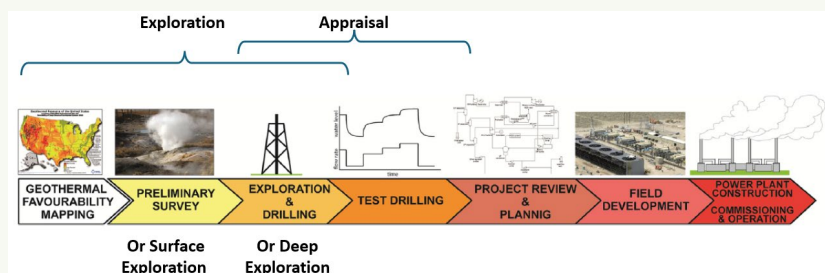# Risk and Uncertainty Assessment of Geothermal Projects

Making smart decisions in geothermal development starts with a solid understanding of risk and uncertainty.

In this course, you'll discover a robust, easy-to-use, and auditable methodology for geothermal risk assessment – tailored to deliver consistent and actionable results.

Drawing inspiration from well-established risk frameworks used in other subsurface industries, our innovative approach addresses the complexity of geothermal projects, where multiple geological and commercial factors determine success.

You will learn how to identify, quantify, and manage the critical uncertainties that influence project viability and investment outcomes.

Course Programme

Day 1: Foundations

- **Introduction** to geothermal power and to risk and uncertainty.
- **Alignment:** introductory lecture to establish a **common understanding** of the principles, terminology, and unique challenges of the geothermal business. This session ensures all participants start from the same page, regardless of background.
- **Exercise 1:** Thermal regime analysis of a geothermal well.
- **Exercise 2:** Opportunity screening using the **Power Density Methodology**.

Day 2: Case studies, Framework, and REM

- **Learning from the Field – Case Studies:** Analysis of **real-world geothermal projects**, with a focus on the lessons learned from their risk and uncertainty profiles.
- **Framework for risk and uncertainty assessment** in geothermal projects. Explore the theoretical and practical foundations for evaluating uncertainty and risk in geothermal projects—from resource potential to financial viability.
- Introduction to the **Reverse Enthalpy Methodology (REM)**, an **innovative approach** developed specifically for geothermal projects. You will learn how to integrate geological, technical, and economic uncertainties into a coherent evaluation framework.

Day 3: Exercise, Integration, Consolidation

- **Capstone exercise:** Participants will apply the concepts and tools learned to perform a **technical and economic evaluation**, and ranking, of a set of geothermal blocks.
- **Integration:** guided discussion to consolidate knowledge and reflect on the methodologies covered.

Who should attend

This course is designed for professionals aiming to deepen their understanding of risk and uncertainty analysis in the geothermal sector.

It is ideal for:
- geoscientists,
- engineers,
- energy economists
- decision-makers

Those directly involved in exploration, development, financing, or strategic planning of geothermal projects.

This course will provide participants with the critical tools and insights needed to assess and manage geological and financial uncertainties effectively.

Developers of the course

The course has been developed jointly by Geological Engineering Network and Rose Subsurface Assessment.

Geological Engineering Network Srl
www.geoenginet.com

Geological Engineering Network (GEN) is a network of highly experienced geothermal and oil and gas experts who have worked for major and independent companies including Enel Green Power (EGP – a world leader in geothermal power), Shell, ENI, Repsol, OMV and others – as well as renowned figures in academia.

Together, the team has hundreds of years of experience and offers world-class skills and expertise in geothermal and oil and gas development.

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Rose Subsurface Assessment
www.roseassoc.com

Rose Subsurface Assessment specializes in subsurface risk analysis, teaching key concepts in managing risk and uncertainty, and implementing consistent evaluation procedures. It provides support to the energy sector and authorities through courses, consulting, and software.

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