



OIL AND GAS

Renewable Energy Integration

Course code: OG-015

SPARK TRAINING

Professional training courses for leaders, specialists, and organizations seeking practical capability development.

info@sparktraining.eu

+31 85 115 0004 | sparktraining.eu

— Workshop Overview

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.

Why Attend

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

Who Should Attend

Electrical Engineers
Power System Engineers
Energy Managers
Utility Professionals
Renewable Energy Specialists
Operations and Maintenance Engineers
Anyone involved in power generation and grid

— Learning 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

— 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

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

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

— Upcoming Classroom Dates

DATE	LOCATION	FEE
5 - 9 October 2026	Barcelona - Spain	€2,100
12 - 16 October 2026	Munich - Germany	€2,125
9 - 13 November 2026	Kuala Lumpur - Malaysia	€1,400
16 - 20 November 2026	Amsterdam - Netherlands	€2,100
7 - 11 December 2026	London - United Kingdom	€2,125
14 - 18 December 2026	Paris - France	€2,200
21 - 25 December 2026	Istanbul - Türkiye	€2,100
4 - 8 January 2027	Amsterdam - Netherlands	€2,125

— Certificate and Registration

Participants who attend and complete the full programme receive a SPARK Training Certificate of Completion. For registration, in-house delivery, or availability questions, contact info@sparktraining.eu or +31 85 115 0004.