

Consultant / Trainer

Jurgen Grotzsch



Petrogenium (in collaboration with EPTS) Geo-Energy and the Global Energy System participants in this course will gain a thorough understanding of the global energy system and its transition toward net-zero emissions and energy security, with a strong focus on geo-energy and subsurface resources such as hydrocarbons, geothermal, hydrogen, and carbon sequestration. They will learn the workflows for exploring and developing both conventional and new energy resources, as well as how to transfer expertise from hydrocarbon to new energy projects, which is vital for a successful energy transition.



Participants

This course has been designed for geoscientists and other professionals who plan to work in energy exploration and development as well as underground storage and sequestration projects. The course is recommended for graduate students, staff from the energy industry as well as employees of the public sector and from regulators as an introduction to the global energy system and its' inherent challenges. It is of particular interest for decision makers who need to set directions and priorities in the energy transition.

Prerequisites

Basic understanding of geosciences is beneficial. Previous exposure to or involvement in the energy industry can be helpful but is not required.



Learning Objectives

The learning objectives of this course include understanding the current global energy system and its transition towards net-zero emissions and energy security, with a focus on geo-energy and subsurface resources. Participants will learn the workflows and methodologies for exploring and developing conventional, unconventional, and new energy resources, and how expertise from hydrocarbon developments can be transferred to new energy projects. They will also gain insights into trends, requirements, and opportunities in the energy transition, and develop the strategic skills needed to lead change and support their organizations in achieving sustainable energy goals.

Learning Objectives

The training course has the following goals:

- Provide an introduction to the global energy system
- Present a global overview of current energy production and consumption
- Introduce all main energy resources used globally
- Discuss the role of the global carbon cycle and climate change
- Understand the workflow of hydrocarbon exploration - Play Based Exploration (PBE)
- Provide insights into subsurface reservoir characterization for clastics and carbonates
- Receive an introduction to field development planning (FDP) for energy resources
- Present and discuss a number of landmark hydrocarbon and geothermal projects
- Introduce subsurface and surface development concepts for Geo-Energy
- Highlight the role of uncertainties in the subsurface
- Illustrate the potential and additional benefits of geothermal energy
- Introduce the hydrogen exploration
- Provide an outlook for trends and developments in the global energy market
- Understand the present-day global LNG market and its' role
- Discuss the main challenges and risks in the energy transition
- Address the role of geosciences in the energy transition

Programme

5 DAY Course

1. Overview of the global energy system
2. Introduction to all currently used energy resources
3. Exploration and Development of hydrocarbons, geothermal and hydrogen
4. New developments in the global energy demand
5. Outlook on opportunities and risks in the energy transition