MTBM

SOLAR PV PERFORMANCE MONITORING & TROUBLESHOOTING TRAINING

REGISTERED HRD CORP TRAINING PROVIDER

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MTBM Group Sdn. Bhd. (1600656-M)

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Course Title: Solar PV Performance Monitoring & Troubleshooting Training

Course Validity: 2 Days

Validity: Not Applicable

HRD Corp Scheme: Claimable

INTRODUCTION

This training provides essential knowledge and hands-on understanding of Solar PV system performance monitoring and troubleshooting activities. Participants will learn how to evaluate system output, analyse performance ratios, identify faults, and detect anomalies using monitoring platforms. The course also covers troubleshooting methods for inverter, DC array, and protection devices to ensure reliable system operation and optimal energy production.

OBJECTIVE(S):

- Understand PV performance indicators and monitoring parameters
- Learn how to analyse system data and performance trends
- Identify common PV system faults through monitoring platforms
- Strengthen troubleshooting skills for DC, AC and inverter issues
- Understand testing tools such as string testers and IV curve analysers
- Improve performance ratio (PR) and energy yield evaluation
- Implement corrective actions to restore optimal PV system output

TARGET GROUP(S):

- PV technicians & maintenance teams
- Engineers & facility managers
- Solar PV installers and contractors
- Renewable energy system operators
- Organisations managing PV assets

ENTRY REQUIREMENT(S):

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

TOPIC(S):

1. Introduction to Solar PV Performance Metrics
2. Monitoring Platforms and Data Interpretation
3. Performance Ratio and Energy Yield Evaluation
4. Inverter Fault Diagnosis and Alarm Interpretation
5. DC Array Fault Detection and Troubleshooting
6. AC Side Issues, Protection Devices and System Restoration
7. Testing Tools for PV Troubleshooting (IV Curve, String Testing)
8. Corrective Action Planning and Performance Improvement

LIST OF REFERENCE BOOK(S):

- SEDA Malaysia PV Performance Guidelines
- IEC Standards for PV Testing & Monitoring
- PV Inverter & Module Manufacturer Manuals
- Solar Performance Monitoring System Documentation

LIST OF TEACHING AID(S):

- LCD projector
- Computer
- Whiteboard with accessories

METHODOLOGY(S):

- Lecture
- Case studies
- Performance analysis exercises
- Practical troubleshooting demonstration
- Group discussions

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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 Solar PV Performance Metrics
9:45 am – 10:30 am	Topic 2: Monitoring Platforms and Data Interpretation
10:30 am – 10:45 am	**Morning Tea Break**
10:45 am – 11:30 am	Topic 3: Performance Ratio and Energy Yield Evaluation
11:30 am – 12:30 pm	Practical: PR Calculation & Energy Trend Review
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 2:30 pm	Topic 4: Inverter Fault Diagnosis & Alarm Interpretation
2:30 pm – 3:30 pm	Hands-On: Inverter Monitoring & Fault Simulation
3:30 pm – 3:45 pm	**Afternoon Tea Break**
3:45 pm – 5:00 pm	Workshop: Analysing Real Monitoring Data

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: DC Array Fault Detection & Troubleshooting
9:45 am – 10:30 am	Topic 6: AC Side Issues, Protection Devices & System Restoration
10:30 am – 10:45 am	**Morning Tea Break**
10:45 am – 11:30 am	Topic 7: Testing Tools for PV Troubleshooting
11:30 am – 12:30 pm	Practical: String Testing & IV Curve Demonstration
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 2:30 pm	Topic 8: Corrective Action Planning & Performance Improvement
2:30 pm – 3:30 pm	Case Study: Real Fault Analysis from PV Systems
3:30 pm – 3:45 pm	**Afternoon Tea Break**
3:45 pm – 5:00 pm	Final Review, Troubleshooting Q&A & Closing