**Pre bid clarifications for Supply, Delivery, Installation, Commissioning and Maintenance of Roof Top Solar System for ITI New Building. – SUP/SD/25/333**

1. Under the scope of work, the required minimum module efficiency is 23%. However, the latest solar panels in the market have an efficiency ranging from 22% and upwards. Hence, please advise on proposing solar panels with an efficiency of more than 22%.

   The solar PV market is evolving rapidly, and module efficiencies have significantly improved in recent years. Tier-1 manufacturers now offer commercially available panels with efficiencies exceeding 23.5%, making 22% modules relatively outdated for new installations, so better if not encouraged, since maximum generation is expected by the available roof area. Therefore, we recommend proposing panels with efficiencies above 23% to align with current industry standards and ensure long-term performance.

2. During the prebid meeting, it was mentioned that the CEB-related connection charges will be borne by the Client.

Yes agreed

3. It was mentioned that the roof layout will be shared with the bidders. And also, surrounding trees will be trimmed and maintained by the client to avoid the shading effects. Please confirm.

Roof layout: Provide Pre bid clarification document. Tree trimming is done by ITI

4. Also, the required AC capacity is 200kW and DC capacity is 220kWp (DC/AC = 1.1). And the bidders were asked to propose the 200kW (AC) using 2 nos of 100kW inverters. Please confirm.

Supplying 2 nos 100 kW inverters is confirmed

5. Under technical specifications, it was mentioned that a Level 1 Lightning Protection System (LPS) is required. Since the building already possesses a functioning lightning protection system (LPS), a separate LPS specifically for the solar system is generally not required. The installation of solar panels does not significantly alter the building's overall lightning risk. However, the system includes Surge Protection Devices (SPDs) for added safety. Please confirm whether a separate LPS is not required.

Separate LPS is required which shall be decided by a competent person

6. In the bidding document under point 5 of the scope of work, it was mentioned to provide IP65 combiner boxes. But the inverters in the present market have all the required features in-built. Hence, it is not required to use a combiner box. And also the combiner boxes have a fire risk which occurs due to multiple termination points in a single place. The current inverters in the market consist of Multiple Power Point Tracking (MPPT) technology and therefore, it is not necessary to install combiner boxes for the PV system.

No need for Combiner Boxes if used with string inverters

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7. With reference to Bid No: SUP/SD/25/333 for the installation of a 200 kW Solar PV System at the ITI New Building, we kindly request your clarification on the inverter efficiency requirement.

On **Page 36** of the bidding document, it is stated that the **European efficiency of the inverter should be 98.5%**. However, on **Page 39**, the term **European** efficiency is not specifically mentioned.

Could you please confirm whether the **98.5% requirement refers specifically to European efficiency**?

The Page 36 content on European efficiency is correct. Please treat 98.5% as European efficiency in all places of the document.

Further, our **100 kW inverter has a European efficiency of 98.4%**. Kindly advise whether this inverter would be acceptable for this tender.

8 DC Capacity -

Based on today's site inspection, we completed the panel layout. However, we are unable to meet the required DC capacity due to the limited roof area.
We considered the full roof area without removing the shaded modules and were able to accommodate only **330 solar modules** (module size- **2382 mm × 1134 mm**).
The presence of a large tree also creates significant shading, further reducing usable roof area.
Therefore, achieving **220 kWp** DC capacity is not feasible with the available roof space after proper design considerations.
Kindly advise on how we should proceed regarding this requirement.

An additional 5000 square feet roof is available in a near single-storey building if the provided roof is not sufficient, we suggest using more efficient panels.

8.Solar Module Efficiency -

Please confirm whether we are allowed to propose modules with **efficiency below 23%**.

Minimum module efficiency is 23% as per the bidding document

7. DC SPD & Isolator BOX -

Modern inverters come with **built-in DC SPDs and DC isolators**. Please confirm whether separate external DC SPD and isolator boxes are still required, or if the inverter's built-in protection is acceptable.

External SPDs are also needed

8. Lightning Protection System -

Kindly clarify whether the LPS cost should be included **within the solar bidding cost** or submitted as a **separate cost**.

Provide the LPS cost within the solar bidding cost

9. AC Cable path from inverter location to transformer location -

Please confirm whether we are permitted to use an **Aerial Bundled Cable (ABC)** clipped directly along the boundary wall (height approximately **6 ft from ground level**) for the AC cable path.

**YES**

10. Common coupling Point -

Please clarify the final grid connection point for the solar system.

Near the transformer

11. Can we connect the solar cable directly to the **CEB busbar side** in the existing LV panel through the solar isolator?

Or

Do we need to install a **separate Common Coupling Panel with a dedicated isolator**?

If a separate **Common Coupling Panel** is required, please confirm

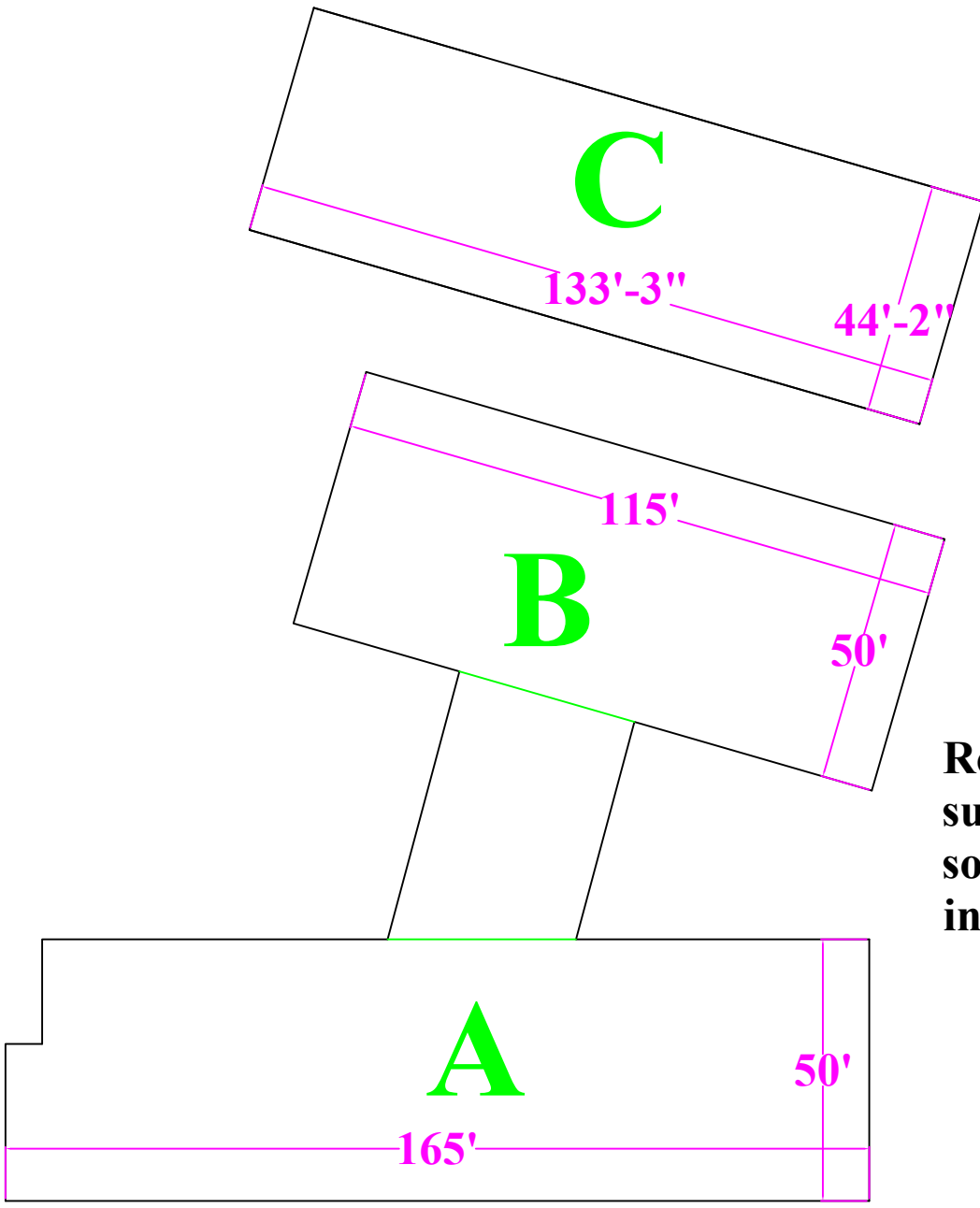
**CEB confirmed that a separate Common Coupling Panel is required behind the existing panel room**

12 The **type, size, and number of runs** of the existing load cable.

Bidder shall submit this in the Technical Proposal with the consent of their own competent person (Chartered Electrical Engineer)

13 Whether the load cable can be **safely accessed and rerouted** to the proposed **Common Coupling Panel**

Bidder shall submit this in the Technical Proposal with the consent of their own competent person (Chartered Electrical Engineer)




**Roof area C can be used if roof area A and B is not enough**

**Roof A ,B suggested area for solar pannel installation**