the respective Clause of this tender document, with respect to the Goods offered in the Tender.

Signed

Name:

In the capacity of (Designation):

Duly authorised to sign the document on behalf of the Manufacturer.

Date:

Tenderer's Warranty Certificate

(To be submitted in official letterhead)

Tender No. TSS/FP/Solar Panel/2010/10-1.

**To
The Managing Director
Telephone Shilpa Sangstha Limited (TSS)
Tongi, Gazipur, Bangladesh**

The supplier warrants that all goods/materials to be supplied under this proposal shall be new and free of defects in workmanship and materials, and shall be new and have the kind and quality specified in the technical specification.

If within 12 (twelve) months from the date of delivered to and accepted at the final destination the assembly plant of TSS at Tongi, Gazipur, Bangladesh, the purchaser discovers any defects in workmanship and or materials and notifies the supplier/ manufacturer in writing then the supplier shall with all reasonable speed remedy such defects of non-conformance to the specific action at his own expense by adjustment, repair or replacement at the option of the purchaser, and in such case the warranty period shall be extended by 12 (twelve) months from the date of repair/replacement of the defective item.

Signed

Name:

In the capacity of (Designation):

Duly authorised to sign the Tender on behalf of the Tenderer.

Date:

Manufacturer's Warranty Certificate

(To be submitted in official letterhead)

Tender No. TSS/FP/Solar Panel/2010/10-1.

**To
The Managing Director
Telephone Shilpa Sangstha Limited (TSS)
Tongi, Gazipur, Bangladesh.**

The manufacturer warrants that all goods/materials to be supplied under this proposal shall be new and free of defects in workmanship and materials, and shall be new and have the kind and quality specified in the technical specification.

If within 12 (twelve) months from the date of delivered to and accepted at the final destination the assembly plant of TSS at Tongi, Gazipur, Bangladesh, the purchaser discovers any defects in workmanship and or materials and notifies the supplier/ manufacturer in writing then the supplier shall with all reasonable speed remedy such defects of non-conformance to the specific action at his own expense by adjustment, repair or replacement at the option of the purchaser, and in such case the warranty period shall be extended by 12 (twelve) months from the date of repair/replacement of the defective item.

Signed

Name:

In the capacity of (designation):

Duly authorised to sign the Document on behalf of the Manufacturer.

Date:

Bank Guarantee for Bid Security

[This is the format for the Tender Security (Bid Security) to be issued by a scheduled bank of Bangladesh in accordance with the requirement of the Tender Document]

Tender No. TSS/FP/Solar Panel/2010/10-1.

**To
The Managing Director
Telephone Shilpa Sangstha Limited (TSS)
Tongi, Gazipur, Bangladesh**

TENDER GUARANTEE No: _____

We have been informed that *[name of Tenderer]* (hereinafter called “the Tenderer”) intends to submit to you its Tender dated *[date of Tender]* (hereinafter called “the Tender”) for the **Supply, Installation, Testing and Commissioning of Assembling Plant of Solar Panel as a Comprehensive Package on Turnkey Basis**, under the above Invitation for Tenders (hereinafter called “the IFT”)

Furthermore, we understand that, according to your conditions Tenders must be supported by a Tender guarantee.

At the request of the Tenderer, we *[name of bank]* hereby irrevocably undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Taka *[insert amount in figures and in words]* upon receipt by us of your first written demand accompanied by a written statement that the Tenderer is in breach of its obligation(s) under the Tender conditions, because the Tenderer:

- (a) has withdrawn its Tender during the period of Tender validity specified by the Tenderer in the Form of Tender; or
- (b) does not accept the correction of errors in accordance with the Instructions to Tenderers of the Tender Document; or
- (c) having been notified of the acceptance of the Tender by the Purchaser (TSS) during the period of Tender validity, (i) fails or refuses to furnish the Performance Security, or (ii) fails or refuses to execute the Contract Form,

This guarantee will expire:

- (a) if the Tenderer is the successful Tenderer, upon our receipt of a copy of the Performance Security and a copy of the Contract signed by the Tenderer as issued by you; or
- (b) if the Tenderer is not the successful Tenderer, twenty eight days after the expiration of the Tenderer’s Tender validity period, being *[date of expiration of the Tender]*

Consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Authorised Signature
Bank Seal

Authorised Signature
Bank Seal

Price Proposal Sheet

Tender No. TSS/FP/Solar Panel/2010/10-1.

**To
The Managing Director
Telephone Shilpa Sangstha Limited (TSS)
Tongi, Gazipur, Bangladesh.**

We, the undersigned, offer to **Supply, Installation, Testing and Commissioning of Assembling Plant of Solar Panel as a Comprehensive Package on Turnkey Basis**, in conformity with the Conditions of Tender Document/ Contract and associated Contract Documents.

The total Price of our Tender excluding Price reduction is:

Tk. (*in figure*),

Taka (*in words*).

The discount offered and the methodology for its application is:

We understand that our Financial Proposal shall be evaluated only if our Technical Proposal is responsive upon evaluation. If our Financial Proposal is accepted, we commit to obtaining a Performance Security in the amount stated in the Conditions of the Tender Document/ Contract Document and valid for a period of 28 days beyond the date of issue of the Certificate of completion of supply.

We understand that your written Notification of Award shall constitute the acceptance of our Tender and shall become a binding Contract between us, until a formal Contract is prepared and executed.

We understand that you are not bound to accept the lowest evaluated Financial Proposal or any other Financial Proposal that you may receive.

Signed

Name:

In the capacity of (Designation):

Duly authorised to sign the Tender on behalf of the Tenderer.

Date:

Notification of Award

Tender No. TSS/FP/Solar Panel/2010/10-1.

To:

(Name of the Supplier)

This is to notify you that your Tender dated *[insert date]* for the supply of goods and related services for **Supply, Installation, Testing and Commissioning of Assembling Plant of Solar Panel as a Comprehensive Package on Turnkey Basis**, for the Contract Price of Taka *[amount in figures and in words]*, as corrected and modified in accordance with the Instructions to Tenderers and the conditions stipulated in the Tender Document is hereby accepted by Telephone Shilpa Sangstha Limited (TSS).

You are requested to proceed with the supply of the goods and the related services and note that this Notification of Award shall constitute the formation of a Contract, which shall only become binding upon you furnishing a Performance Security within 14 (fourteen) days, and the signing of the Contract Agreement within 21 (twenty one) days.

We attach the Contract Agreement and Contract Documents for your perusal and signature.

Deputy Manager (Prefabrication),
Telephone Shilpa Sangstha Limited
Tongi, Gazipur.

Contract Agreement

Tender No. TSS/FP/Solar Panel/2010/10-1.

THIS AGREEMENT made the *[day]* day of *[month]* *[year]* between Telephone Shilpa Sangstha Limited (TSS), (hereinafter called “the Purchaser”) of the one Part and *[name and address of Supplier]* (hereinafter called “the Supplier”) of the other Part:

WHEREAS the Purchaser invited Tenders for certain goods and related services, viz, **Supply, Installation, Testing and Commissioning of Assembling Plant of Solar Panel as a Comprehensive Package on Turnkey Basis**, and has accepted a Tender by the Supplier for the supply of those goods and related services in the sum of Taka *[Contract Price in figures and in words]* (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the General Conditions of Contract hereafter referred to.
2. The documents forming the Contract shall be interpreted in the following order of priority:
 - (a) the letter of Notification of Award
 - (b) the completed Tender Submission Sheet as submitted by the Tenderer;
 - (c) the completed Price Schedules as submitted by the Tenderer;
 - (d) the General Information;
 - (e) the General Conditions;
 - (f) the Schedule of Requirements;
 - (g) the Technical Specifications;
 - (h) the Guaranteed Technical Particulars/ Specifications;
 - (i) any other document listed in the PCC as forming Part of the Contract.
3. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the goods and related services and to remedy any defects therein in conformity in all respects with the provisions of the Contract.

4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the goods and related services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the Parties hereto have caused this Agreement to be executed in accordance with the laws of Bangladesh on the day, month and year first written above.

For the Purchaser:

For the Supplier:

Signature

Name

Designation

Witness

Name

Address

Performance Guarantee (PG)

[This is the format for the Performance Security/ Guarantee to be issued by a scheduled bank of Bangladesh in accordance with the conditions in the Tender Document]

Tender No. TSS/FP/Solar Panel/2010/10-1.

**To
The Managing Director
Telephone Shilpa Sangstha Limited (TSS)
Tongi, Gazipur, Bangladesh.**

PERFORMANCE GUARANTEE No: _____

We have been informed that *[name of supplier]* (hereinafter called “the Supplier”) has undertaken, pursuant to Contract No *[reference number of Contract]* dated *[date of Contract]* (hereinafter called “the Contract”) for the **Supply, Installation, Testing and Commissioning of Assembling Plant of Solar Panel as a Comprehensive Package on Turnkey Basis**, under the Contract.

Furthermore, we understand that, according to your conditions, Contracts must be supported by a performance guarantee.

At the request of the Supplier, we *[name of bank]* hereby irrevocably undertake to pay you, without cavil or argument, any sum or sums not exceeding in total an amount of Taka *[insert amount in figures and in words]* upon receipt by us of your first written demand accompanied by a written statement that the Supplier is in breach of its obligation(s) under the Contract conditions, without you needing to prove or show grounds or reasons for your demand of the sum specified therein.

This guarantee is valid until *[date of validity of guarantee]*, consequently, we must receive at the above-mentioned office any demand for payment under this guarantee on or before that date.

Authorised Signature

Authorised Signature

Seal of the Bank

Seal of the Bank

Technical Specifications of machines:

1 Semi Automatic Laminator:

The Semi-automatic photovoltaic module laminator should be designed for different size of lamination of crystalline & poly crystalline cells with high productivity and be used for big & special applications. The machine is suitable for both standard & fast cure EVA for encapsulation of PV cells. It should be user friendly touch screen panel to program cycle operation, controller to maintain uniform temperature and proper cooling system.

Effective working area:
2200X1800 mm

1.1 Heating system:

Type of heating: Electrical and oil
temperature distribution on heating plate area during heat up: $< \pm 2 \text{ }^\circ\text{C}$
Temperature distribution within steady state: $< \pm 2 \text{ }^\circ\text{C}$
Heating plate specification
Material: steel, thickness $\geq 25 \text{ mm}$, temperature range: $\leq 180^\circ \text{C}$,
temperature display.

1.3 Vacuum system:

Vacuum pumps of $\geq 150 \text{ m}^3/\text{h}$, ultimate value of vacuum $< 0,5 \text{ mbar}$, high definition/resolution vacuum gauge/display

1.4 Control unit:

PLC base auto cycle control, with manual control interface. Manual operation option of each operation. Automatic start of pre-selected working cycle with a start button.

1.5 General requirement:

Maintenance friendly design, loading and unloading of laminator from both sides (left and right) without any handicap. Easy maintenance/removal of heating plates. Documentation in English language

1.6 Operational safety:

Equipment/laminator is equipped with safety devices according to the respective standard.
Legal compliance and conformity compliance/mark is mounted on all separate Parts of equipment.

1.7 Warranty: 12 (twelve) months

2. Automatic Laminator:

The Automatic photovoltaic module laminator should be designed for different size of lamination of crystalline & poly crystalline cells with high productivity

and be used for big & special applications. The machine is suitable for both standard & fast cure EVA for encapsulation of PV cells. It should be user friendly touch screen panel to program cycle operation, controller to maintain uniform temperature and proper cooling system.

Effective working area:
3600X2200 mm

- 2.1 Heating system:
Type of heating: Electrical and oil
temperature distribution on heating plate area during heat up: $< \pm 2 \text{ }^\circ\text{C}$
Temperature distribution within steady state: $< \pm 2 \text{ }^\circ\text{C}$)
- 2.3 Vacuum system:
Vacuum pumps of $\geq 150 \text{ m}^3/\text{h}$, ultimate value of vacuum $< 0,5 \text{ mbar}$, high definition/resolution vacuum gauge/display
- 2.4 Control unit:
PLC base auto cycle control, with manual control interface. Manual operation option of each operation. Automatic start of pre-selected working cycle with a start button.
- 2.5 General requirement:
Maintenance friendly design, loading and unloading of laminator from both sides (left and right) without any handicap. Easy maintenance/removal of heating plates. Documentation in English language
- 2.6 Operational safety:
Equipment/laminator is equipped with safety devices according to the respective standard.
Legal compliance and conformity compliance/mark is mounted on all separate Parts of equipment.
- 2.7 Warranty: 12 (twelve) months

3. **Laser Cutter:**
The laser Cutting Machine designed for cutting & dicing mono-crystalline & poly-crystalline solar chip and wafer. The machine should have numeric control work table movement operated user friendly instructions. The language of manual, instructions and documentations should be in English.

Power supply : 220 V, 50 Hz
Work platform size: 200X200 mm
4. **Cell Sorter:**

The Cell Sorter Machine to sort photovoltaic cells according to their electrical performance, tested under simulated sunlight.

Testing area: 200X200mm
Illumination uniformity: $\pm 3\%$
Test period: < 3 second for each module
Working period: 24 hour
Measure the required electrical properties.
5. **Sun Simulator:**
The Sun Simulator for measuring I-V characteristic of large size PV module made of crystalline or polycrystalline cells.

Effective test area: 2200X1800 mm
Effective test range : 0.1 to 300 W
Uniformity of test result: $\pm 0.5\%$
Measurement error of electric properties: $\leq 1\%$
Power supply: 220V, 50Hz
6. **Framing Machine**
The machine should be suitable to use for preparing and finishing solar panel frame and lock the four corner of the frame.

Maximum panel size: 2200X1800mm
Power supply:220v, 50Hz
Difference of diagonal line difference:1.5mm
7. **EVA, TPT Cutting Table:**

EVA sheets and TPT needs cutting to size and uniformity. The station is a strong steel table with tough top for cutting EVA and TPT before laminating. The station table has storage cabinets for different use and application.

Working Dimension: 1800X1000 X 800mm
8. **Welding Table:**
The working Table should include operating platforms with power distribution board and welding template for both single cell & string soldering.

Operating platform: 2200X850 X 800mm

9. **Module Transfer Carrier:**
Hand truck for transportation of Glass / Solar Modules / Panel at different stage of production. The module carrier made of steel and continues welding with rubber combination. It should carry 10 sets of 240W solar panels at one time & strong mobile castors for free and smooths movement during transport of modules / panels. The wheels can be locked for safety and stability to avoid any accidental damage.

Support 10 sets of 240W modules each time
10. **Ready Material Carrier:**
Hand truck for transporting the module to be laminated, carry 10 set 240W solar panel with proper protection.

Support 10 set 240W module
11. **Assembling Table:**
Provide horizontal surface to array the welded cell string, stack the glass EVA & TPT
Support 240 W module
12. **Appearance Inspection Table:**
Inspection of laminating properties and appearance of the panel.
Support 240W panel
13. **Trimming Table:**
Table to trim the EVA & TPT around the panel after lamination.
Support 240w panel
14. **Cleaning Table:**
Table for cleaning the surface of the module.
Dimension: 1800X1000X800mm
15. **Cell Select Table:**
Table for Select out solar cells from the faulty one.
Dimension : 1200X900X800mm

Bill of Material:

#	Machine	Qty	Unit price	Total price
1	Semi-automatic Laminator	2		
2	Automatic Laminator	1		
3	Laser cutter	1		
4	Cell Sorter	1		
5	Sun Simulator	1		
6	Framing machine	2		
7	EVA, TPT Cutting Table	6		
8	Cell Welding Table	6		
9	Module Transfer Carrier	4		
10	Ready Material Carrier	4		
11	Assembling Table	4		
12	Appearance inspection table	2		
13	Trimming Table	2		
14	Cleaning Table	2		
15	Cell Select Table	2		
16	Raw Material (for Testing)	50kw		