**Solar Electric Technician Training**

# **Module 2: Occupational health and safety**

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| **Objective:** By the end of this session, learners will be able to:   * Apply personal safety. * Apply workplace safety. * Identify, use, clean and maintain tools and equipment used in solar PV systems. * Apply basic first aid. | **Instructor:** *[Name]*  **Session duration:** |
| * 4 hours (Theory) * 10 hours (Practical) |

| **Trainers' activities** | **Learners’ activities** | **Teaching aid** | **Time** |
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| **Session kick-off**  Start the session with the session objectives and agenda.  Share a story like one given in the media folder "Story for Importance of OHS (PPE)."  **Ask the following questions**   1. What is the lesson of this story? 2. What are the challenges and risks while working as a solar technician as mentioned in the story? 3. What could have prevented Hari from falling-off the roof? | * Listen to the trainer and note down the objectives if required. * Listen to the story attentively and answer the questions. | * Story 1–"Story for Importance of OHS (PPE)"(V1) | 10’ |
| **Workplace safety** | | | **155’** |
| **Give illustrated talk**   * Provide an introduction to risk assessment and hazard identification. * Discuss an overview of safety procedures (lockout/tagout, fall protection, electrical safety)   **Conduct a small group activity**  Provide scenarios (scenario for assignment 1) and have groups identify potential hazards and suggest mitigation strategies. Ask the groups to present and discuss their findings.   * Discuss emergency response plans (fire, electrical shock, falls). | * Listen attentively to the information shared by the trainer. | * PPT * Scenario assessment (E1) for group activity * Answers for Scenario exercise (V2) | 30' |
| **Conduct a workplace safety inspection activity**   * Divide participants into small groups. * Provide a checklist in group for a mock-up workplace safety inspection. * Have groups conduct an inspection of the training area or a designated mock-up space. * Provide an opportunity to group to report on their findings and suggest improvements.   **Open discussion**   * Ask learners how to create and maintain a safety culture in the workplace. * Encourage participants to share ideas and experiences about promoting safety among colleagues. * Discuss the importance of reporting unsafe conditions and near-misses. | * Get involved in the group activity to identify potential hazards, suggest mitigation strategies, and present the findings. * Conduct an inspection of the training area as per the checklist and discuss the findings in the group. * Participate in the group discussion and share ideas and experiences about promoting safety among colleagues. | * Workplace safety inspection Checklist(V3) | 20'  45'  60' |
| **Tools/equipment safety** | | | **375’** |
| * Ask participants to share their experiences or stories about tool-related incidents or best practices. Share your own experiences if necessary. * Deliver an illustrated talk on the importance of tools and equipment safety in solar electric work, provide a detailed overview of common tools used in in the field, and discuss safe usage practices and common hazards associated with each tool. | * Share experiences or stories about tool-related incidents or listen to the story shared by the trainer. | * Stories about tool-related incidents (V4) | 30' |
| **Present a demonstration of tool uses and safety**   * Present a live demonstration of proper tool usage. * Demonstrate the process of lifting a solar panel from the ground floor to the top floor. * Highlight correct handling, storage, and maintenance practices. * Discuss the importance of using the right tool for the job. | * Listen attentively. * Observe the demonstration of the trainer. | * Video for lifting the PV module (V5) | 45' |
| **Assignment**   * Divide learners into five groups. * Give an assignment to each group and ask them to perform the activities mentioned below. * Provide some time for the preparation of group activities. * Ask learners to perform these activities in front of the whole group. * Discuss the right and wrong activities performed with the entire group right after the performance.   **Assignment explanation**   * **Group A**: Safely lifting solar panels. * **Group B**: Safely lifting batteries and heavy components such as frames and iron pipes. * **Group C:** Practicing with a safety harness while working. * **Group D:** Gently placing PV modules and solar components during installation. * **Group E:** Setting up a safety ladder. | * Read the assignment chart * Assemble in the assigned group * Follow the steps written on Performance Guide * Perform the activities in front of the whole group. * Participate in the discussion. * Preparation time 20', performance time 5' for each group and 5' discussion. | * PPE (gloves, helmet, shoes, reflective dress, goggles, safety belts, etc.) * Insulated tools * Safety posters | 70’ |
| * Opportunity for guidance and individual practice * Provide an opportunity to groups to practice under guidance and ask them to rotate when completed. | * Practice in the group and ask for guidance from the trainer. | * Performance guide | 230' |
| **First aid** | | | **300’** |
| **Present an illustrated talk:**   * Explain what first aid is, its importance, and the role of a first aider. * Explain the causes, symptoms and dangers of electric shock. * Demonstration (electric shock) * Show the steps to safely disconnect the power source and assess the victim. * Ask one to two participants to demonstrate how they would provide first aid in such a case. Ask for feedback from the participants.   Let participants practice the steps in pairs or small groups under supervision. | * Listen attentively and ask for clarifications if necessary. * Observe the demonstration and perform when asked by the trainer or provide feedback to colleagues when necessary. | * White board, marker | 20'  50' |
| **Present an illustrated talk (fracture):**   * Provide a scenario in which a fracture may be caused.   Explain the different types of fractures, symptoms, and first aid measures. | * Listen attentively and ask for clarification | * PPT | 10' |
| **Demonstration**   * Show the learners how to immobilize a fracture (legs and hands separately) using splints and bandages for different parts of the body. * Let participants practice immobilizing fractures (legs and hands separately) with the provided materials. Ask for feedback from the participants or provide feedback from your side. | * Observe the demonstration and perform when asked by the trainer or provide feedback to colleagues when necessary. | * Performance guide | 90' |
| **Present an illustrated talk (Burns):**   * Explain the different types of burns, symptoms, and first aid treatments. * Demonstration (Burns) * Show the steps for treating minor and major burns.   Let participants practice burn treatment techniques. | * Listen attentively and ask for clarifications. * Observe the demonstration and perform when asked by the trainer or provide feedback to colleagues when necessary. | * PPT * Performance guide | 10'  50' |
| **Present an illustrated talk (Cuts and lacerations):**   * Explain the types of cuts and the steps for treating them. * Demonstration (Cuts and lacerations) * Show the participants how to clean, dress, and bandage cuts.   Let participants practice cleaning and dressing cuts. | * Listen attentively and ask for clarification. * Observe the demonstration and perform when asked by the trainer or provide feedback to colleagues when necessary. | * PPT * Performance guide | 10'  50' |
| **Debriefing:**  Discuss the exercise, provide feedback, and answer questions. | * Participate in the discussion. |  | 10' |
| **Total time** | | | **840’** |