The Fundamentals of Wind and Solar Power (G907)

Tutor(s)

Brian Matthews: Independent Consultant, Founder and Managing Director of TerraUrsa.

Overview

The aim of this course is to provide an overview of wind and solar power technology, how it works and its role in decarbonization and the energy transition.

Duration and Logistics

Classroom version: A half-day course comprising a mix of lectures, case studies and exercises. The manual will be provided in digital format and participants will be required to bring a laptop or tablet computer to follow the lectures and exercises.

Virtual version: One 3-hour interactive online session. A digital manual and exercise materials will be distributed to participants before the course.

Level and Audience

Awareness. The course is aimed at non-technical staff and those who do not have a scientific background but want a basic introduction into the topic. The subject matter will be covered from very basic principles and be of interest to staff from a range of departments including legal, graphics, administration and technical support.

Objectives

You will learn to:

1. Understand why there is a need to transition to renewable energy.
2. Recall the challenges of a Net Zero energy transition.
3. Appreciate how wind and solar power technology works and what the management of an asset looks like through its life.
4. Describe what the business opportunities are for using, developing and investing in renewable energy.
5. Have an awareness of what the policy and government strategies are that support a Net Zero transition.

Course Content

Course Details

This short course covers the key aspects of wind and solar power and will give participants a fundamental understanding of the role of this technology in the energy transition. Topics to be covered include:

- What renewable energy is, with a specific focus on wind (on- and off-shore) and solar
- How wind and solar produce electricity, and where / when they work best
- What the challenges are within the renewable energy sector and some of the solutions, including the use of energy storage
- Examples of wind (on- and off-shore) and solar projects
- Why companies are decarbonizing by investing in and using renewable energy (policy, strategy, reputation)
- What the global energy trends are and what the future could look like