



## ***Green Energy Frontiers***

### ***Bridging Geoscience with Energy professionals***

#### **GEOHERMAL PROJECTS IN ROMANIA – FROM IDEA TO REALITY**

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#### **ABSTRACT**

This presentation explores the journey of geothermal projects in Romania, focusing on two key case studies: Beiuș and Tășnad. It delves into the processes, challenges, and outcomes of transitioning geothermal energy concepts into tangible realities. Highlighting Romania's regulatory framework, which mandates specific licenses for exploration and exploitation, the document outlines the steps from obtaining exploration and exploitation licenses to project implementation.

Case Study I (Beiuș), a geothermal project completed between 2018 and 2022, involved drilling a 2,800-meter geothermal well, installing an advanced electro-submersible pump, modernizing a thermal power plant, and constructing a 1,665-meter geothermal pipeline. These efforts resulted in an increased production capacity of 10.96 Gcal/h (12.73 MWth), reduced reliance on non-renewable energy, and improved energy supply for residents, with significant environmental and economic benefits.

Case Study II (Tășnad) highlights efforts to increase geothermal energy production for the city's tourist area, navigating challenges like tight timelines, weather conditions, and regulatory hurdles. Key activities include drilling a 1,500-meter geothermal well, constructing a thermal module, and addressing power constraints. Despite all challenges, the project has achieved significant milestones, thanks to proactive planning and stakeholder collaboration.

Both projects emphasize sustainability through reduced reliance on non-renewable energy sources and highlight the importance of collaboration, proactive planning, and innovative technology in advancing Romania's geothermal capabilities. The lessons learned provide valuable insights for future geothermal investments, ensuring smoother implementation and contributing to Romania's renewable energy transition.

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