Global Horizon
TRAINING CENTER

Training Course:
Advanced Power Transmission Systems

18 - 29 October 2026
Dubai (UAE)

Training Course:
Advanced Power Transmission Systems

Training Course code: EN235129 From: 18 - 29 October 2026 Venue: Dubai (UAE) - Training Course Fees: 9240 Euro

Introduction

Power transmission systems are critical to delivering electricity reliably and efficiently over long distances. With increasing demand, grid complexity, and integration of renewable energy sources, advanced knowledge of transmission systems is essential to ensure stability, efficiency, and resilience.

This program, designed by Global Horizon Training Center, provides participants with in-depth technical expertise in the design, operation, protection, and maintenance of advanced power transmission systems over a comprehensive 10-day training.

Course Objectives

By the end of this program, participants will be able to:

- Understand advanced concepts of power transmission systems and grid operations
- Analyze transmission line parameters and system performance
- Apply protection and control strategies for transmission networks
- Manage system stability and reliability under varying conditions
- Design and evaluate high-voltage transmission systems
- Perform maintenance and troubleshooting of transmission infrastructure
- Integrate renewable energy sources into transmission networks
- Ensure compliance with international standards and grid codes

Target Audience

This program is designed for:

- Electrical Power Engineers
- Transmission and Grid Operation Engineers
- Maintenance and Protection Engineers
- Utility and Energy Sector Professionals
- Project Engineers involved in power infrastructure
- Technical Specialists in high-voltage systems

Outline

Global Horizon TRAINING CENTER

Day 1: Fundamentals of Power Transmission Systems

- Overview of power transmission networks
- AC vs. DC transmission systems
- Components of transmission systems
- Transmission line parameters and characteristics
- Introduction to grid structures

Day 2: Transmission Line Design and Engineering

- Conductor selection and line design
- Tower design and mechanical considerations
- Insulation coordination and clearances
- Environmental and geographical factors
- Line routing and planning

Day 3: High Voltage Transmission Technologies

- Extra High Voltage EHV and Ultra High Voltage UHV systems
- HVDC transmission principles and applications
- Flexible AC Transmission Systems FACTS
- Reactive power compensation
- Transmission efficiency improvement

Day 4: Power System Protection Principles

- Protection philosophy and schemes
- Overcurrent, distance, and differential protection
- Protection coordination and selectivity
- Relay types and configurations
- Fault detection and isolation

Day 5: Substations and Switchgear Systems

- Types of substations and configurations
- Circuit breakers and switchgear
- Busbar arrangements
- Protection and control integration
- Substation automation

Day 6: System Stability and Load Flow Analysis

- Power flow analysis and load balancing
- Voltage stability and control
- Transient and dynamic stability
- Contingency analysis
- System performance evaluation

Day 7: Operation and Control of Transmission Systems

- Grid operation and dispatching
- SCADA and energy management systems EMS

- Load forecasting and demand management
- Frequency control and regulation
- Emergency control strategies

Day 8: Maintenance and Asset Management

- Maintenance strategies for transmission assets
- Condition monitoring techniques
- Asset lifecycle management
- Fault diagnosis and troubleshooting
- Maintenance planning and scheduling

Day 9: Integration of Renewable Energy Sources

- Impact of renewable energy on transmission systems
- Grid integration challenges
- Smart grids and digitalization
- Energy storage systems
- Future trends in transmission networks

Day 10: Standards, Compliance, and Case Studies

- International standards and grid codes
- Regulatory requirements and compliance
- Safety practices in transmission systems
- System optimization and performance improvement
- Case studies and real-world applications

Registration form on the Training Course: Advanced Power Transmission Systems

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Company Information

Company Name: .....
Address: .....
City / Country: .....

Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....
Position: .....
Telephone / Mobile: .....
Personal E-Mail: .....
Official E-Mail: .....

Payment Method

☐ Please find enclosed a cheque made payable to Global Horizon

☐ Please invoice me

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Easy Ways To Register

Telephone: +201095004484 to provisionally reserve your place.	Fax your completed registration form to: +20233379764	E-mail to us : info@gh4t.com or training@gh4t.com	Complete & return the booking form with cheque to:Global Horizon 3 Oudai street, Aldouki, Giza, Giza Governorate, Egypt.