**Solar Electric Technician (Level 2)**

**Module 5: Installation and assembly**

**E5: Assignment - Selection of appropriate tools and accessories**

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| **E5: ASSIGNMENT MEMO** | |
| **Date** | …. |
| **To** | Participants |
| **From** | Trainers |
| **Subject** | Demonstration and use of survey and installation tools |
| **What** | Use the specific tools as per the installation, survey requirement |
| **Why** | To enable participants to understand and identify the use of tools used during survey and installation of solar systems |
| **How** | 1. Group of 2 or 4. 2. Introduction of tools used for survey, demonstration of tools and practical exercise to use the tool. 3. Read and carefully follow the instructions for each task. 4. Answer the questions and discuss the results. |
| **Time** | 90’ + 60’ |

**Identify a roof or ground area for potential solar PV installation.**

**Required tools/equipment:**

* Mobile phone (solar pathfinder/Sun’s path
* Compass
* Measuring tape
* Camera (smartphone) for documentation
* Pen and paper

**Instructions:**

**Task 1: For the given site, do the following**

* One participant act as team leader to oversee group coordination.
* Use the measuring tape to measure the available area for panel placement.
* Note any obstructions that may impact installation (e.g., vents, chimneys, trees).

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| **Findings/Observations/ Measurements** |
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**Task 2: Perform solar shading analysis**

* Use the solar pathfinder or other applications to assess the shading patterns throughout the day and year, mark the shading for the month of December.
* Identify and record any shading obstructions, document findings (take photos or note down time periods with shading).

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| **Findings/Observations/ Measurements** |
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**Task 3: Tilt angle measurement using inclinometer**

* Use the inclinometer to measure the tilt of the roof or chosen ground location.
* Calculate the ideal tilt angle based on local latitude and optimum solar exposure.
* Record your measurements and compare with ideal angles for optimal energy production.

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| **Findings/Observations/Measurements** |
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**Task 4: Electrical pre-installation testing**

* Use a multimeter and tester to check voltage at the main distribution panel.
* Test grounding at the installation site.
* Verify continuity in any existing circuits.
* Record all electrical data.

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| **Findings/Observations/ Measurements** |
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**Task 5: Group presentation and discussion**

* Present your findings to the group, covering the shading pattern and ideal panel location.
* Measured tilt angle and its alignment with best practices for solar panel efficiency.
* Electrical test results (voltage, grounding, continuity).
* Any challenges faced during the process and how they were overcome.

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| **Summary of all the findings for presentation** |
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