

# Renewable Energy Futures

Challenges and Opportunities for Renewable Energy Technologies

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## About the Course

Renewable Energy is one of the fastest-growing markets worldwide and one of the key drivers for any energy transition to meet energy sustainability goals. Indeed, renewable energy provides the optimal pathway to deliver most of the emission cuts needed at the necessary speed. Renewables can provide over 90% of the energy-related CO2 emission reductions required, using safe, reliable, affordable, and widely available technologies.

Renewables, particularly solar and wind energy, are increasingly cost-effective for utilities, homeowners, business owners, and communities. The falling price of solar and wind systems results from improvements in technology and economies of scale among manufacturers. On the other hand, because renewables systems can be installed in cities, towns, and remote areas, they offer local engineers and technicians job possibilities.

This Renewable Energy Futures training course will provide a solid foundation for understanding and deploying important renewable energy technologies such as wind and solar. The delegates will be equipped with the latest knowledge on renewable energy technologies and their characteristics and how to decide which renewable energy technology to use or target for the future energy mix. It includes an overview of the most mature technologies and their applications in all the sectors of the economy, e.g. buildings, electricity systems, industry etc. It also provides also an overview of the interaction between renewables and economics, the environment and policy.

## Training Approach

This Renewable energy futures training course will combine presentations with practical exercises supported by video material and case studies. The participants will be encouraged to participate actively in the questions & answers sessions.

## Core Objectives

After completing this course, each delegate will have gained 25% of vital skills in renewable energy and its applications.

### The delegates will be able to:

- Understand the opportunities and challenges of renewable energy technologies
- Gain knowledge to analyse further renewable power systems and renewable energy projects and plan for the future penetration of renewable energy.
- Acquire more about the renewable energy industry and its futures
- Increase effectiveness when engaging in renewable energy projects and investment operations
- Improve skills on sustainable energies and their socio-economic benefits and environmental advantages

## The Attendees

This training course would be of great use to almost anyone interested in improving their knowledge and skills in renewable energy technologies.

### Likewise, it will be valuable to the professionals but not limited to the following:

- Human Resources Directors
- Energy Engineers
- Policy & Decision Makers
- Energy Planners
- Consultants
- Environmental Specialists
- Project Managers
- Projects Developers
- Investors
- Financial Institutions and Funds
- Business Development Professionals

# DAILY DISCUSSION

## DAY ONE

### INTRODUCTION AND OVERVIEW OF THE DIFFERENT RENEWABLE TECHNOLOGIES

- Definitions
- Characteristics of Renewable Energies
- Solar Energy
- Wind Energy
- Hydropower Energy
- Geothermal Energy
- Biomass Energy

## DAY TWO

### BENEFITS AND APPLICATIONS OF EACH TECHNOLOGY

- Renewable Technologies
- Benefits of Renewable Energy
- Applications of each Technology
- Combining Renewable Energy Technologies
- Assets Management

## DAY THREE

### GRID INTEGRATION, TRANSMISSION, AND DISTRIBUTION

- Renewable Power & Electricity Systems
- Integration of Renewable Energy in the Grid
- Transmission
- Distribution
- Off-Grid Solutions

## DAY FOUR

### ENERGY STORAGE, SMARTS GRIDS, AND DIGITALISATION

- Energy Storage Options
- Smart Grids and Renewable Energy
- Digitalisation
- Forecasting
- Monitoring, Data Management, and Reporting

## DAY FIVE

### RENEWABLES MARKET DEVELOPMENT, POLICIES, AND ECONOMICS

- Market Trends and Structures
- Renewable Energy Costs
- Policies and Regulations Incentives
- Support Mechanisms for Renewable Energy
- Financing of Renewable Energy Projects