

Introduction to Renewable Energies

3 days
Overview

EMT/INTENNOU-E

LEVEL

Awareness

PURPOSE

This course provides an overview of renewable energies and their development status.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:

- list the technical and economic status of the various renewable energy production channels,
- describe the problem of energy storage in connection with the intermittent production,
- list the barriers to the development of these sectors.

WAYS AND MEANS

This session is done in collaboration with Kerdos Energy, expert company in energetic transition and sustainable development for industries, from strategy to technical expertise.
Numerous data from industrial projects.

LEARNING ASSESSMENT

Quiz at the end of the training session.

PREREQUISITES

No prerequisites for this course.

Agenda

ENERGETIC CONTEXT

Energetic worldwide context.
Place of renewable energies in the energy world.

0.25 d

RENEWABLE ENERGIES: DIFFERENT TYPES OF PRODUCTION

For each production line, the following point are detailed: state of maturity in the world, in Europe & France, the main companies and different technologies, the barriers and economical support programs to develop renewable energies.

Bioenergies: biogas, biofuels.
Wind: on and offshore.
Solar: thermal or photovoltaic.
Hydrogen: production means, current and future prospects, storage.
Marine energies.
Geothermal energy/geothermics.
Hydraulic power.

2 d

PROBLEMS LINKED TO ENERGY STORAGE

Main challenges.

0.5 d

Available technologies and future development: different types of processes (physical and chemical).
Comparison of their characteristics: yield, power, availability, intensity, duration.
Network and smart grids.

SOCIETAL ACCEPTANCE OF NEW & RENEWABLE ENERGIES

0.25 d

Societal consequences and problems linked to new energies development.
Impact on the production development.

Monitoring and control tools, communication challenges and constraints, managing the relationships with partners.