**Solar Electric Technician (Level 2)**

**Module 5: Installation and assembly**

**E4: Assignment - Selection of appropriate tools and accessories**

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| **E4: ASSIGNMENT MEMO** | |
| **Date** | …. |
| **To** | Participants |
| **From** | Trainers |
| **Subject** | Selection of appropriate tools and accessories. |
| **What** | Use the specific tools as per the site condition. |
| **Why** | To enable participants to understand and identify the use of the right tools as per the site conditions. |
| **How** | 1. Group of 2 or 4. 2. As per the specified site and given condition, use appropriate tools and accessories. 3. Answer the questions and discuss the results. |
| **Time** | 60’ |

**Select appropriate tools and accessories required for the installation of a 5kWp ground-mounted solar PV system with a 5kW solar inverter and 200Ah/12V x 12 nos. of battery storage at a remote site.**

**Required tools/equipment:**

* Pen and paper
* Camera (smartphone) for documentation

**Task 1: Analyse the system components and write down the list of major and minor components used.**

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| **Instructions** | **System components/tools** | **Quantity** |
| **Analyse the system components and note down.** | * Solar modules (XX Wp x XX nos.). |  |
| * XX kW Inverter. |  |
| * Battery bank (XX Ah/XX. |  |
| * V x XX nos. batteries). |  |
| * Ground mount structure (with XX, XY etc. accessories). |  |
| * AC and DC wiring, protection devices, and accessories. |  |
| **Prepare the list of tools along with their name and specification for:** | * Measuring voltage, current, and continuity. |  |
| * Insulation quality. |  |
| * terminating connectors. |  |
| * Preparing, crimping cables. |  |
| * Tightening bolts to specific torque. |  |
| * Layout and measurements. |  |
| * Leveling the support structure. |  |
| * Mounting structure installation. |  |
| * Anchoring the structure. |  |
| * General assembly of cables and equipment. |  |
| * Tightening bolts and nuts. |  |
| * Personal protective equipment (PPE). |  |
| * First aid kit. |  |
| **Prepare the list of accessories.** | * For module interconnection. |  |
| * To combine the output of solar arrays. |  |
| * Parts of ground-mounted structure. |  |
| * For grounding the PV system. |  |
| * DC cables (suitable size- XY mm² for PV, XX mm² for battery etc.). |  |
| * For inverter to load connection, typically XX mm². |  |
| * For securing cables. |  |
| * For routing and protecting cables. |  |
| * Cable lugs and connectors. |  |
| * Protection devices. |  |
| * For series/parallel connection of batteries. |  |
| * For connecting multiple batteries. |  |
| * Accessories for battery protection. |  |
| **Each participant will share their assigned section (electrical tools, mechanical tools, safety equipment, accessories) and explain their purpose.** |  | |
| **Discuss any potential site-specific challenges, such as transport to the remote site or environmental factors, and how they affect the choice of tools and accessories.** |  | |