CLEAN AIR TASK FORCE

EPG ENERGY POLICY GROUP

Unlocking the geothermal energy potential of Romania

Based on 2026 report by Energy Policy Group, supported and designed by Clean Air Task Force

Geothermal energy can play a crucial role in ensuring access to always-on, reliable power in Romania. Romania can tap into its geothermal potential, but forward-looking decisions will need to be made in this regard. The existing strategic documents, such as National Energy and Climate Plan (NECP) and the Long-Term Strategy (LTS) make only limited reference to geothermal energy, suggesting that decision-makers may need to reconsider its role in the sector.

Romania's advantages in geothermal energy development

- **Transferable workforce and expertise in drilling, subsurface analysis, and project development** stemming from the established oil and gas sector
- **Proximity to leading geothermal markets,** such as Hungary, allowing knowledge transfer and regional cooperation
- **Existing geothermal projects,** including district heating systems
- **Significant geothermal potential,** particularly in the Western Plain (Pannonian Basin area)
- **Possibility of utilizing existing oil and gas infrastructure** and supply chains

Challenges and opportunities for geothermal energy in Romania

- **Romania's geothermal potential remains largely untapped.** Despite favourable geological conditions, geothermal energy contributes only marginally to the national energy sector and is primarily limited to district heating and spa applications.
- **Regulatory and administrative barriers slow down deployment.** Fragmented permitting procedures, lack of a clear legal framework, and outdated subsurface data significantly increase project risk and development timelines.
- **Geothermal can become cost-competitive with proper support.** EMBER's recent analysis indicates substantial capacity can be developed at costs below gas-fired generation, including up to 800MW in Romania under favourable conditions before 2030.

- **O&G capabilities can accelerate market development.** Existing expertise, infrastructure, and abandoned wells offer a strong foundation to reduce costs, de-risk exploration, and scale both conventional and next-generation geothermal technologies.
- **Early-stage risk is the main barrier to investment.** Uncertainty around resource validation and high exploration costs limit private sector participation without risk-sharing mechanisms.

In 2024, Romania ranked sixth among EU Member States in terms of gross geothermal heat production. As for electricity generation, this is limited to only five Member States, with Romania having no projects in this area.

Figure 1: Growth of geothermal heat production in the EU (2015–2024)
Source: Eurostat

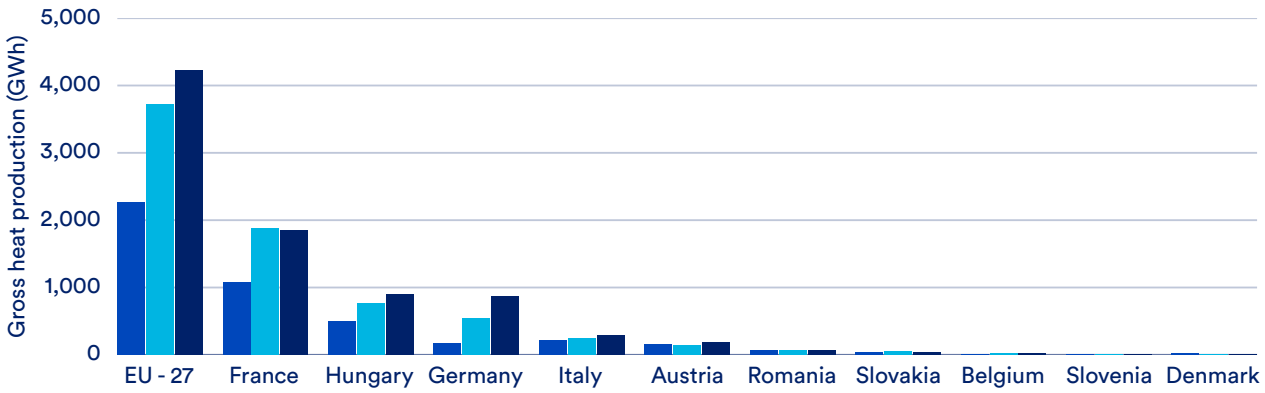
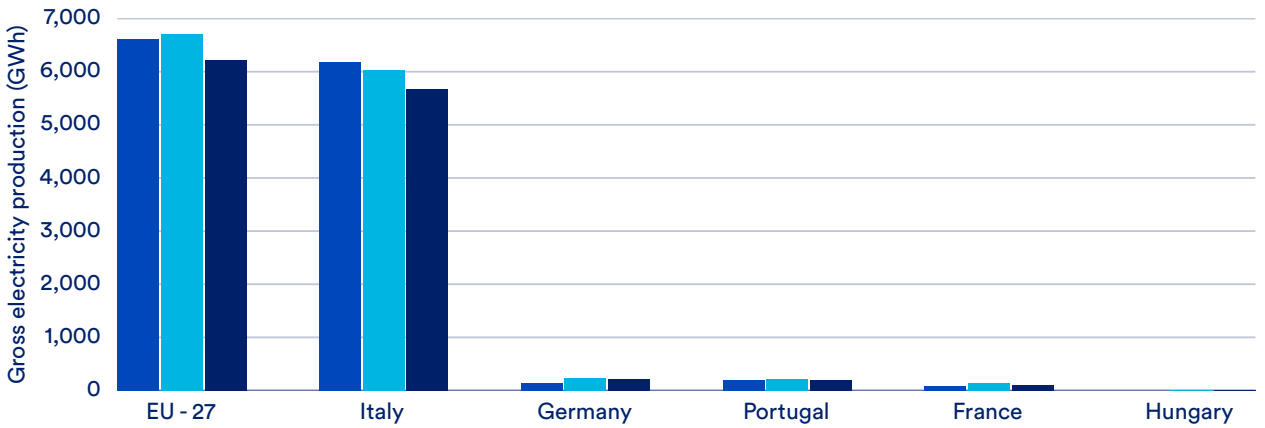
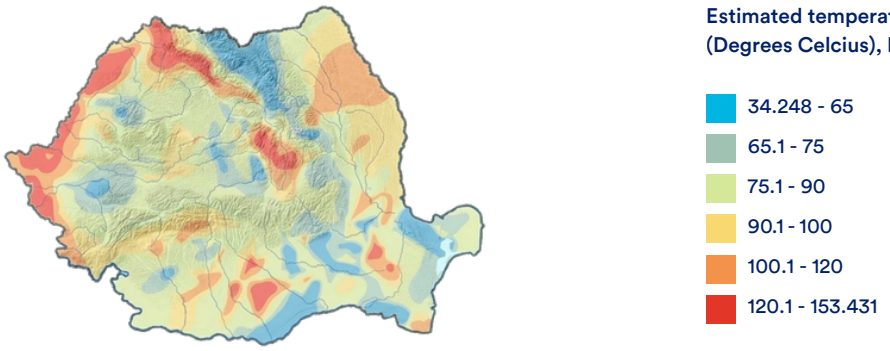


Figure 2: Changes in geothermal electricity output in Europe (2015–2024)
Source: Eurostat



At national level, temperature mapping remains quite limited, with most assessments still relying on maps developed in the 1980s, which identify only a few areas reaching temperatures above 120°C at a depth of 3000 metres.

Figure 3: Estimated subsurface temperature at 3000m depth (Geothermal Potential, Romania)
Source: University of Bucharest



Existing national policy measures supporting geothermal energy

- **Development of dedicated financing programmes** for geothermal energy, including support schemes under instruments such as the Modernisation Fund
- **Improvement and completion of the legislative framework,** aiming to clarify permitting procedures and align regulations with geothermal-specific requirements
- **Designation of acceleration areas for renewable energy projects,** including geothermal, to streamline permitting and facilitate faster deployment.

Calls for action and policy recommendations

- National Agency for Mineral Resources, Petroleum and Geological Storage (ANRMPSG) , Geological Institute of Romania, the University of Bucharest and other relevant institutions should **collaborate to develop updated geothermal potential maps.**
- ANRMPSG should **clarify the institutional responsibilities** related to geothermal development. Define the **regulatory treatment for next-generation geothermal systems** under Romanian mining and energy legislation.
- Establish a **one-stop-shop permitting mechanism** for geothermal projects in order to reduce administrative complexity and shorten development timelines.
- Designate **dedicated** geothermal **acceleration** areas based on resource mapping and existing district heating infrastructure.
- Create targeted financial support schemes specifically for geothermal drilling and exploration activities rather than broader district heating investments.
- Expand geothermal-specific educational and retraining programs, particularly for former oil and gas sector workers.
- **Support municipalities in developing pre-feasibility studies** and local geothermal heating strategies.
- Encourage the **integration of geothermal energy into district heating decarbonisation** plans and local heating and cooling strategies under the EED framework.