MTBM

SOLAR ENERGY STORAGE SYSTEM (ESS) TRAINING

MTBM Group Sdn. Bhd. (1600656-M)

Level 8, MCT Tower, Sky Park, One City, Jalan USJ 25/1, 47650 Subang Jaya, Selangor

+603 8022 8330 +603 8022 8201 info@mtbmgroup.com mtbmgroup.com

Course Title: Solar Energy Storage System (ESS) Training

Course Validity: 2 Days

Validity: Not Applicable

HRD Corp Scheme: Claimable

INTRODUCTION

This training provides participants with a practical understanding of Solar Energy Storage Systems (ESS) used for renewable energy applications. It covers battery technologies, system architecture, sizing, integration with Solar PV systems, and safety requirements. Participants will learn regulatory considerations, operational guidelines, and essential maintenance practices. The course enhances knowledge required to design, manage and deploy ESS solutions effectively.

OBJECTIVE(S):

- Understand ESS fundamentals and battery technologies
- Learn ESS sizing, configuration and integration with Solar PV
- Strengthen understanding of BMS operation and system safety
- Identify risks, hazards and protection requirements for ESS
- Understand regulatory and compliance requirements
- Learn performance evaluation and monitoring of ESS
- Gain competency in maintenance and troubleshooting procedures

TARGET GROUP(S):

- Engineers, technicians & maintenance teams
- Solar PV installers & EPC contractors
- Energy managers & facility supervisors
- Renewable energy developers & consultants
- Organisations deploying ESS solutions

ENTRY REQUIREMENT(S):

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

TOPIC(S):

1. Introduction to Energy Storage Systems and Battery Fundamentals
2. ESS Components, System Architecture and Configuration
3. Battery Management System (BMS) Functions and Safety Features
4. ESS Sizing, Capacity Planning and PV Integration Requirements
5. ESS Safety Standards, Hazard Prevention and Protection Devices
6. ESS Performance Monitoring, Efficiency and Degradation Management
7. ESS Operation, Maintenance and Troubleshooting Procedures
8. Regulatory, Compliance and Installation Requirements

LIST OF REFERENCE BOOK(S):

- IEC Energy Storage System Standards
- Battery Manufacturer Technical Manuals
- SEDA/ST Guidelines for ESS Integration
- Solar + ESS Installation & Safety Manuals
- ESS Operation & Maintenance Documentation

LIST OF TEACHING AID(S):

- LCD projector
- Computer
- Whiteboard with accessories

METHODOLOGY(S):

- Lecture
- Case studies
- Practical ESS configuration discussion
- Performance analysis exercises
- Group activities

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 ESS & Battery Fundamentals
9:45 am – 10:30 am	Topic 2: ESS Components & System Architecture
10:30 am – 10:45 am	**Morning Tea Break**
10:45 am – 11:30 am	Topic 3: Battery Management System (BMS) Functions
11:30 am – 12:30 pm	Topic 4: ESS Sizing & PV Integration Requirements
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 2:30 pm	Practical: ESS Configuration Discussion
2:30 pm – 3:30 pm	Case Study: ESS Deployment Scenarios
3:30 pm – 3:45 pm	**Afternoon Tea Break**
3:45 pm – 5:00 pm	Workshop: Capacity Planning & System Design

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: ESS Safety Standards & Protection Devices
9:45 am – 10:30 am	Topic 6: ESS Performance Monitoring & Efficiency
10:30 am – 10:45 am	**Morning Tea Break**
10:45 am – 11:30 am	Topic 7: ESS Operation, Maintenance & Troubleshooting
11:30 am – 12:30 pm	Practical: Troubleshooting Simulation
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 2:30 pm	Topic 8: Regulatory & Compliance Requirements
2:30 pm – 3:30 pm	ESS Implementation Checklist Review
3:30 pm – 3:45 pm	**Afternoon Tea Break**
3:45 pm – 5:00 pm	Final Review, Q&A & Closing