**Solar Electric Technician (Level 2)**

**Module 4: Site selection for solar PV systems**

**E8: Assignment - Balance of System (BoS) assessment and installation requirements**

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| **E8: ASSIGNMENT MEMO** | |
| **Date** | …. |
| **To** | Participants |
| **From** | Trainers |
| **Subject** | Site assessment and installation requirement for BoS. |
| **What** | Perform and analyse the site assessment for installation of BoS. |
| **Why** | To enable participants to understand and identify the key factors involved in installing BoS, including reading the specifications, safety precautions, and installation process. |
| **How** | 1. Group of 2 or 4. 2. Assess the site for BoS installation suitability and requirements. 3. Answer the questions and discuss the results. |
| **Time** | 60’ |

**Verify the report, manuals, drawings and documentation to assess, plan and install relevant BoS**

**Required tools/equipment:**

* Manuals
* Compass
* Measuring tape
* Clamp meter
* Camera (smartphone) for documentation

| **Specific tasks/instructions** | **Findings/Observations/Verifications** |
| --- | --- |
| 1. **Assessment for installation of combiner boxes** | |
| Discuss and verify the following:   * Location of Installation. * Assess the proposed location for installing the combiner boxes. * Ensure the location is easily accessible for maintenance and well-ventilated. * Verify the area is protected from extreme weather conditions (e.g., rain, heat). * Review the combiner box size and type based on the number of solar strings and voltage/current requirements. * Ensure the box is compatible with the system's technical specifications |  |
| 1. List out the necessary accessories, such as mounting brackets, screws, fuses, and MC4 connectors etc.. |  |
| 1. Ensure all required tools are available for installation. |  |
| 1. **Assessment for installation of wires and cables** | |
| * Verify the size of the cables based on the system’s current and voltage requirements. |  |
| * Ensure that the selected cable size minimizes voltage drop and meets safety standards. |  |
| * List out the accessories such as cable glands, shoes etc. for installation. |  |
| 1. **Assess and list all accessories required for cable installation, determine their sizes, including** | |
| * Cable ties for securing wires. |  |
| * Conduits or cable trays for organizing and protecting cables. |  |
| * Cable glands to prevent water ingress |  |
| 1. Verify the selection of protection devices such as earthing/grounding system, ensure proper earthing is planned for safety. |  |
| 1. Check if a lightning protection system is required, already installed and identify the area for installation of LA. |  |
| 1. Assess and verify the correct types and ratings of circuit protection devices are selected. |  |
| 1. Assess suitable locations for the installation of MCBs, fuses, and MCCBs to ensure ease of access for maintenance and safety. |  |
| 1. Verify that protection devices shall be installed in areas protected from environmental damage. |  |
| 1. List out the installation accessories, verify the availability of necessary accessories for installation. |  |
| 1. After completing the exercise, record and share the findings on the BOS components' suitability for installation. |  |
| 1. Discuss any site-specific challenges and how to resolve them. |  |