



# Lovkesh Goel

Chartered Engineer, Registered Valuer,  
Surveyor & Loss Assessor

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CEng (I), MIE, RV, FIV, FIILSLA, MICA  
B.E. (Mech), MSc (Val)  
M-146671-7; IBBI/RV/10/2019/11866  
F-23332; SLA-66424

Ref.: LG/HS/CE/2026-27/64

Dated: 16.09.2026

## CERTIFICATE FROM INDEPENDENT CHARTERED ENGINEER

To,

Board of Directors,  
HIMALAYAN SOLAR LIMITED,  
SCO 411, 2<sup>nd</sup> Floor, Sector – 20,  
Panchkula, Haryana – 134117.

FINSHORE MANAGEMENT SERVICES LTD

Category - I Merchant Banker,  
207, Anandlok Block A,  
227, AJC Bose Road,  
Kolkata – 700020.

(Finshore Management Services Ltd are referred to as the “Book Running Lead Managers” or the “BRLMs”)

**Sub.:** Certificate for Capacities, Production and Utilization of Manufacturing Units of Himalayan Solar Limited for Initial Public Offer of Himalayan Solar Limited (the “Company”).

I, LOVKESH GOEL, the undersigned, confirm that I am a duly registered as a **Chartered Engineer** with **The Institution of Engineers (India)** bearing registration number **M-146671-7** (Certificate of registration enclosed herewith as **Annexure – I**), and that I am authorized and competent to issue this certificate. Further, I confirm that the aforesaid registration is valid as on date hereof, and as such, I am duly qualified to issue this certification.

Pursuant to the engagement letter dated **11.09.2025**, I have been engaged by the Company to carry out an independent verification for certifying certain information identified in **Annexures – II, III, IV and V** hereto, to be included in the Materials (as defined below)



50 - 51, First Floor, Pocket – 8, Sector – 22, Rohini, Delhi – 110086.



Based on the information, explanations and representations provided to me by the Company along with the basis of working and assumptions followed, wherever applicable, examination and verification of the manufacturing plant, physical inspection of the equipment and based on my verification of the relevant records and documents of the Company, I, hereby certify the following as true, fair, complete, accurate and not misleading:

- Details of the Company's aggregate installed production capacities, and the capacity utilization of the Company's production facilities, during the relevant periods, are enclosed as **Annexure – II** and **Annexure – IV** hereto;
- The products manufactured by the Company in each of the production facilities are enclosed as **Annexure – II**;
- Details of equipment inspected and its Condition, Manufacture / Make / Model and Yr of Manufacture and its individual capacity, Residual Life, are enclosed as **Annexure – III**; and
- Description of the procedure pertaining to installed production capacity certificate issued to the Company enclosed as **Annexure – V** hereto.

The information relating to the estimated annual installed production capacities and the capacity utilization of the manufacturing units included in the materials (as defined below) is based on a number of assumptions and estimates of the management, including expected operations, availability of raw materials, expected unit utilization levels, downtime resulting from scheduled maintenance activities, downtime resulting from change in stock keeping units for a particular product, unscheduled breakdowns, as well as expected operational efficiencies.

In particular, the following assumptions have been made in the calculation of the estimated annual installed production capacities of the Company's manufacturing units, and are certified by me:

- Past experience of the management to manufacture the products
- Available orders in hand for the products
- Raw material consumption and the availability of raw materials to estimate the production of each product

It may be noted that the installed production capacity is worked out based on machinery installed, size of plant, electricity and power consumption statutory approvals, number of labour employed, duration/ number of shifts per day and the sum of various products for which the unit is capable of manufacturing and is already manufacturing.

As per the documents and records provided by the Company, the Company does not have any manufacturing plant(s) outside India.

I represent that my execution, delivery, and performance of this certificate have been duly authorized by all necessary actions (corporate or otherwise).




I confirm that the information provided by us is complete, true, correct, adequate, not misleading in any material respect and is adequate to enable investors to make a well-informed decision.

I further confirm that I am an independent person with no direct or indirect interest in the Company and its subsidiaries except for provision of professional services in the ordinary course of my profession. Further, I am not in any way connected with or related to the Company, subsidiary/ joint venture/ associates, its promoters, promoter group, its key managerial personnel, its senior managerial personnel, its directors, or directors of its subsidiary/ joint venture/ associate, its group companies or directors of its group companies, the Book Running Lead Managers, or their affiliates.

I hereby confirm that the information in this certificate and the annexures, including any extracts thereof, may be reproduced in the draft red herring prospectus ("**DRHP**") to be filed with the Securities and Exchange Board of India ("**SEBI**"), BSE Limited ("**BSE**"), National Stock Exchange of India Limited ("**NSE**", and together with BSE, the "**Stock Exchanges**"), the red herring prospectus ("**RHP**") and the prospectus ("**Prospectus**" and together with the DRHP and RHP, the "**Offer Documents**") to be filed with the Registrar of Companies, NCT of Delhi & Haryana ("**RoC**") and thereafter with SEBI and the Stock Exchanges or any other document(s) to be issued, published or filed in connection with the Offer, including any publicity materials, corporate presentations and roadshow presentations (all such materials together with the Offer Documents, the "**Materials**").

I agree to keep the information regarding the Offer strictly confidential.

I consent to be named as an "expert" as defined under Section 2(38) read with Section 26(5) of the Companies Act, 2013, as amended and the rules framed thereunder, in the Materials. Further, I confirm that I am not, and have not been, engaged or interested in the formation or promotion of the management of the Company. The following details with respect to us may be disclosed in the Materials.

|                                                          |                                                                    |
|----------------------------------------------------------|--------------------------------------------------------------------|
| Name                                                     | LOVKESH GOEL                                                       |
| Membership No.                                           | M-146671-7                                                         |
| Name & Address of the Institution under which registered | The Institution of Engineers (I), Kolkata, India                   |
| Address (Office)                                         | 50 - 51, First Floor, Pocket 8, Sector 22, Rohini, Delhi - 110086. |
| Phone No.                                                | +91-9654045411                                                     |
| Email ID                                                 | Lgoel.associates@gmail.com                                         |

I undertake to immediately inform the Company and the Book Running Lead Managers, and the legal counsels to each of the Company and the Book Running Lead Managers, in writing of any changes or qualifications or any material developments in respect of the matters covered in this certificate until the date when the Equity Shares issued pursuant to the Offer commence trading on the Stock Exchanges. In the absence of any such written communication from the undersigned, the above information contained in the Materials and certified herein should be taken as true, correct, accurate and updated until the date when the Equity Shares issued pursuant to the Offer commence trading on the Stock Exchanges.

*Lovkesh Goel*

50 - 51, First Floor, Pocket - 8, Sector - 22, Rohini, Delhi - 110086.



I confirm that I shall not withdraw this consent before delivery of a copy of the DRHP, RHP and Prospectus or Offer Documents to the SEBI and the Stock Exchanges.

Further, I also give my consent to include this certificate as part of the 'Material Contracts and Documents for Inspection' in the Offer Documents, thereby making it available to the public for inspection.

This certificate may be relied upon by the Company, the Book Running Lead Managers, and the legal counsels to each of the Company and the Book Running Lead Managers. I hereby authorize you to deliver this certificate to SEBI, the Stock Exchanges, the RoC and any other governmental or regulatory authority as may be required.

I hereby consent to this certificate being disclosed by the Book Running Lead Managers, if required (i) by reason of any law, regulation, or order of a court or by any government or competent regulatory authority, or (ii) in seeking to establish a defense in connection with, or to avoid, any actual, potential, or threatened legal, arbitral, or regulatory proceeding or investigation.

All capitalized terms not defined herein would have the same meaning as attributed to it in the DRHP.

Thanking you.

Yours faithfully

**LOVKESH GOEL**  
**Chartered Engineer**  
**Regn. No.: M-146671-7**  
**Place: Delhi**  
**Dated: 16.09.2026**

**Enclosures: -**

|                       |                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------|
| <b>Annexure – I</b>   | Certificate of Registration.                                                                  |
| <b>Annexure – II</b>  | Installed Production Capacity of the facilities.                                              |
| <b>Annexure – III</b> | Equipment in Current Manufacturing Facility; Plant Layout & Manufacturing Process Flow Chart. |
| <b>Annexure – IV</b>  | Average Capacity Utilization of the Company's Manufacturing Facilities.                       |
| <b>Annexure – V</b>   | Procedure adopted pertaining to certification.                                                |



## Annexure - I

### Certificate of Registration

**The Institution of Engineers (India)** 025429

M-146671-7



By virtue of Qualification, Professional training and Corporate Membership of this Institution

**LOVKESH GOEL**  
OF  
**MECHANICAL ENGINEERING DIVISION**

is hereby authorised to use the style and title of

**Chartered Engineer [India]**

Dated this **Fourth** day of **July** **2013**

Dated **04/07/2013**

Secretary and Director General



## Annexure - II

**Table – 1: Company's Current Aggregate Installed Production Capacity of Solar PV Modules, as per product groups, as on 16.09.2026.**

| Sr. No. | New Manufacturing Unit Location                                                                                                                                                       | Area Covered by the Facility (Sq. Ft.) | Products                   | Installed Production Capacity (MW per Annum) |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------|----------------------------------------------|
| 1.      | Plot/Killa No. 3 and 4, RHS, Khatoni No. 1132, Murabba No. 249, Khewat No. 980, Near Aryakulam International School, Assandh – Kohand State Highway, Munak, Karnal, Haryana – 132040. | 25,000                                 | Mono PERC Solar PV Modules | 60 MW                                        |

**Table - 1**

The covered area of the facility has been certified based on the registered Lease Agreement for the manufacturing facility, for a lease period from 01.12.2024 to 30.11.2033.

**Table – 2: Company's Previous Installed Production Capacity Of Solar PV Modules, as per product groups, functional as on 31.03.2024.**

| Sr. No. | Old Manufacturing Unit Location                                                       | Area Covered by the Facility (Sq. Ft.) | Products                         | Installed Production Capacity (MW per Annum) |
|---------|---------------------------------------------------------------------------------------|----------------------------------------|----------------------------------|----------------------------------------------|
| 1.      | Plot No. 237, HSIIDC Industrial Estate, Alipur, Barwala, Panchkula, Haryana – 134118. | 11,700                                 | Polycrystalline Solar PV Modules | 40 MW                                        |

**Table - 2**

*The machinery used for manufacturing Polycrystalline Solar PV Panel is technologically outdated now and hence not in operation. The machinery has been disposed of as per the information provided by the management of the Company. The capacity of the previous manufacturing unit as on 31.03.2024 has been certified based on the enlisted capacity of 'Himalayan Solar' in the List of Manufacturers and Models of Solar PV Modules of ALMM Order published by Ministry of New and Renewable Energy (MNRE), Govt. of India, vide Circular No.: F.No. 283/54/2018-GRID SOLAR-Part (1) dated 29.09.2021. Please refer to Page 16, Sr. No. 27 of the above-mentioned Circular.*




F. No. 283/54/2018-GRID SOLAR-Part(1)

भारत सरकार / Government of India  
नवीन और नवीकरणीय ऊर्जा मंत्रालय / Ministry of New & Renewable Energy  
ग्रिड सौर ऊर्जा प्रभाग / Grid Solar Power Division

Block No. 14, C.G.O. Complex,  
Lodhi Road, New Delhi - 110003.  
Dated: 29<sup>th</sup> September, 2021

**OFFICE MEMORANDUM**

**Sub: Updation of List I (Manufacturers and Models of Solar PV Modules) of ALMM Order, 2019 - Reg.**

Reference is invited to this Ministry's O.Ms of even no. dated 10.03.2021, regarding implementation of Approved Models and Manufacturers of Solar Photovoltaic Modules (Requirement for Compulsory Registration) Order, 2019 and publishing List - I (Manufacturers and Models of Solar PV Modules) of ALMM Order, 2019.

2. The List - I (Manufacturers and Models of Solar PV Modules) of ALMM Order, 2019 was updated vide this Ministry's O.M. of even no. dated 17.08.2021.

3. This Ministry has further updated the List - I (Manufacturers and Models of Solar PV Modules) of ALMM Order, 2019 as on 29.09.2021, i.e. Revision - 2 and the same is enclosed herewith as Annexure - I.

4. This issues with the approval of Hon'ble Minister (NRE & Power).

  
(Sanjay G. Karndhar)  
Scientist-D

Tel: 011 - 24363498

E-mail : karndhar.sg@nic.in

**To: All Concerned**

**CC: Director (Technical), NIC, MNRE for uploading this document on MNRE's website**

|    |                           |                                                             |    |     |                    |                       |              |                 |      |            |            |
|----|---------------------------|-------------------------------------------------------------|----|-----|--------------------|-----------------------|--------------|-----------------|------|------------|------------|
| 27 | Himalayan Solar Pvt. Ltd. | HSIDC Industrial Estate, Alipur Barwala, Pauchkula, Haryana | 40 | i   | Multi C-Si Modules | HDMSOL-00243 (300 Wp) | HDMSOL-85242 | 72 (Full Cells) | 1000 | 29.09.2021 | 28.09.2023 |
|    |                           |                                                             |    |     |                    | HDMSOL-85243          |              |                 |      |            |            |
|    |                           |                                                             |    |     |                    | HDMSOL-72             |              |                 |      |            |            |
|    |                           |                                                             |    | ii  | Multi C-Si Modules | HDMSOL-30243 (330 Wp) | HDMSOL-20243 | 72 (Full Cells) | 1000 | 29.09.2021 | 28.09.2023 |
|    |                           |                                                             |    |     |                    | HDMSOL-25243          |              |                 |      |            |            |
|    |                           |                                                             |    |     |                    | HDMSOL-30243          |              |                 |      |            |            |
|    |                           |                                                             |    |     |                    | HDMSOL-35243          |              |                 |      |            |            |
|    |                           |                                                             |    | iii | Multi C-Si Modules | HDMSOL-60 (260 Wp)    | HDMSOL-50242 | 60 (Full Cells) | 1000 | 29.09.2021 | 28.09.2023 |
|    |                           |                                                             |    |     |                    | HDMSOL-60             |              |                 |      |            |            |
|    |                           |                                                             |    |     |                    | HDMSOL-65242          |              |                 |      |            |            |
|    |                           |                                                             |    |     |                    | HDMSOL-70242          |              |                 |      |            |            |
|    |                           |                                                             |    | iv  | Multi C-Si Modules | HDMSOL-75242 (275 Wp) | HDMSOL-75242 | 60 (Full Cells) | 1000 | 29.09.2021 | 28.09.2023 |

**Page no. 16 Sr.no. 27 of Circular No.: F.No. 283/54/2018-GRID SOLAR-Part (1) dated 29.09.2021**



### ANNEXURE – III

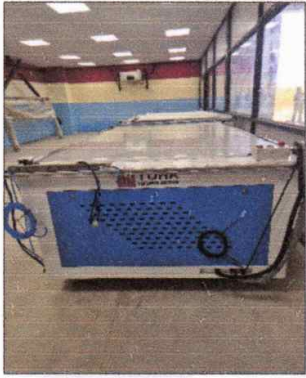
#### **1. Details of Equipment inspected at the Company's Current Manufacturing Facility**

**Location: Plot/Killa No. 3 and 4, RHS, Khatoni No. 1132, Murabba No. 249, Khewat No. 980, Near Aryakulam**

**International School, Assandh-Kohand State Highway, Munak, Karnal, Haryana - 132040**

| Sr. No. | Name of Equipment                                   | Qty (Sets) | Machine Photos                                                                      | Capacity of Equipment            | Condition | Manufacture / Make / Model and Yr of Manufacture | Residual Life (Yrs) |
|---------|-----------------------------------------------------|------------|-------------------------------------------------------------------------------------|----------------------------------|-----------|--------------------------------------------------|---------------------|
| 1       | Solar Cells Automatic Tabber Stringer               | One        |    | 2,400 Cells per hour             | New       | Make: HBS, China; Model: HBS-SP2600, Yr: 2025    | 15                  |
| 2       | Automatic Layup Machine                             | One        |  | Aligned with Tabber and Stringer | New       | Make: HBS, China; Model: HBS-LP2600, Yr: 2025    | 15                  |
| 3       | Automatic Solar Module EL and AOI Appearance Tester | One        |  | Aligned with Tabber and Stringer | New       | Make: Yoha, China; Model: YH-EL8, Yr: 2025       | 15                  |
| 4       | Solar Photovoltaic Module Laminator                 | One        |  | Aligned with Tabber and Stringer | New       | Make: RISING, China; Model: SGCY-A2658, Yr: 2025 | 15                  |

  
**LOVKESH GOEL**  
 M-146671-7  
 Chartered Engineer

|   |                                            |     |                                                                                     |                                  |     |                                               |    |
|---|--------------------------------------------|-----|-------------------------------------------------------------------------------------|----------------------------------|-----|-----------------------------------------------|----|
| 5 | <b>Solar Panel Glue Dispensing Machine</b> | One |    | Aligned with Tabber and Stringer | New | Make: Yoha, China; Model: YHGM-AB, Yr: 2025   | 15 |
| 6 | <b>Solar Panel Framing Machine</b>         | One |    | Aligned with Tabber and Stringer | New | Make: Yoha, China; Model: YH-2514, Yr: 2025   | 15 |
| 7 | <b>Solar Panel EL Tester</b>               | One |   | Aligned with Tabber and Stringer | New | Make: Yoha, China; Model: YH-EL2400, Yr: 2025 | 15 |
| 8 | <b>Solar Module Simulator</b>              | One |  | Aligned with Tabber and Stringer | New | Make: Yoha, China; Model: YHPT-AAA, Yr: 2025  | 15 |
| 9 | <b>Automatic Cell Sorting Machine</b>      | One |  | Aligned with Tabber and Stringer | New | Make: Yoha, China; Model: YHS-36, Yr: 2025    | 15 |

*Signature*  

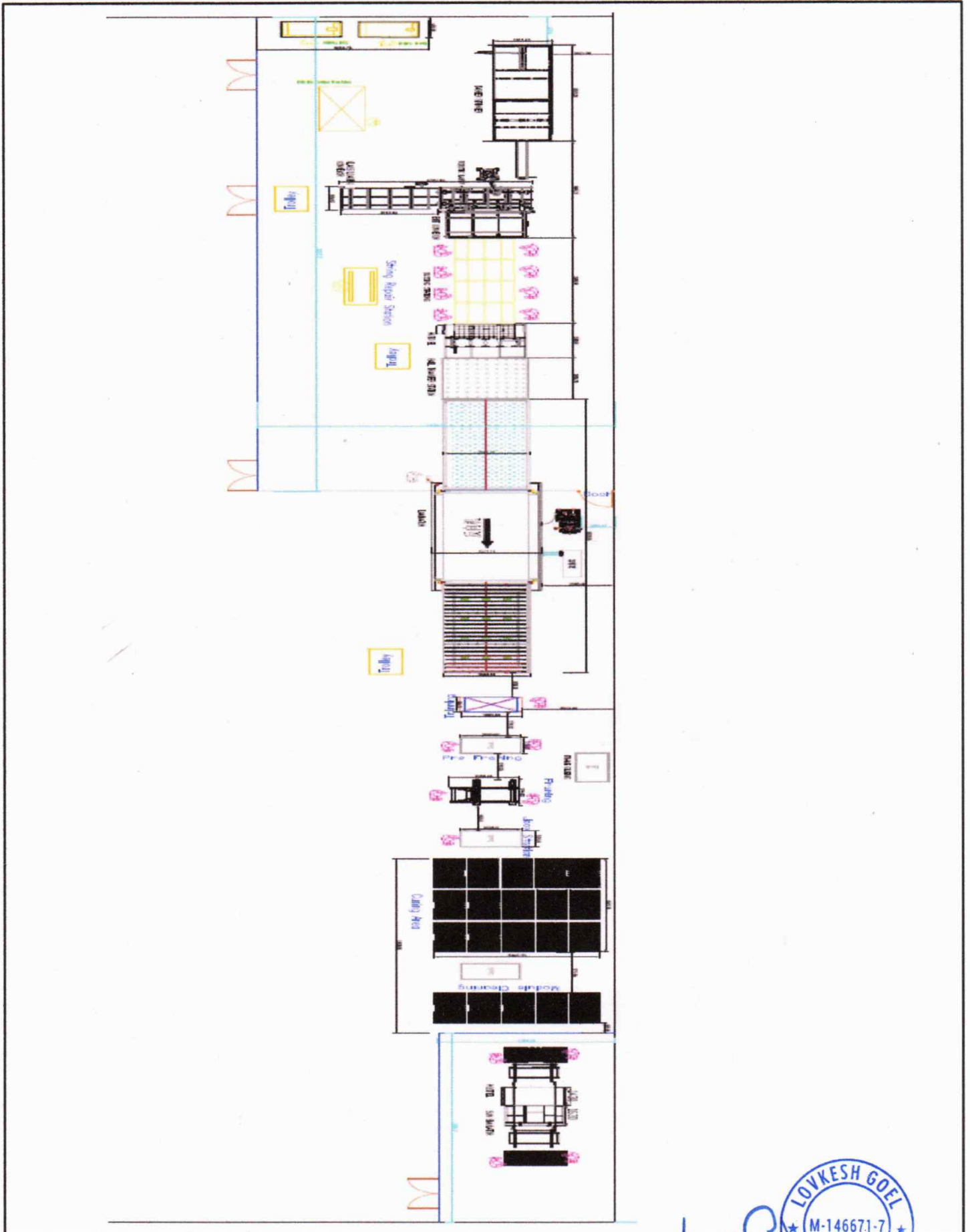

|    |                        |     |                                                                                     |                                  |     |                                                          |    |
|----|------------------------|-----|-------------------------------------------------------------------------------------|----------------------------------|-----|----------------------------------------------------------|----|
| 10 | Solar Cell Tester      | One |    | Aligned with Tabber and Stringer | New | Make: Yoha, China; Model: YHCT-AAA, Yr: 2025             | 15 |
| 11 | Bussing Conveyor       | One |    | Aligned with Tabber and Stringer | New | Make: Yoha, China; Model: YH-CY-001, Yr: 2025            | 15 |
| 12 | Vertical Conveyor      | One |   | Aligned with Tabber and Stringer | New | Make: Yoha, Model: YH-CY-002, Yr: 2025                   | 15 |
| 13 | Auto Turning Conveyor  | One |                                                                                     |                                  | New | Make: Yoha, China; Model: YH-CY-003, Yr: 2025            | 15 |
| 14 | Auto Rotation Conveyor | One |  | Aligned with Tabber and Stringer | New | Make: Yoha, China; Model: YH-CY-004, Yr: 2025            | 15 |
| 15 | Conveyor Control Unit  | One |                                                                                     |                                  | New | Make: Yoha, China; Model: YH-CY-CTS, Yr: 2025            | 15 |
| 16 | 3 Phase Transformer    | One |  | 630 KVA                          | New | Make: Power Electrical & Controls, India; Model: 630 KVA | 20 |

*LOVKESH GOEL*  
M-146671-7  
Chartered Engineer

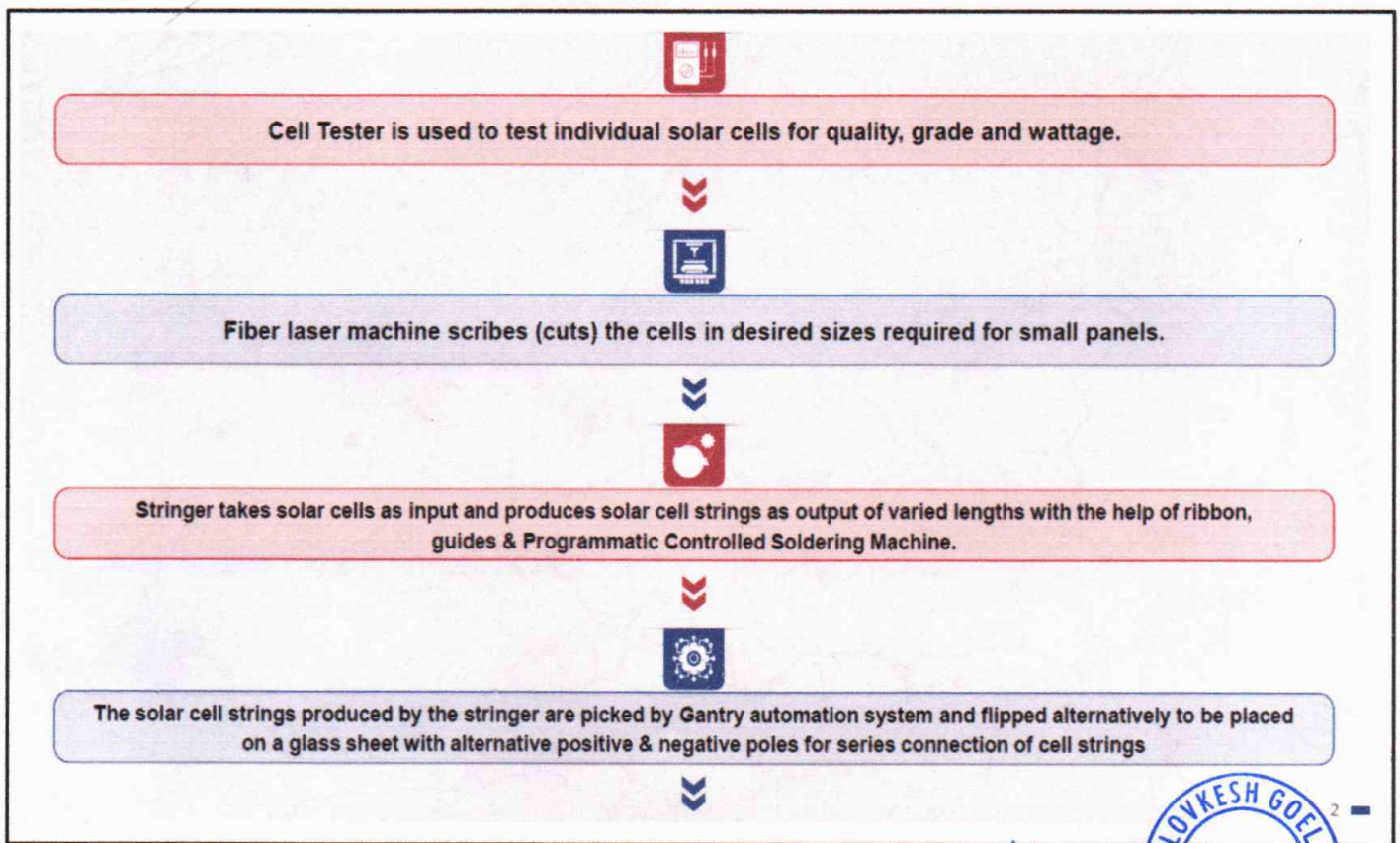
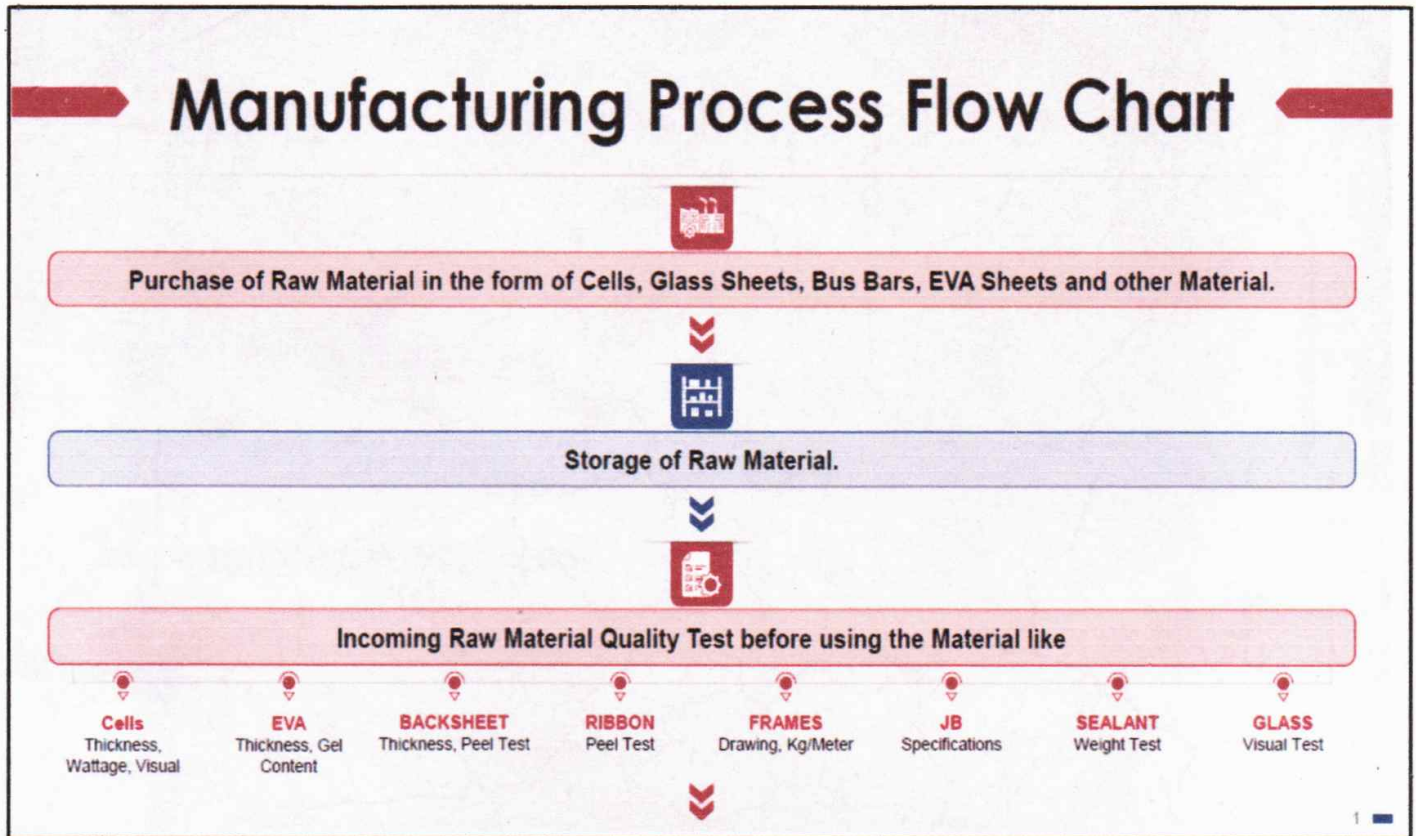
|    |                                           |           |                                                                                     |               |     |                                                                      |    |
|----|-------------------------------------------|-----------|-------------------------------------------------------------------------------------|---------------|-----|----------------------------------------------------------------------|----|
| 17 | Servo Voltage Regulator                   | One       |    | 630 KVA       | New | Make: Power Electrical & Controls, India;<br>Model: 630 KVA          | 20 |
| 18 | Air Compressor, Dryer and Tank            | One       |    | 129 cfm, 500L | New | Make: ELGI Equipments, India;<br>Model: EQ22-8.5;<br>Model: EGRD 200 | 15 |
| 19 | Electrical Panels and Distribution Boards | Multi-ple |   | Multiple      | New | --                                                                   | 15 |
| 20 | DG Set                                    | One       |  | 160 KVA       | Old | --                                                                   | 10 |

*LOVKESH GOEL*  
M-146671-7  
Chartered Engineer

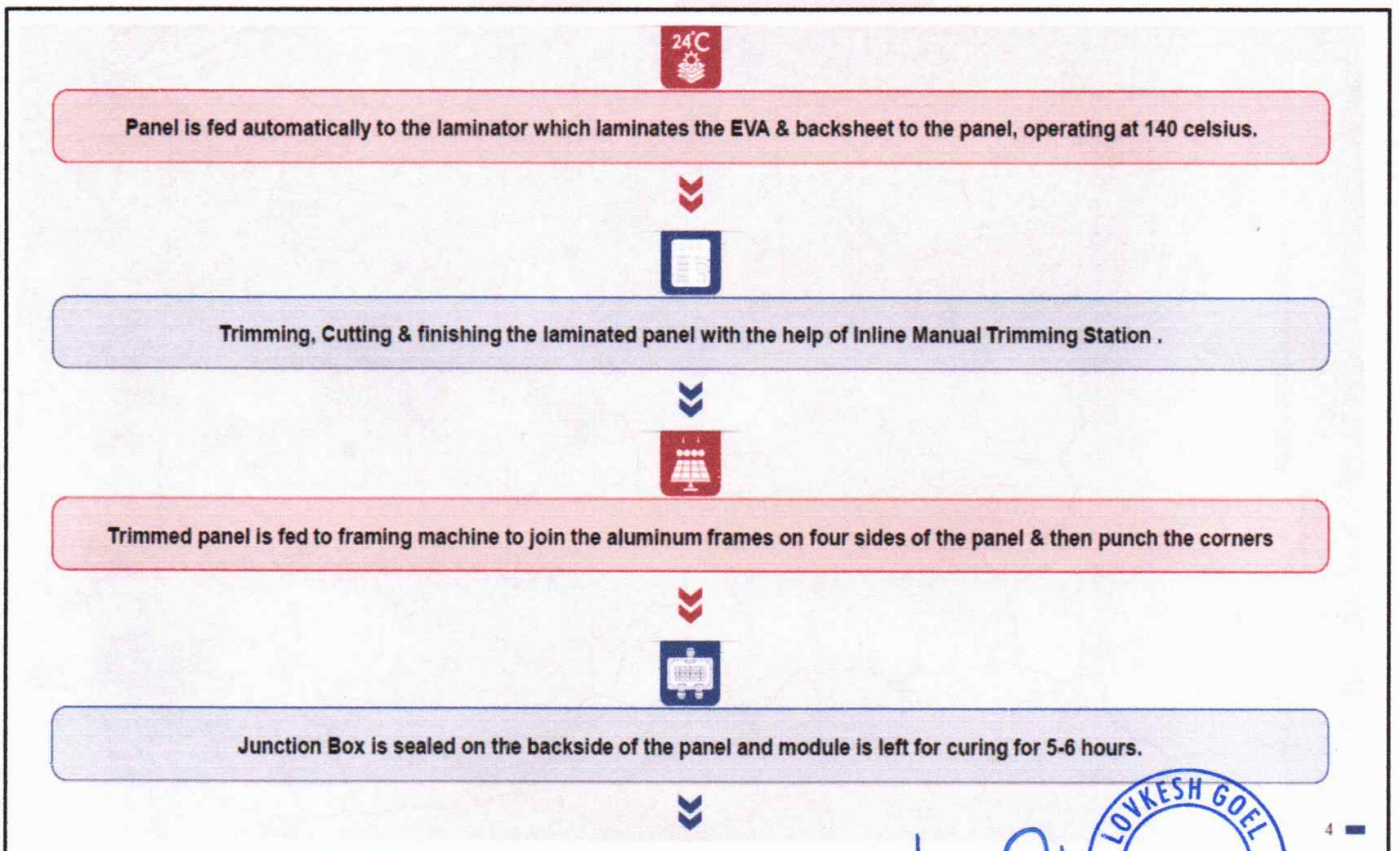
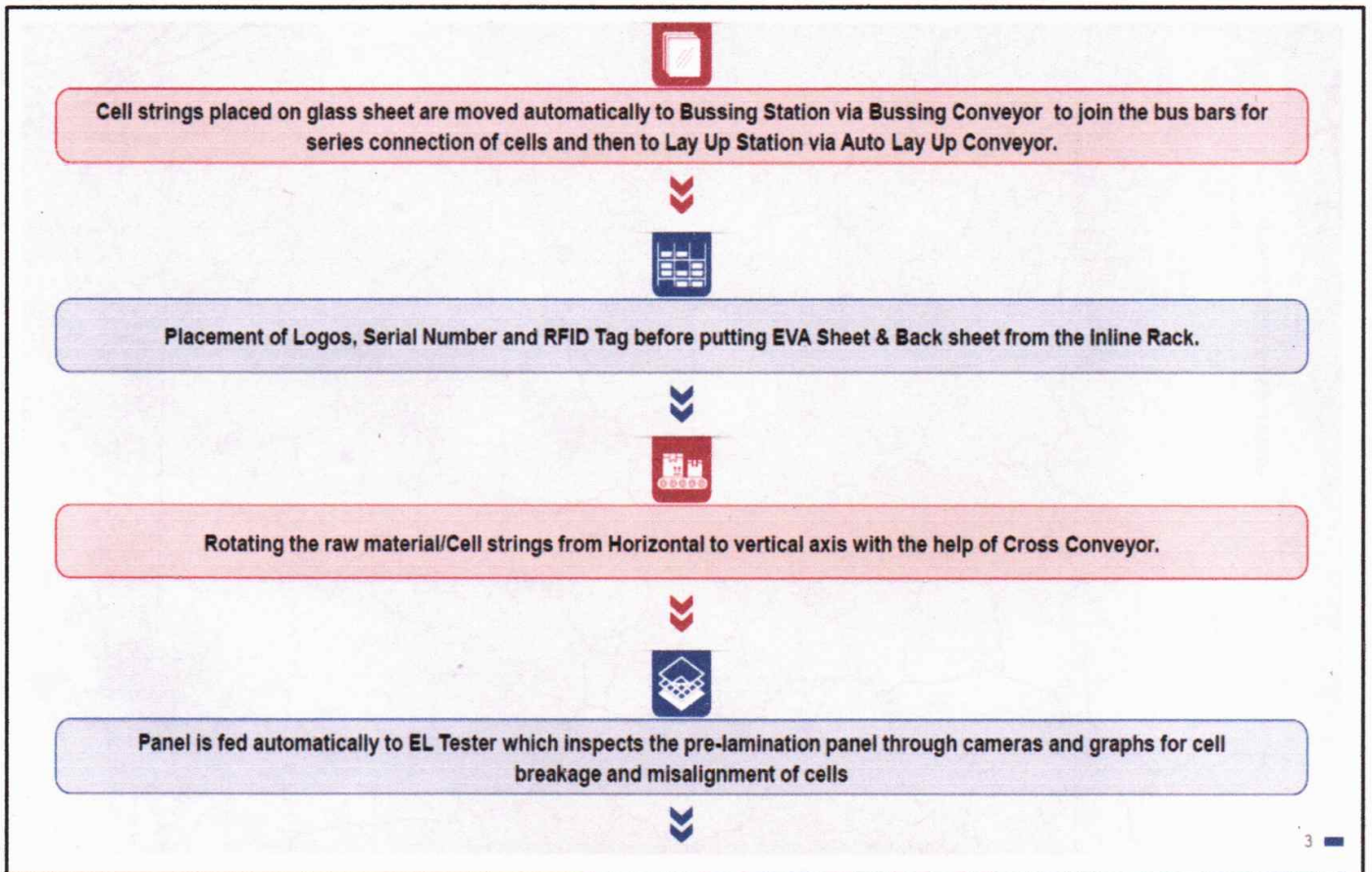
## 2. Plant Layout



### 3. Manufacturing Process Flow Chart



**LOVESH GOEL**  
M-146671-7  
Chartered Engineer



*Handwritten signature*

**LOVKESH GOEL**  
M-1466/1-1  
Chartered Engineer



After framing, curing and putting junction box on the panel, it is tested for Wattage curves & performance of the panel by simulating different heat/light conditions using AAA+ Sun Simulator.



Labeling the Solar Panels & write the required data in RFID Tag by using RFID Integrated Reader.



Clean the panel by using IPA (ISO Profile Alcohol).



Outgoing Quality Control before packing & shipping the material like:- Module Serial No, Peak Power, Visual, Frame, Back Label, Junction Box, Cleaning of Panel, RFID Tag, Frame Holes Proper gap, packing box



5



Solar PV Panels/Modules Packed and ready to be shipped.

6

### ANNEXURE – IV

The following table sets forth the Average Capacity Utilization of the Company's manufacturing facilities for the specified periods:

Location: Plot No. 237, HSIIDC Industrial Estate, Alipur, Barwala, Panchkula, Haryana – 134118.

| Name of the Product                           | Solar PV Modules |                |                |
|-----------------------------------------------|------------------|----------------|----------------|
|                                               | March 31, 2023   | March 31, 2024 | March 31, 2025 |
| Installed Capacity (MW per Annum)             | 40               | 40             | 40*            |
| Installed Capacity (No. of Solar PV Modules)  | 1,19,000         | 1,19,000       | 0              |
| No. of Solar PV Modules actually manufactured | 22,058           | 27,342         | 0              |
| Actual Production (MW per Annum)              | 7.28             | 9.02           | 0              |
| Annual Capacity Utilization (%)               | 18.54            | 22.98          | 0              |

\* The above table represents the installed capacity and capacity utilization of the Panchkula, Haryana plant, which manufactured Polycrystalline Solar PV Modules with a total annual capacity of 40 MW. This corresponds to approximately **1,19,000 nos. of 335W - 340W Polycrystalline Solar PV Modules (each with 72 full cells) per annum**, assuming effective 22-hours operations per day for an average 320 days every year. **However, production at this facility has been on hold since August 2024** due to a shift in focus toward Monocrystalline (Mono PERC) Solar PV Modules, which are preferred for government tenders. As a result, the installed capacity for the Panchkula unit in FY 2024-25 has been considered 40 MW but the end capacity utilization in the same period is zero due to the outdated technology throughout the year.




## New Manufacturing Unit: -

**Himalayan Solar Limited, the Company, has set up new manufacturing facility at Plot/Killa No. 3 and 4, RHS, Khatoni No. 1132, Murabba No. 249, Khewat No. 980, Near Aryakulam International School, Assandh-Kohand State Highway, Munak, Karnal, Haryana - 132040, with a capacity of 60 MW for which the machines and equipment were purchased in the March 2025. This plant is producing 16 Busbar Monocrystalline Passivated Emitter and Rear Cell (Mono PERC) Solar PV Modules, each consisting of 144 half-cells. It is expected to produce approximately 1,07,500 nos. of 555W-560W Mono PERC Solar PV Modules annually, assuming 22-hour operations every day for 320 days in a year. The Karnal plant has become operational as of March 2026.**

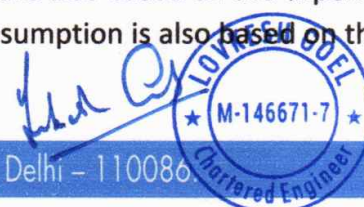
**Location: Plot/Killa No. 3 and 4, RHS, Khatoni No. 1132, Murabba No. 249, Khewat No. 980, Near Aryakulam International School, Assandh-Kohand State Highway, Munak, Karnal, Haryana - 132040.**

| Name of the Product                           | Solar PV Modules |                |                |
|-----------------------------------------------|------------------|----------------|----------------|
|                                               | March 31, 2024   | March 31, 2025 | March 31, 2026 |
| Installed Capacity (MW per Annum)             | -                | -              | 60             |
| Installed Capacity (No. of Solar PV Modules)  | -                | -              | 1,07,556       |
| No. of Solar PV Modules actually manufactured | -                | -              | 480*           |
| Actual Production (MW per Annum)              | -                | -              | 0.264*         |
| Annual Capacity Utilization (%)               | -                | -              | 0.45*          |

\* The plant became operational from 20th March, 2026 and hence, quantity mentioned above, calculated from commercial operation i.e. 20th March 2026 till 31st March 2026 for 11 days.

## Notes: -

1. The information relating to the installed capacity as of the dates included above are based on various assumptions and estimates that have been considered for calculation of the installed capacity. These assumptions and estimates include the standard capacity calculation practice of Solar PV Modules manufacturing industry after examining the calculations and explanations provided by the Company and the machineries installed at the facilities. The assumptions are also based on the experience of the Management of Company to manufacture the products. The assumption is also based on the three (3)





shifts that the Company is running for eight (8) hours a day. The assumptions and estimates considered include the following:

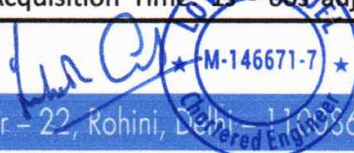
- i. Number of working days in a fiscal year - 320;
- ii. Number of shifts in a day - 3; and
- iii. Number of effective hours in a day - 22.

2. The information relating to the actual production as of the dates included above are based on the examination of the SAP/ internal production records provided by the Company, explanations provided by the Company, the period during which the manufacturing facilities operate in a fiscal year, expected operations, availability of raw materials, downtime resulting from scheduled maintenance activities, unscheduled breakdowns, as well as expected operational efficiencies.
3. Capacity utilization has been calculated based on actual production during the relevant fiscal year/period divided by the aggregate installed capacity of relevant manufacturing facilities as of at the end of the relevant fiscal year/ period.

#### **Projected Expansion: -**

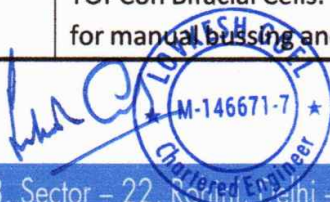
The company plans to further expand and modernize this manufacturing unit, at Karnal, Haryana, from 60 MW per annum of 16 Busbar Mono PERC Solar PV Modules to a new capacity of 160 MW per annum (by adding new capacity of 100 MW per annum), consisting of advanced technologies such as 25 Busbar Mono PERC and G2G TOPCon Bifacial Solar PV Modules. The Company is proposing to install the following additional machineries at its existing manufacturing facility situated at Munak, Karnal, Haryana: -

| Sr. No. | Name of the Machinery/Equipment (100 MW Fully Automatic Production Line) for manufacturing up to 25 BB Mono PERC and G2G TOPCon Bifacial Solar PV Modules | Specifications/ Functionality                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | 4000 type Automatic Tabber Stringer                                                                                                                       | Capacity 4000 cells per hour with a busbar expandable up to 25BB and cell thickness 110um to 200um compatible for TOPCon Bifacial Cells also along with Mono PERC Cells. Ribbon width 0.6mm-1.5mm flat/Round wire 0.25mm to 0.45mm, breakage rate < 0.1%, Automatic Cells Loading with 5 cassettes system, High precision industrial camera for Cells internal inspection, 4-axis industrial robot for accurate positioning of 0.01mm at a faster speed. It can work on thinner ribbons and thinner cells, specifically designed for TOPCon Bifacial technology |
| 2       | Robot Layup Machine                                                                                                                                       | Single string production beat > 6s, Long: 1650mm-2500mm wide: 900mm-1400mm, string spacing: 1-10mm, non-contact CCD positioning, fenced operation                                                                                                                                                                                                                                                                                                                                                                                                               |
| 3       | EL & VI + AI Appearance Detection Machine                                                                                                                 | Maximum field of vision: 2500mmx1400mm, Image Acquisition Time: 1s-60s adjustable, Equipped with 8                                                                                                                                                                                                                                                                                                                                                                                                                                                              |





|   |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |                                            | Industrial Cameras with 950 filter, Image Identification Accuracy < 0.5 mm/pixel, i7, 1 TB hard Disk                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 4 | 2761 Single Layer Double Chamber Laminator | Double Chamber Laminator to ensure double output for laminating the Modules as there is parallel load/unload of Modules while other chamber is laminating, Rated Power: 80W (so more energy efficient per cycle), Nominal Power: 60KW, CGF > 400L/min, Work Vacuum 40-100Pa, Lamination Area 2700x6100, Evacuation Time: 500s (adjustable). Double output without doubling the electrical energy consumption for Glass-Back sheet Modules. Can also handle TOPCon Bifacial Modules with transparent back sheet.                                                                     |
| 5 | Fully Automatic Framing Machine            | Automatic Modules pick up and placement on the Framing Machine with automatic unloading, Minimum frame forming size: 400mm × 400mm, Maximum frame forming size: 2600X1500mm. Same machine can be integrated in line with higher production capacities also so saves cost in future.                                                                                                                                                                                                                                                                                                 |
| 6 | In-Line Post Lamination EL Tester          | Automatic Inline EL Tester with Resolution: 1900*1200*4*3 Megapixels, Shooting mode: Single camera, Sensitivity: Detection crack < 0.2um, Effective test area: 2500*1400mm                                                                                                                                                                                                                                                                                                                                                                                                          |
| 7 | Sun Simulation IV Tester (A+A+A+)          | Class: A+A+A+, Inconsistent illumination: $\leq \pm 0.2\%[A+]$ , Averaged illumination inhomogeneity: $\leq \pm 1\%[A+]$ (both these factors lead to extremely consistent illumination required for Bifacial testing), Spectrum Matching: 0.875-1.1.25 [A+](this high spectral accuracy required for TOPCon Bifacial), Irradiation Range: 200 W/m <sup>2</sup> -1200 W/m <sup>2</sup> (lower irradiation testing helps in accurate NOCT Test results                                                                                                                                |
| 8 | 4000 NDC Laser Cutting Machine             | Fully Automatic Laser Non-Destructive Cutting Machine, Laser power: 60W, Scribing Speed: 4000 pcs/Hrs (1/2 Cell), Breakage Rate<0.05%, Non-contact Fiber UV Laser technology using cold processing so no micro-cracks so required for thin wafers of TOPCon Bifacial cells.                                                                                                                                                                                                                                                                                                         |
| 9 | Automatic Bussing Machine                  | Time<25s, Fragmentation Rate<0.02%, Maximum Compatible Module Size: Length 1650mm-2500mm Width 900mm-1400mm, Cell Size: 156mm-230mm, Camera vision positioning accuracy<0.2mm, Busbar Width: 4mm-8mm, Busbar Thickness: 0.18mm-0.40mm. It provides more uniform soldering temperature with minimal breakage for thin wafers of TOPCon Bifacial Cells. Integrated vision systems minimizes misalignment of soldering & increasing accuracy on thinner busbars of TOPCon Bifacial Cells. Eliminates up to 6 persons required for manual bussing and visual inspection. Reduces rework |



|    |                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                                                         | of soldering as it is very accurate for thinner busbars of TOPCon Bifacial Cells.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 10 | Automatic Glass Loading Machine (1)                     | Required for loading the front and back glass sheets onto the production line for double-glass (G2G) TOPCon Bifacial Solar PV Modules as otherwise it is very labor intensive & slow with > 20 kg weight of each Glass and highly prone to breakage. In TOPCon production, glass handling must be even more precise because cell alignment tolerances are tight to prevent shading losses on bifacial rear side.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 11 | Automatic EVA Cutting and Laying Machine (2)            | In TOPCon G2G, the EVA & TP sheets must be exactly the size of the glass with minimal margin otherwise slight overhang or shortage > 1mm can cause poor edge sealing and air pockets causing PID & moisture ingress risks, also clearer EVA & TP surfaces which is a must for TOPCon Bifacial efficiency.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 12 | Automatic TPT/Back sheet Cutting and Laying Machine (1) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 13 | Double Glass Laminating Machine (1)                     | For Glass-to-Glass Lamination required for G2G TOPCon Bifacial Solar PV Modules.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 14 | Double Glass Transfer Repair Machine (1)                | In normal back sheet modules, post-lamination handling is easier — the back sheet surface is lighter and less prone to breakage but for double-glass TOPCon, after lamination, the module must be carefully transferred for inspection and possible rework without causing edge chipping or glass breakage. This machine moves heavy laminated glass-glass modules automatically and evenly supported, allows safe positioning for cell string repairs (if minor defects are found before framing), minimizes human handling, which is a big risk with heavy glass panels, ensures clean back glass for optical performance of the backside of bifacial.                                                                                                                                                                                            |
| 15 | 12 Layers Long Edge Buffer (2)                          | One 12-layer long-edge buffer is required to solve timing, flow, and protection problems caused by the longer, heavier, and more sensitive double-glass modules. Double-glass lamination takes longer and needs a longer cooling time before handling. A 12-layer buffer stores multiple modules in sequence so that upstream (laminator) and downstream (EL/VI, framing) machines can run independently without waiting for each other. Similarly one buffer is required between auto-layup robot and auto-bussing machines because Stringer Tabber produces Strings at constant rates and auto-bussing machine works in batches as it needs time to align, tack, solder and cool the busbar for a full module layup. It also allows heat dissipation before bussing to avoid inaccuracy in positioning on thinner bus bars due to heat expansion. |
| 16 | 90 degree Transmission Conveyor (6)                     | Each conveyor type is performing a specific positioning, rotation, buffering, or routing function to maintain                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |



|    |                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 17 | Short Edge Transmission Conveyor (1)       | continuous, balanced line flow without human handling. Every machine in the line (laminator, EL tester, framing machine, auto bussing, glass loader, etc.) has a specific infeed and outfeed requirement. Modules need to be reoriented (short edge first, long edge first, or rotated 90°) to suit the next station. Multiple lines and bypass paths mean you need gates and switches to route panels to the right machine at the right time. Balancing machine cycle times requires buffer zones and alignment conveyors to avoid bottlenecks. Alignment conveyors run slower for accuracy; transmission conveyors run faster for throughput. TOPCon double-glass modules are heavier and more fragile than mono PERC single-glass: Require smooth orientation changes (more 90° conveyors and rotation conveyors). Need frequent alignment to keep EVA/TP edges inside glass boundaries. Gates are critical for inspection loops and rework bypasses, because defects found late in the process must be sent back without stopping the main line. |
| 18 | Short Edge Transmission + Gate (3)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 19 | Rotation Transmission (5)                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 20 | Long Edge Transmission (Alignment) (4)     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 21 | Long Edge Transmission Conveyor (2)        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 22 | Long Edge Transmission + Gate (10)         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 23 | 90 Degree Visual Inspection                | For detecting the defects that are light angle-dependent and hence need to be rotated to check the defects like micro-scratches on Glass, EVA bubbles/wrinkles, non-uniform sealant thickness on edges.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 24 | Automatic Junction Box Potting Machine (1) | To ensure complete water-proofing and insulation by avoiding Manual potting risks air bubbles or incomplete filling, which can lead to corrosion, short circuits, or PID (Potential Induced Degradation) over time in TOPCon Bifacial Solar PV Modules                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 25 | Hipot Tester                               | It is a mandatory quality control checkpoint for TOPCon Bifacial Modules to test the electrical insulation integrity by applying 2-3 times higher voltage between module's conductive parts strings/JBs and frame or glass. TOPCon Bifacial G2G Solar PV Modules have a larger conductive area exposed to environmental moisture and have a thinner insulation layer in the form of EVA, making those more prone to higher di-electric stress in utility scale projects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 26 | Industrial network and control devices     | These include PLCs (Programmable Logic Controllers), industrial switches, servo drives, HMI panels, and I/O modules, required for centralized control & synchronization and automatic logic execution of speed, temperature, vacuum, alignment etc, full production traceability and remote diagnostics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 27 | Online UPS                                 | 200 KVA with inbuilt Isolation Transformer, Input 320V-480V, Output 400V, 64 Dry SMF batteries 12V 100 AH, 2 MS Rack for batteries                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

|    |                                                 |                                                                                                                                                                                                                                                                                                                                |
|----|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 28 | Air Compressor and Dryer with Air Tank          | 7.5Pa, Inbuilt Dryer 212cfm, Tank 500 liters, Fcast Filters with differential pressure gauge Model: FA230IH, Capacity: 135cfm, Pressure: 7-16 BARG                                                                                                                                                                             |
| 29 | Silent DG Set                                   | 750 KVA, Prime rating, powered by 6M33G4D4/5, Radiator cooled, coupled with Mecc Alte/ Leroy Somer with DG set AMF Controller, Engine Driven Radiator, Residential Silencer- inside acoustic enclosure, Batteries with connecting leads, Fuel tank -990 L, AVM pads, First fill of Lube oil & Coolant, Alternator terminal box |
| 30 | Forklift Electric Counter Balance Truck         | Capacity: 5000 kg@500 LC, Mast Lift Height: 4075mm, Additional Battery Hawker/Exide: 80V/700Ah                                                                                                                                                                                                                                 |
| 31 | HVAC Infrastructure                             | Ductable Air Conditioning Units, 8X5.5TR, 4X8.5TR, Ductings, Insulations and False Ceiling with MS Grid Frame                                                                                                                                                                                                                  |
| 32 | Electrical Panels and Associated Infrastructure | 200 KVA with inbuilt Isolation Transformer, Input 320V-480V, Output 400V, 64 Dry SMF batteries 12V 100 AH, 2 MS Rack for batteries                                                                                                                                                                                             |

**The Schedule of Implementation for Projected Expansion as mentioned above is: -**

| Particulars                 | Estimated month for |                |
|-----------------------------|---------------------|----------------|
|                             | Commencement        | Completion     |
| Placing Order for Machinery | October, 2026       | October, 2026  |
| Delivery of Machinery       | January, 2027       | January, 2027  |
| Installation of Machinery   | February, 2027      | February, 2027 |
| Trial Run                   | March, 2027         | March, 2027    |
| Commercial Operation        | April, 2027         |                |

  
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### Calculation of the Capacity of Manufacturing Unit for Solar PV Modules

The following table is used to calculate the Annual Manufacturing Capacity of Solar PV Modules for the Existing Manufacturing facilities and the Proposed Manufacturing facilities: -

| Vendor Company                       | Type of Cell    | Size of Cell Piece | Area of each Cell Piece (Square meter) | Efficiency of Cell | Wattage of Cell Piece (Watt) | No. of pieces per Panel | Stringer Capacity (No. of cell pieces stringed & tabbed per hour) | No. of working hours per year (320 days X 22 hours) | No. of Panels manufactured per annum | Annual Capacity (MW) | Detailed description of Capacity                                                                                              |
|--------------------------------------|-----------------|--------------------|----------------------------------------|--------------------|------------------------------|-------------------------|-------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------|
| ChinTiyan New Energy (Hubei) Co. Ltd | Mono PERC       | 91 mm X 182 mm     | 0.016562                               | 23.50%             | 3.8921                       | 144                     | 3,700                                                             | 7,040                                               | 1,80,888                             | 101                  | Annual Capacity of up to 146 MW of TOPCon Bifacial Solar PV Panels and Annual Capacity of 100 MW of Mono PERC Solar PV Panels |
|                                      | TOPCon Bifacial | 91 mm X 182 mm     | 0.016562                               | 25.50%             | 4.2233                       | 144                     | 3,700                                                             | 7,040                                               | 1,80,888                             | 110                  |                                                                                                                               |
|                                      |                 | 105 mm X 210 mm    | 0.02205                                | 25.00%             | 5.5125                       | 132                     | 3,700                                                             | 7,040                                               | 1,97,333                             | 144                  |                                                                                                                               |
|                                      |                 | 105 mm X 210 mm    | 0.02205                                | 25.50%             | 5.6228                       | 132                     | 3,700                                                             | 7,040                                               | 1,97,333                             | 146                  |                                                                                                                               |
| Existing Mono PERC Machines          | Mono PERC       | 91 mm X 182 mm     | 0.016562                               | 23.50%             | 3.8921                       | 144                     | 2,200                                                             | 7,040                                               | 1,07,556                             | 60                   | Annual Capacity of 60 MW of Mono PERC Solar PV Panels                                                                         |


**Proposed Utilization of Capacities in Financial Years 2026-27 and 2027-28: -**

| Product                                                      | Solar PV Modules |                |
|--------------------------------------------------------------|------------------|----------------|
| Particulars                                                  | March 31, 2027   | March 31, 2028 |
| Installed Capacity<br>(MW per Annum)                         | *60              | 160            |
| Unannualized Capacity during the year<br>(MW)                | 60               | 160            |
| Installed Capacity<br>(No. of Solar PV Modules per annum)    | 1,07,556         | 2,88,444       |
| Unannualized Installed Capacity<br>(No. of Solar PV Modules) | 1,07,556         | 2,88,444       |

**Note:** \* The 60 MW plant commenced operations in March 2026 and is currently operational.  
An additional 100 MW plant is proposed to become operational in April 2027. Accordingly, the unannualized capacity and utilization have been computed for the relevant years.


## **ANNEXURE – V**

### **PROCEDURE ADOPTED PERTAINING TO CERTIFICATION**

The production capacity of a Solar PV Modules manufacturing plant is a fundamental measure of its economic potential, and an integral factor in the assessment of plant's value. Although capacity is a central concept in production planning and scheduling, operations management etc.

- The production capacities are measured by considering the below mentioned parameters: -
  - Actual Production done in a month;
  - Actual time used for the cleaning of the Plant & Machinery along with equipment in a month;
  - Actual time devoted for the primary packing of the product manufactured;
  - Actual wastage (if any) in the manufacture of the products;
  - Actual sales done and the inventory in stock at the end of a month.
- Capacity is the maximum average throughput that satisfies the below mentioned constraints: -
  - It considers the production restrictions imposed by the existing equipment, materials, and labour;
  - It is sustainable for an extended and specified period;
  - It assures product quality requirements are met;
  - It does not exceed the safe operating limits of the facility.
- The production capacities of the Company for each plant are determined by the actual production done by the Company through the same.
- The production is also based on the demand of each product which is manufactured by the Company.
- In determining the Installed Capacity, we have considered the past records of the Production done by the Company for each of the Product in each stream at each Plant.
- The same is also determined more accurately by considering the Purchase Orders on hand with the Company and current productions being done.
- We have verified the production data vis a vis the sales data which are fed into the system for each product and determined the production capacities.
- We have considered the shifts which are working at the Plant for the production, in determining the capacities.

Production Capacity is an important factor that needs to be calculated to determine equipment size, satisfy contractual requirements, aid supply chain management, benchmarking against the competitors and obtaining operating permits /licenses/approvals from various regulators / government / agencies. There is no single way to measure the capacity and there are numerous factors to be considered, many of which are unique to a specific process or facility.

