informatech

OIL AND GAS | OG-015

# Renewable Energy Integration

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# Course content

## Why Attend

Why Attend The rapid growth of renewable energy is transforming power systems worldwide. Successfully integrating wind, solar, and other renewable sources requires advanced planning, grid flexibility, energy storage solutions, and smart network technologies. This course provides participants with practical knowledge on how to connect large-scale renewable generation to existing power systems while maintaining reliability, efficiency, and power quality.

Course Methodology This course uses an interactive and practical approach through presentations, technical case studies, group discussions, system analysis exercises, operational examples, and real industry applications.

## Course Objectives

- Understand current trends in renewable energy generation
- Identify key challenges in renewable energy integration
- Apply technical solutions for grid stability and flexibility
- Evaluate energy storage technologies and applications
- Assess impacts on transmission and distribution systems
- Improve forecasting and demand response practices
- Understand smart grids and microgrid operations
- Support sustainable energy transition strategies

## Target Audience

- Electrical Engineers
- Power System Engineers
- Energy Managers
- Utility Professionals

# Course content

## Target Audience

- Renewable Energy Specialists
- Operations and Maintenance Engineers
- Anyone involved in power generation and grid integration

## Target Competencies

- Renewable Energy Systems
- Grid Integration
- Power System Analysis
- Energy Storage Technologies
- Smart Grid Operations
- Technical Problem Solving
- Sustainable Energy Planning
- Risk Assessment

## Course outline

### Day 1: Renewable Energy Generation - The Present, The Future and The Integration Challenges

- Drivers of renewable energy development
- State of the art integrating large capacities renewable energy
- Transmission and operation technologies and practices
- Wind power generation
- Photo voltaic power generation
- Concentrated solar power generation

# Course content

## Course outline

### Day 2: Technical Solutions for Integrating Large Capacity Renewable Energy

- Wind turbines
- Grid friendly renewable energy generation
- Improved flexibility in conventional generation
- Transmission expansion developments
- Promising large capacity electrical energy storage technologies
- Roles of electrical energy storage in renewable energy integration
- Standards for large capacity electrical energy storage renewable energy integration

### Day 3: Grid Flexibility - The Key to Renewable Energy Integration

- Effects of wind and solar power on energy demand
- Power plant flexibility
- Forecasting and demand response
- Wind and solar power variabilities
- Challenges variable renewable energy poses to the grid
- Impact of fossil fueled generators

### Day 4: Integrating Renewable Energy into the Transmission and Distribution Systems

- Approach to analysis of integrating renewable energy
- Integration of distributed and renewable energy generation
- Power quality impacts
- Electrical transmission and distribution systems
- Photo voltaic optimization and sensitivity analysis
- Wind optimization and sensitivity analysis

# Course content

## Course outline

### Day 5: Renewable Energy Integration in Smart Grids and Micro Grids

- Smart grid attributes
- Merits of smart grids
- Operation of micro grids
- Merits of micro grids
- Future of smart micro grids
- Wrap up session and Q&A session

# Seminar dates

## Available seminar dates

Live dates and pricing for Renewable Energy Integration generated from the course details page.

| Date | Location | Format | Fee |
|---|---|---|---|
| 1 - 5 June 2026 | Amsterdam - Netherlands | Classroom | **€4,250.-** |
| 8 - 12 June 2026 | London - U.K | Classroom | **€3,850.-** |
| 15 - 19 June 2026 | Barcelona - Spain | Classroom | **€4,250.-** |
| 6 - 10 July 2026 | London - U.K | Classroom | **€3,850.-** |
| 20 - 24 July 2026 | Barcelona - Spain | Classroom | **€4,250.-** |
| 3 - 7 August 2026 | Istanbul - Turkey | Classroom | **€3,850.-** |
| 10 - 14 August 2026 | Amsterdam - Netherlands | Classroom | **€4,200.-** |
| 7 - 11 September 2026 | Istanbul - Turkey | Classroom | **€3,200.-** |
| 14 - 18 September 2026 | Paris - France | Classroom | **€4,400.-** |
| 5 - 9 October 2026 | Barcelona - Spain | Classroom | **€4,200.-** |
| 12 - 16 October 2026 | Munich - Germany | Classroom | **€4,250.-** |
| 9 - 13 November 2026 | Kuala lumpur - Malaysia | Classroom | **€2,250.-** |
| 16 - 20 November 2026 | Amsterdam - Netherlands | Classroom | **€4,200.-** |
| 7 - 11 December 2026 | London - U.K | Classroom | **€4,250.-** |
| 14 - 18 December 2026 | Paris - France | Classroom | **€4,400.-** |
| 21 - 25 December 2026 | Istanbul - Turkey | Classroom | **€4,200.-** |