European Federation of Geologists

NOVEMBER 2025

GEOTHERMAL MANIFESTO

Geothermal Panel's Vision for a Competitive Europe

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Geothermal energy plays a crucial role in the Clean Industrial Deal, and **geologists are essential for the characterisation and exploitation of geothermal resources**. Their scientific and technical contribution is vital for identifying and developing geothermal reservoirs in a safe, efficient, and sustainable manner.

The **European Federation of Geologists (EFG)** welcomes the publication of the Competitiveness Compass, which highlights the importance of maximising industrial aspects of decarbonisation, promoting innovation in clean technologies, and ensuring a secure and resilient energy system. Geothermal energy aligns perfectly with this vision and must be an integral part of the Clean Industrial Deal.

Given Europe's geothermal potential, it is important to note that geothermal energy can play a **key role in the field of heating and cooling**. We must ensure that local authorities make the most of this resource. In addition to its capacity for energy production, geothermal energy has the potential to extract metallic minerals from deep geological formations. This new technology could significantly **reduce Europe's dependence on critical metallic minerals and energy imports, while leaving a small environmental footprint**, including very low carbon emissions. Another potential of geothermal energy is that the geological formations below the surface provide a huge **capacity for energy storage**. The cyclically stored fluids are expected to be not only safely stored but also efficiently recovered, making underground energy storage the largest battery ever.

In December 2024, energy ministers adopted Council conclusions calling for a Geothermal Action Plan to drive these investments. Commissioner Jørgensen supported this call during his confirmation hearing and the TTE Council, with the International Energy Agency encouraging the EU to fully tap into geothermal energy. In this context, it is crucial to provide geologists with the necessary resources to conduct in-depth studies and monitoring. **Geologists are key to this transition, thanks to their ability to identify the most suitable sites for geothermal development and their expertise in managing geological and environmental risks**. Failing to mobilise this expertise would directly undermine project bankability and slow down geothermal deployment.

Now is the time to turn these commitments into concrete actions by incorporating geothermal energy in the Clean Industrial Deal. To unlock the full potential of geothermal energy and enhance the role of geologists, we propose the following measures:

1. Publish a **dedicated Geothermal Action Strategy and Plan** alongside the Electrification Action Plan and the Heating and Cooling Strategy in Q1 2026.
2. Launch the **Geothermal Industrial Alliance** to share best practices and ensure the effective implementation of recently agreed legislation, with geologists playing a central role.
3. Introduce **targeted geothermal demonstration financing for the manufacturing industry** within the EU Innovation Fund and provide **incentives for the training and employment of certified professional geologists specialised in geothermal energy**. Supporting certified geologists (such as EurGeol) ensures high technical and ethical standards in resource assessment and sustainable use.
4. Provide **targeted support for developing heating markets** (e.g. district heating networks and building renovations) and for the purchase of drilling equipment.
5. Establish an **EU-wide financial risk guarantee scheme** to attract private capital and incentivise investments, actively involving geologists in geological risk assessment. The involvement of professionally certified geologists (such as EurGeol) in evaluating geological risks improves investor confidence and reduces technical uncertainty.
6. Develop **incentives for disclosing and utilising industrial databases** – especially those from the oil industry – for geothermal purposes. Establish a research fund to support research into lesser-known areas of geothermal energy.
7. **Place renewable heating and cooling on equal footing with electricity**, considering that heat comprises nearly half of the EU's energy consumption.
8. Recognise the services provided by geothermal energy, including grid balancing and lithium extraction, **ensuring that Power Purchase Agreements and new capacity power auctions adequately remunerate these benefits**.
9. **Overcome permitting bottlenecks through binding timeframes, streamlined processes, and recognition of geothermal energy as an overriding public interest**. Moreover, it is essential to accelerate the approval of geological studies and exploratory drilling authorisations.

These non-legislative steps will drive demand for European raw materials, make energy more affordable, and guide innovation and competitiveness. Geologists, with their unique expertise in understanding underground resources and the connection with the environmental issues, are fundamental to achieving this vision. Achieving a low carbon and sustainable economy involves energy transition from fossil fuels to renewable ones. Geothermal is base load renewable energy that complements the intermittency of solar and wind energy. It is a main contender in diversifying the energy supply and the large-scale integration of Earth's heat into the energy mix. Geothermal is a major step towards a sustainable future. The European Federation of Geologists and its members stand ready to support the European Union in making geothermal energy the cornerstone of Europe's sustainable industrial future.

About EFG

The European Federation of Geologists (EFG) is the largest and most influential network of geoscience professionals across the Council of Europe countries, with 28 national associations representing a direct membership of approximately 50,000 individuals. EFG collaborates extensively with leading geoscience organisations worldwide, including in Australia, the USA, Canada and South Africa, indirectly reaching over 150,000 experts. EFG is listed in the EU Transparency Register No. 97706556032-41.

About the Panel of Experts on Geothermal Energy

The EFG Panel of Experts on Geothermal Energy supports the development of European policies of interest to geologists and geothermal topics while strengthening public acceptance of geothermal energy. The panel identifies challenges in the sector and proposes solutions at European level. Its mission is to promote excellence in geological practice within geothermal energy by facilitating the exchange of experience among geothermal experts across Europe; helping harmonise standards and support the sustainable growth of geothermal utilisation; and assisting EU institutions and national bodies in informed decision-making on geothermal development.

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