MTBM

GRID-CONNECTED SOLAR PV SYSTEM TRAINING

MTBM Group Sdn. Bhd. (1600656-M)

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Course Title: Grid-Connected Solar PV System Training

Course Validity: 2 Days

Validity: Not Applicable

HRD Corp Scheme: Claimable

INTRODUCTION

This training provides essential knowledge for understanding, designing and managing grid-connected Solar PV systems for residential, commercial and industrial applications. Participants will learn the principles of grid-tied configurations, system components, inverter integration, safety requirements, and Malaysia's regulatory framework. The course enhances competency in system performance analysis and key technical considerations for successful implementation.

OBJECTIVE(S):

- Understand the fundamentals of grid-connected PV systems
- Learn major components and their functions in grid-tied configurations
- Understand inverter operation, MPPT functions and grid synchronisation
- Identify key design considerations for grid-connected installations
- Understand Malaysia regulations, NEM schemes and ST/SEDA requirements
- Strengthen knowledge in system protection, safety and compliance
- Learn performance evaluation and system efficiency concepts

TARGET GROUP(S):

- Engineers, technicians & maintenance personnel
- Solar PV installers and contractors
- Facility managers & energy officers
- M&E, construction and technical teams
- ESG and sustainability departments
- Organisations deploying grid-connected solar PV systems

ENTRY REQUIREMENT(S):

- Able to read, write, and communicate in Malay/English

TOPIC(S):

1. Introduction to Grid-Connected Solar PV Systems
2. PV System Components and Grid-Tied Configurations
3. Inverter Operation, MPPT and Grid Synchronisation
4. PV System Design Considerations and Sizing Requirements
5. Malaysia Regulations: NEM, SEDA and Suruhanjaya Tenaga Guidelines
6. Grid-Connected Safety, Protection and Compliance
7. Performance Monitoring and Energy Yield Assessment
8. Documentation, Testing and Commissioning Requirements

LIST OF REFERENCE BOOK(S):

- SEDA Malaysia Grid-Connected PV Guidelines
- Suruhanjaya Tenaga (ST) Technical & Safety Standards
- NEM 3.0 Technical Documentation
- IEC Standards for Grid-Tied PV Systems
- Inverter & PV Module Manufacturer Manuals

LIST OF TEACHING AID(S):

- LCD projector
- Computer
- Whiteboard with accessories

METHODOLOGY(S):

- Lecture
- Case studies
- PV design demonstrations
- Practical configuration exercises

TRAINING SCHEDULE

Day 1

Time	Activity / Topic
8:30 am – 9:00 am	Registration and Introduction
9:00 am – 9:45 am	Topic 1: Introduction to Grid-Connected Solar PV Systems
9:45 am – 10:30 am	Topic 2: PV System Components and Grid-Tied Configurations
10:30 am – 10:45 am	**Morning Tea Break**
10:45 am – 11:30 am	Topic 3: Inverter Operation, MPPT and Grid Synchronisation
11:30 am – 12:30 pm	Topic 4: PV System Design Considerations and Sizing Requirements
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 2:30 pm	Practical Session: System Sizing & Configuration
2:30 pm – 3:30 pm	Case Study: Grid-Tied System Layout Review
3:30 pm – 3:45 pm	**Afternoon Tea Break**
3:45 pm – 5:00 pm	Workshop: Basic PV System Simulation

TRAINING SCHEDULE

Day 2

Time	Activity / Topic
8:30 am – 9:00 am	Recap of Day 1 & Q&A
9:00 am – 9:45 am	Topic 5: Malaysia Regulations: NEM, SEDA & ST
9:45 am – 10:30 am	Topic 6: Grid-Connected Safety, Protection & Compliance
10:30 am – 10:45 am	**Morning Tea Break**
10:45 am – 11:30 am	Topic 7: Performance Monitoring & Yield Assessment
11:30 am – 12:30 pm	Practical: Performance Ratio (PR) & Energy Analysis
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 2:30 pm	Topic 8: Documentation, Testing & Commissioning Requirements
2:30 pm – 3:30 pm	Grid-Tied Installation Review & Safety Walkthrough
3:30 pm – 3:45 pm	**Afternoon Tea Break**
3:45 pm – 5:00 pm	Final Review, Q&A & Closing