MERCURY

Fundamentals of Renewable Energy Course

21 – 25 December 2026
Rome (Italy)



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Istanbul - Türkiye: +90 539 599 1206
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Ref: 9070_251766 **Date:** 21 – 25 December 2026 **Location:** Rome (Italy) **Fees:** 7200 Euro

Introduction:

Renewable energy technologies are clean sources of energy with a much lower environmental impact than conventional energy technologies. Electricity generation is the leading cause of industrial air pollution worldwide. Most of our electricity comes from coal, nuclear, and other non-renewable power plants. Producing energy from these resources severely pollutes our environment, polluting our air, land, and water.

This renewable energy course will help you align with the world's concerns about climate change and reduce your carbon footprint. The fundamentals of renewable energy training will explore the various new technologies, construction, merits, and demerits of each type of renewable energy generation.

This renewable energy solutions training course will also consider methods of integrating renewable energy with the present grid system. State-of-the-art distributed energy and storage systems will be emphasized to meet the ever-growing demand for electricity.

Targeted Groups:

- Electrical Engineers.
- Maintenance Technicians.
- Management Professionals.
- Project Engineers.
- Transmission Engineers.
- Power Generation Engineers.

Course Objectives:

At the end of this certificate course in renewable energy, the participants will be able to:

- Understand the fundamentals of conventional power generation, transmission, and distribution systems.
- Understand the importance and roles of renewable energy in this modern age.
- Understand how to maximize natural resources and convert them into renewable energy solutions.
- Understand the components architecture between the solar and wind power generations.
- Create awareness of the types of renewed energy.
- Appreciate the benefits of harvesting renewable energy.
- Understand the characteristics and operations of each type of renewable energy.
- Explore the suitability of introducing renewable energy generation to your premises.

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Targeted Competencies:

At the end of this, the fundamentals of renewable energy course, the target competencies will be able to:

- Understanding the difference between renewable and non-renewable energies.
- Understanding the types of renewable energy.
- The benefits of harvesting renewable energy.
- The characteristics and operations of each type of renewable energy.
- Understanding the importance of renewable energy generation.

Course Content:

Unit 1: Renewable Energy and the World Today:

- Fundamentals of Electricity Generation and Transmission.
- Conventional Methods of Power Generation.
- Overhead and Underground Power Transmission.
- The AC power Distribution System.
- The Smart Grid.
- The Micro Grid.

Unit 2: Types and Characteristics of Renewable Energy and Generation of the Solar Energy:

- Overview of renewable energy available.
- Merits of Solar Power Generation.
- Characteristics of a Solar Panel Installation.
- Types of Photovoltaic Cells.
- The Inverter and Smart Meter.
- Operation of the Solar Parks.

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Unit 3: The Wind Power, Construction, and Operation of Wind Turbines:

- Overview of Wind Power Generation of Electricity.
- Construction of the Wind Turbines.
- Operations and characteristics of the main components of the Wind Turbine.
- Merits of Wind Power.
- Rotor Blade Designs.
- Onshore and Offshore Wind Farms.

Unit 4: Bioenergy, Tidal, and Hybrid Renewable Energy Systems:

- Characteristics of Biomass Power Generation.
- Operations and Components of a Biomass Renewable Energy.
- Characteristics of a Tidal Wave Energy Generation.
- Operations of the Tidal Wave Renewable Energy.
- Operations of Hybrid Renewable Energy Systems.
- Merits of Hybrid Renewable Energy Systems.

Unit 5: The Distributed Energy Resources DER and Storage System:

- Importance of Distributed Energy Resources.
- Integration of renewable energy to the grid.
- Energy Storage Systems.
- Larger Capacity Batteries.
- Case Studies, Selection, and Design.

Conclusion:

In pursuit of a renewable energy certificate, participants will engage in renewable energy skills training, blending theoretical knowledge with practical experience. This fundamentals of renewable energy course aims to enhance participants' capabilities to implement renewable energy solutions effectively within their respective fields.

Upon completion of the fundamentals of renewable energy training, attendees will have the opportunity to obtain a renewable energy certificate, which will evidence their proficiency and dedication to fostering sustainable energy practices.