



**REGISTERED/IMMEDIATE**  
**Margalla Heavy Industries Limited**  
C/o

Commercial Directorate  
(Commercial Proc Branch)  
Taxila Cantt, Pakistan  
Tel: 051 9315333-62933  
Fax No. 051 9315029&31  
1528-1/Solar Panel/ASRF/Proc/MHIL

05 April 2024

To: M/s \_\_\_\_\_  
(All Concerned)

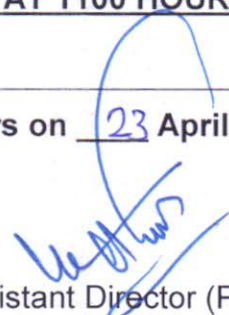
Subject: **REQUEST FOR PROPOSAL (RFP) FOR ESTABLISHMENT OF SOLAR PANEL ASSEMBLY LINE**

Dear Sir,

1. Margalla Heavy Industries Limited (Margalla HIL) subsidiary of Heavy Industries Taxila (HIT) invites proposals from reputable and renowned firms / companies having sound financial background and relevant experience in the field of Establishment of Solar Panel Assembly Line at Margalla HIL C/O Heavy Industries Taxila.
2. Request for (**Two Stage Two Envelope**) proposal document is attached.
3. The proposal complete in all respects in sealed envelopes should reach following address and be clearly marked as **Establishment of Solar Panel Assembly Line**. "Pre-qualified / short listed firms / companies will be asked to provide technical specifications and commercial quotations on which the firms will furnish their proposed solution and financial offers". Address detail on sealed envelopes is as under:-

<b><u>REQUEST FOR PROPOSAL</u></b>		<b><u>REGISTERED</u></b>
TO:	<b>ASSISTANT DIRECTOR MARGALLA HIL</b>	
REQUEST FOR PROPOSAL INQUIRY NO:	<b><u>1528-1/Solar Panel/ASRF/Proc/MHIL</u></b>	
	<b><u>dated April 2024</u></b>	
TO BE OPEND ON:	<b><u>23 April 2024 AT 1100 HOURS</u></b>	
FROM: M/S _____		

4. The proposal shall be opened for acceptance till **1030 hours** on **23 April 2024**.

  
Major  
Assistant Director (Procurement)  
(Usman Anwar Kayani)



**Margalla Heavy Industries Limited, Taxila Cantonment**

**Request for Proposal (RFP)**

**For**

**Establishment of Solar Panel Assembly Line**

## SOLAR PANEL ASSEMBLY LINE – REQUEST FOR QUOTATION / PROPOSAL

### 1. Introduction:

- a. Heavy Industries Taxila is one of the largest defence products manufacturer and has grown into a military industrial complex since its foundation 1971. HIT undertakes heavy engineering works for Pakistan's military and for the civilian law enforcement agencies alongwith various commercial projects.
- b. The purpose of the RFQ, is to identify best potential suppliers of solar panels assembling machinery / plant.
- c. By offering competitively priced solar panels, HIT intends to make solar energy more accessible to consumers, leading to long-term cost savings on their energy bills.
- d. The solar energy sector is expected to have sustained growth in the coming years. Establishing a solar panel assembling line is a long-term investment that will position HIT for success in a rapidly evolving and expanding industry.

2. **Background.** HIT intends to make itself leading renewable energy solutions provider, innovative technology firm. HIT is embarking on a strategic expansion to strengthen its commitment to sustainable energy practices. With a vision to promote clean and renewable energy sources, we aim to establish a state-of-the-art Solar Panel Assembling Line at HIT and sell solar panels in commercial and residential sector.

3. **Project Overview.** Establishment of a solar panel assembling line to meet the increasing demand for high-quality solar panels in the market as part of our commitment to advancing renewable energy.

4. **Objectives.** The primary objective of this project is to set up a Solar Panel Assembling Line that can produce top-tier solar panels with maximum efficiency. By investing in the manufacturing process, we aim to enhance our capabilities and sell solar panels to residential / commercial sector in order to reduce production costs and make clean energy solutions more accessible to our customers.

5. **Scope of Work.** The scope of work includes but is not limited to:

- a. **Facility Design.** Design a layout for the assembling line, ensuring optimal space utilization and workflow efficiency.



- b. **Equipment Selection.** Recommend and provide specifications for the necessary machinery and equipment required for the assembling process.
- c. **Installation.** Execute the installation / commissioning of the assembling line ensuring adherence to industry standards, safety regulations and compliance with international certifications.
- d. **Testing and Quality Assurance.** Implement a comprehensive testing and quality assurance process to guarantee the reliability and performance of the solar panels being assembled.
- e. **Training.** Provide training sessions for our staff to operate and maintain the assembling line effectively.
- f. **Continuous Supply of Raw Materials.**
  - (1) Provision all the raw materials involved in assembling of Solar Panels (including solar cells, stringers, fingers, Bus-bars, aluminum frames, PV back sheet, EVA films, laminators, Junction boxes, Silicone Sealant, Glasses, testers etc) at optimum cost to ensure financial viability for selling / marketing solar panels being assembled.
  - (2) Initially firm will be responsible for provision of raw material, however, firm should provide details of vendors / share sources for proc of raw material for subsequent production.
- g. **Ongoing Technical Support & Assistance.** Provide technical support in terms of training sessions, maintenance of machinery for efficient production and technical support / assistance to overcome any emerging issues.

## 6. **Qualifications of Vendors / Suppliers**

- a. **Industry Experience:**
  - (1) Proven track record in the establishment of solar panel assembling lines at various locations (inland / abroad) including in designing and implementing solar panel manufacturing processes.
  - (2) Combination of technical expertise, industry knowledge, business acumen and a focus on quality and sustainability for establishing and running a successful solar panel assembling line.

b. **Technical Expertise:**

- (1) Knowledge of solar panel technology, including the various types of solar cells (e.g monocrystalline, polycrystalline, PERC, Topcon), materials and their manufacturing processes along with equipment required for solar panel assembling.
- (2) Familiarity with the solar industry, including market trends, regulatory requirements and certification / standards. Understanding the supply chain for solar panel components and materials, as well as logistics and distribution channels.
- (3) Proficiency in selecting and integrating state-of-the-art equipment for solar panel assembly.
- (4) Solar panels should meet industry standards for efficiency, durability and performance like IEC61215, IEC61730, IEC61646, IEC61215 UL916, UL1703 etc.
- (5) Customization options to meet specific project requirements.
- (6) Latest solar cell technology be offered in terms of cell materials and assembling technology indicating pros & cons of each.

c. **Regulatory Compliance:**

- (1) A strong understanding of local and international regulations / related to solar panel manufacturing.
- (2) Experience in navigating and ensuring compliance with industry standards, certifications, and safety regulations.

d. **Quality Assurance and Testing:**

- (1) Experience in implementing robust quality assurance and testing protocols being followed internationally in solar panel assembling projects.
- (2) Implementing vigorous quality control processes to ensure the reliability and performance of solar panels including testing procedures, compliance with standards and continuous improvement practices.



- e. **Project Management Skills:**
- (1) Proven project management capabilities, including the ability to meet deadlines and deliver projects within budget.
  - (2) Efficient coordination and communication skills to manage all aspects of the solar panel assembling line project.
- f. **Innovation and Technology Adoption:**
- (1) A history of embracing and implementing innovative technologies in the solar manufacturing process.
  - (2) Capability to contribute to technological advancements (in future) for enhanced solar panels efficiency and performance.
- g. **Scalability and Flexibility:**
- (1) Ability to design and implement a solar panel assembling line that is scalable to accommodate future production increase.
  - (2) Flexibility to adapt to changing technological and market requirements.
- h. **Training and Support:**
- (1) Experience providing comprehensive training programs for client staff on operating and maintaining solar panel assembling lines.
  - (2) A commitment to ongoing support and collaboration post-implementation.
- i. **Financial Stability:**
- (1) Financial stability and a proven ability to manage and deliver projects of similar scale and complexity.
  - (2) Transparent financial practices and a solid reputation in the industry.
- j. **References:**
- (1) Positive references from previous clients or projects in the solar panel assembling sector.
  - (2) The ability to showcase successful case studies and testimonials.

7. **Proposal Submission Instructions:**

- a. Include all above mentioned aspects "Qualification of vendors" in your proposal for better evaluation
- b. Company Profile: Provide an overview of your company, including relevant experience in establishing solar panel assembling lines.
- c. Project Approach: Outline your proposed approach to designing, installing, and commissioning the assembling line.
- d. Timeline: Provide a detailed project timeline, including key milestones and deadlines.
- e. **Cost Estimate.** Provide a comprehensive cost estimate for following:-
  - (1) Setting up entire project, including equipment & its installation and any additional expenses for establishment of solar panels assembly line.
  - (2) Provision of all raw materials involved in assembling of Solar Panels (mentioned in para 5f above) at HIT on an optimum cost to ensure financial viability for selling / marketing solar panels being assembled.
- f. Include any specific requirements or documents you want to include, such as a detailed project plan, cost breakdown, and timeline.

We appreciate your interest in working with us and look forward to receiving your proposal.

Best regards,

8. **Appendix.** Technical details indicating assembling processes and machinery involved are attached as **Anx 'A'**.
9. **Evaluation Criteria.** Evaluation Criteria is att as **Anx 'B'**.
10. Site visit opportunity be offered for a better understanding. During site visit, firm's representative should be available to tour the project site and give access to visit all facilities of solar panel assembly machinery.

By achieving the above mentioned expectations and outcomes, HIT aims to solidify its position as a key player in the renewable energy sector, drive positive environmental impact and contribute to the broader goal of a sustainable and clean energy future.

**TECHNICAL DETAILS – SOLAR PANELS ASSEMBLING LINE**  
**(100~200MW)**

1. Following machinery is involved in assembling of solar panels:-

Ser	Machines	Process flow
1	Solar cell tester	Solar cell sort
2	Laser cutting machine	Cut solar cell
3	Tabbing and sting machine	Tabbing and string cell
4	EVA backsheet cutting machine	Cut EVA film
5		Cut Back sheet
6	Bur bar cutting machine	Cut bus bar
7	Glass loading machine	Load glass to conveyor
8	Laying up machine	Lay EVA cell & backsheet
9		Bussing
10		Stick fixing tape
11	EL & VI tester	EL & VI tester
12	Laminating machine	Laminating
13	Trimming machine	Trimming
14	Inspection machine	Inspection
15	Gluing and framing machine	Gluing and framing
16	JB gluing machine	Fix junction box
17	Soldering machine	Soldering bus bar to JB
18	Gel Injection machine	Injection JB gel
19	Unloading machine	Unload to solid
20	Grinding machine	Grind edges
21	Solar module tester	IV tester
22	Hlpot & resistance test	Hlpot & resistance test
23	EL & VI tester	EL & VI test
24	Unloading & Packing machine	Unload and pack

2. Above mentioned machinery / processes have been obtained from various sources and it is not necessary to quote the same machinery in your proposal. Details of machinery involved according your solution be shared indicating possibility for both options i.e manual machines and automated machines (where applicable).



## SECTION 4: BID EVALUATION CRITERIA

### EVALUATION CRITERIA

1. **Qualification Criteria.** Performance and Technical Evaluation will be used as qualification criteria with 50% passing marks in each group / main head. Out of qualified bidders, best evaluated bid will be ascertained having 40% weightage in Technical Evaluation and 60% weightage in price Evaluation :-

Cat	Mks	% Weightage	Remarks
Technical Evaluation with respect to technical parameters specification of project	100	40	<ul style="list-style-type: none"> <li>• head/sub Group/head</li> <li>• Minimum 50% to qualify in each Group / Main head/sub Group / head</li> </ul>
Price Evaluation	100	60	

2. **Marks Distribution Qualification Matrix**

a. **Technical Evaluation:-**

Ser	Description	Maximum Points
<b>Performance Evaluation</b>		
(1)	Financial Soundness	10
(2)	Past Experience / Performance	10
(3)	Project's Technical Evaluation Parameters	80
<b>Total</b>		<b>100</b>

Further details of criteria for each of the above categories are as under:-

(1) **Financial Soundness.** Credit marks for financial soundness of the firm shall be on the basis of following qualification:-

Ser	Description	Max Points	Explanation for Marks Obtained	Remarks
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(a)	Annual turnover of last 3 x Fin Years	5	Marks will be calculated as per the formula:- Score = $\frac{(Y1+Y2+Y3) * 5}{(3 * X)}$ • Y1,Y2,Y3 respective annual turnovers of last through years • X= Last purchased rate / estimated value of the quoted items available with HIT.	• Third Party generated verifiable audit reports for last through financial years to be provided for minimum of upto Rs 5 Mn
(b)	Working Capital of last through years	5	Marks will be calculated as per the formula:- Score = $\frac{(Y1+Y2+Y3) * 5}{(3 * (X/2))}$ • Y1, Y2 and Y3 being respective working capitals of last through years. • X= Last Purchase Rate / Estimated value of the quoted items Available with HIT.	• Else Income Tax return for last 3 x financial years, fully verified by ITO of the circle/region.
(c)	Litigation history where decision went against the firm	-	One mark will be deducted for each litigation history, if any, where decision went against the firm	As Per Anx 'J'
<b>Total</b>		<b>10</b>		

- (2) **Past Experience / Performance:-** Credit marks for past experience/performance shall be awarded on the basis of following criteria (data will be attached duly verified from the concerned procurement agency as per format attached as per Annexure 'I'):-

Ser	Description	Max Points	Explanation for Marks Obtained
(a)	Project of Similar nature	2	
(b)	Contracted store supplied beyond DP in last 3 years	2	X1 = Total value of last 3 years' contracts. X2 = Total value of last 3 years' contracts completed within DP first go. <b>Formula:</b> Score = $\frac{X2 * 2}{X1}$
(c)	Quantum of rejections of items in the last 3 years contracts	1.5	X1 = Total value of last 3 years contracts. X2 = Total value of the passed items in first go in the last 3 years' contracts. <b>Formula:</b> Score = $\frac{X2 * 1.5}{X1}$
(d)	Timely provision of documents/ bank guarantees / bid security money	1.5	X1 = Total no of contracts concluded in last 3 years. X2 = Total number of timely provided bank guarantees/ bid securities against the total no of contracts in last 3 years. <b>Formula:</b> Score = $\frac{X2 * 1.5}{X1}$
(e)	No of contracts / items still pending beyond DP	2	1 x mark would be deducted for each contract in hand, which is pending beyond DP over 2 months



(f)	Risk and Expense action against firm approved	1	0.5 x marks will be deducted against each Risk and Expense action approved
<b>Total</b>		<b>10</b>	

**(3) Project Technical Evaluation Parameters /Specification (80 Marks)**

Sr	Description	Max Points	Remarks
a.	List of clients/ customer along with contract detail when similar machine was provided by the supplier	10	
b.	2x Years additional warranty	10	
c.	Machine quoted should be from (Germany/UK/China /equivalent) and firm have strong track link with OEM (Doc evidence be provided),	10	
d.	Free of cost training/installation/commissioning of said machine will be required.(Req under taking on affidavit)	10	
e.	Availability of spares from local market.	5	
f.	Availability of Technical support by the firm.(list of Firms technical expertise be attached)	5	
g.	List of expendables offered with the equipment. (List to be attached)	10	
h.	Installation facility extended by the firm.	10	
i.	List of complete accessories offered. (List to be attached of accessories)	10	
j.	Internationally recognized quality certification of the offered machine.(certificate to be attached)	10	
k.	Similarity with required model offered by firm	10	
<b>Total</b>		<b>100</b>	
Score in Technical evaluation = $\frac{X}{100} \times 40$			
Marks Obtain out of 100 = X			
Total numbers obtained in Technical Quotation =			
<p><b>Note:</b> i. Contract will be awarded to most advantageous bidder 40 &amp; 60% as per above mentioned Evaluation/Qualification Criteria.</p> <p>ii. Newly participated firm or firm having no past performance record with HIT will be given 50% marks in each category.</p>			