

## **Mastering Renewable & Alternative Energies**

### DAY 1

Global Warming and Reducing Carbon Footprint and its Impact to the Environment and the World

Global warming potential and minimizing carbon footprint

Sulphur hexafluoride (SF<sub>6</sub>) gas alternatives and environment friendly ester oils

Smart Grid Architecture and Overall Vision

Smart Grid Technologies

Internet of Things and Artificial Intelligence in Smart Grids

Microgrids Characteristics and Merits

### DAY 2

Solar Power Technologies and Characteristics

Solar Power Overview

Photovoltaic (PV) Cells

Concentrated Solar Power

Bifacial Solar Modules

New Generation Solar Roof Tiles

Solar Parks around the World

### DAY 3

Wind Farms and Wind Turbines Capacities

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

Digital Wind Farms

Onshore and Offshore Wind Farms

### DAY 4

Hydro Electricity, Biomass, and Geothermal Features and Merits

Types and characteristics of hydro power plant

Pros and cons of hydro electric energy

Introduction to bio mass renewable energy



Biomass and ethanol production

Geothermal power generation

Tidal energy operations and characteristics

DAY 5

Bulk Energy Storage and Distributed Energy Resources

Importance of energy storage as part of the renewables

Large capacity batteries

Distributed energy resources technologies

Significance of renewable energy integration

Wrap up session with Q&A