



Corporate Strategy & Communications Department
 Corporate Communications Division
 Knowledge Management Services Section
Course Syllabus
Advanced WESM Training on Trading Operations

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| COURSE TITLE | Advanced WESM Training on Trading Operations |
| COURSE REQUIREMENT | This course serves as a higher-level training for all qualified participants. To enroll, the Basic WESM training shall have been completed. |
| DURATION | 2 days (approximately 6 lecture hours + 0.5 hour for pre-lecture introductions per day) |

I. COURSE DESCRIPTION

The Advanced WESM Training on Trading Operations provides participants with an in-depth understanding of the trading operations within the Wholesale Electricity Spot Market (WESM). This comprehensive program covers a wide range of topics, including registration of generation and load facilities, market network model development and maintenance, load forecasting methodology, procedures for normal system conditions, generator start-up and shutdown, generator re-dispatch, procedures during market intervention or suspension, market infrastructure, and understanding market data. It will also cover a demo/hands-on of the market transaction simulator.

II. COURSE OUTLINE

| # | TOPIC | DESCRIPTION | APPROX. LENGTH |
|-----------|---|--|------------------|
| I | Registration of Generation and Load Facilities | | 1 hour |
| I-1 | -Generator and Load Facilities Requiring WESM Registration | This module focuses on the criteria and process for the mandatory registration of generator and load facilities in the WESM. Participants will learn about the registration requirements, generator testing and commissioning procedures, and energization of new load facilities. | |
| I-2 | -Requirements Checklist | | |
| I-3 | -Testing and Commissioning | | |
| I-4 | -Energization of New Load Facilities | | |
| II | Market Network Model (MNM) Development and Maintenance | | 1.5 hours |
| II-1 | -What is the market network model (MNM) | Participants will gain insights into the market network model (MNM), including its development, maintenance, and components. The module covers the rationale for MNM development, responsibilities of the Market Operator, and the updating procedures. | |
| II-2 | -MNM development and deployment | | |



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| III | Load Forecasting Methodology | | 1.5 hours |
| III-1 III-2 III-3 III-4 | -Forecasting Basics -STLF Methodology -VSTLF Methodology -WESM Forecasting Method | This module provides an in-depth understanding of load forecasting basics and methodologies. Participants will learn about short-term load forecasting (SDLF) and very short-term load forecasting (VSTLF) methodologies. The application of other forecasting methodologies and load forecasting considerations will also be discussed. | |
| IV | Procedures For Normal System Condition | | 1.5 hours |
| IV-1 IV-2 IV-3 IV-4 IV-5 IV-6 IV-7 IV-8 IV-9 | -Pre-dispatch market projection -RTD process -Bids and offers -Outage scheduling -Contingency planning -System status report -Dispatch implementation -Daily operations report -Market information publication | Participants will learn about the procedures and processes involved during normal system conditions within the WESM. This module covers pre-dispatch market projection (week-ahead, day-ahead, and hour-ahead projections), real-time dispatch (RTD) process, bids and offers, outage scheduling, contingency planning, system status reports, dispatch implementation, daily operations reports, and market information publication. | |
| V | Procedures for Start-up and Shutdown of Generators | | 1 hour |
| V-1 V-2 V-3 | -Start-up of generating units -Shutdown of generating units -Courses of action if trading requirement is violated | This module focuses on the principles, requirements, and procedures for the start-up and shutdown of generating units within the WESM. Participants will learn about unit start-up and shutdown sequences, trading and dispatch requirements, and courses of action in case of trading requirement violations. | |
| VI | Generator Re-dispatch | | 1 hour |
| VI-1 VI-2 VI-3 VI-4 | -Introduction to must-run units -Responsibilities of involved parties -Considerations and criteria for selection -Pricing and Settlement for re-dispatch generators and MRUs | Participants will gain a comprehensive understanding of generator re-dispatch procedures within the WESM. This module covers the introduction and responsibilities of must-run units (MRUs), criteria for selection, pricing and settlement for re-dispatched generators and MRUs, and provisions for additional compensation. | |
| VII | Procedures During Market Intervention or Suspension | | 1 hour |
| VII-1 VII-2 VII-3 | -Market Suspension and Intervention -System Emergency Restoration | This module establishes guidelines and procedures during market intervention and system emergency restoration process within the WESM. Participants will learn about the actions carried out during market intervention, the responsibilities of different | |



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| | -Report and Documentation of Events | entities during system emergencies, and procedures for reporting and documentation of events. | |
| VIII | Market Infrastructure | | 45 mins |
| VIII-1 | -Overview | Participants will be introduced to the various systems used in the WESM, such as the Market Management System (MMS), Central Registration and Settlement System (CRSS), and other market systems. This module covers the features and functions of each system and their roles in facilitating registration, scheduling, pricing, settlement, and payment and collection of WESM transactions. | |
| VIII-2 | -MMS Features | | |
| VIII-3 | -CRSS Features | | |
| VIII-4 | -Other Market Systems | | |
| VIII-5 | -IT Infrastructure | | |
| IX | Understanding Market Data | | 45 mins |
| IX-1 | Modes of Market Data Provision | Participants will gain insights into the modes of market data provision, types of market data available, and the description of each market data. Discussions will cover different data access methods as well as the data available for market participants. | |
| IX-2 | Types of Market Data | | |
| IX-3 | Data Dictionary | | |
| X | Market Transaction Simulator | Participants will have hands-on experience using a market transaction simulator. This simulation tool allows participants to extract market data and estimate energy trading amounts (ETAs) in the WESM. | 1hr and 30 mins |

By completing this advanced training program, participants will acquire an in-depth understanding of trading operations within the WESM, enabling them to effectively navigate the market and optimize their trading strategies.