



Accelerating the development of  
**deep geothermal**  
technology in Europe



**ETIP-DG**

European Technology & Innovation  
Platform on **Deep Geothermal**

[www.etip-dg.eu](http://www.etip-dg.eu)

# ABOUT THE ETIP-DG

The **ETIP-DG (European Technology & Innovation Platform on Deep Geothermal)** is an open stakeholder group, endorsed by the European Commission under the Strategic Energy Technology Plan (SET-Plan), with the overarching objective to enable deep geothermal technology to proliferate and reach its full potential everywhere in Europe.

- › **The primary objective is overall cost reduction, including social, environmental, and technological costs.**

The ETIP-DG brings together representatives from industry, academia, research centres, and sectoral associations, covering the entire deep geothermal energy exploration, production, and utilization value chain.

The ETIP-DG actively collaborates with the **European Technology and Innovation Platform on Renewable Heating & Cooling (RHC-Platform)**, which gathers stakeholders from the biomass, geothermal and solar thermal sector to define a common strategy for increasing the use of renewable energy technologies for heating and cooling.

# ACTIVITIES

➤ The development of a long term common **Vision for deep geothermal** for power and/or heat.

The development of a **European Strategic Research Agenda** for deep geothermal for the next decade(s).

➤ Recommendations for the implementation of the strategic research agenda through a customized **Technology Roadmap**.

Contribution to the **European industry and research** to maintain and consolidate its leading position in energy technologies for geothermal.

**The definition of the needs of RD&I activities covers the development of all deep geothermal technologies.**

# ORGANISATION

The ETIP-DG is organised as follows:

- › The **Steering Committee** is the highest decision-making body of the ETIP-DG and is responsible for providing guidance to the activities of the Platform.

President: R. Bertani, ENEL Green Power  
Vice-Presidents: B. Leray, Storengy (Group ENGIE)  
and J. Van Wees, TNO & UU

- › The **ETIP Secretariat** is responsible for the standard business activities of the ETIP. It provides logistical and organisational support to the platform and its WGs.
- › **Working Groups** (WGs) which, acting under the guidance of the Steering Committee, contribute to the achievement of the ETIP's objectives by collecting and developing stakeholders' inputs from the respective sectors.

## STRUCTURE

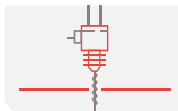


# GET INVOLVED: WORKING GROUPS



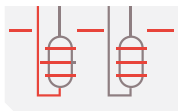
## › Exploration

Reducing exploration costs, developing new techniques, improving exploration of geothermal resources to decrease the geological risk.



## › Deep drilling

Reducing costs with novel drilling concepts and improvements to current drilling technology, optimising the economics of drilling operations.



## › Production technologies

Increasing reservoir performance, developing new materials and equipments to optimize the efficiency and decrease costs.



## › Surface systems / Generation

Improving the overall conversion efficiency, addressing the needs for flexibility in the integrated energy system.



## › Non-technical

Improving the RD&I framework, supporting market deployment, promoting social and environmental sustainability.

Participation to the activities of the ETIP-DG is free and on a voluntary basis. Members are informed about the activities of the ETIP-DG and are invited to contribute to the drafting of the Strategic Research Agenda and the Technology Roadmap.

To become member of the ETIP-DG, visit [www.etip-dg.eu](http://www.etip-dg.eu)

The Secretariat of the ETIP-DG is jointly managed by:



National Research Council of Italy

Contact:

[info@etip-dg.eu](mailto:info@etip-dg.eu)

[www.etip-dg.eu](http://www.etip-dg.eu)



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› **The primary objective is reducing costs, increasing performance of geothermal technologies and increasing social welfare in Europe.**

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FROM VISION TO IMPLEMENTATION

**A roadmap for deep geothermal technology in Europe**



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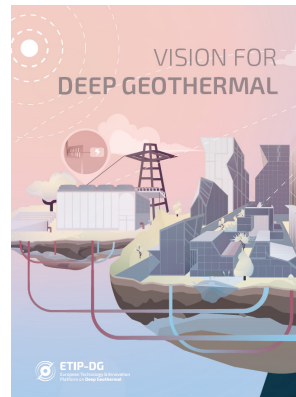
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## FROM THE VISION ...

1

The **Vision for Deep Geothermal** looks at future development of deep geothermal energy and highlights the great potential of untapped geothermal resources across Europe.

The publication highlights how the success of the energy transition entails designing optimal scenarios in terms of costs and affordability for the customers and the citizens, while guaranteeing energy comfort. It is designed to trigger a debate about how best to achieve a future for geothermal energy in Europe that is secure, affordable and carbon free, and which has the least impact on nature. It puts forward ten key messages:



- › Resource potential
- › Fit for purpose
- › Stability & availability
- › Growth
- › Sustainability
- › Cogeneration & hybridization
- › Flexibility
- › Optimization
- › Cool & appealing
- › Market penetration & social dimension

## ... TO THE STRATEGIC RESEARCH AND INNOVATION AGENDA ...

The **Strategic Research and Innovation Agenda for Deep Geothermal** (SRIA) aims to shape the strategic plan for research and innovation (R&I) in the deep geothermal sector and to outline research priorities for the upcoming decades.

Where the "Vision" outlined the goals to be achieved in terms of performance and cost reductions, the SRIA recommends actions and research priorities that should be addressed to achieve the key technological and transversal challenges that could make the Vision a solid reality between now and 2050. It defines priorities for:

- › Prediction and assessment of geothermal resources
- › Resource access and development
- › Heat and electricity generation and system integration
- › From RD&I to deployment
- › Knowledge sharing
- › Next generation of technologies



2

## ... AND THE IMPLEMENTATION ROADMAP

3

The **Implementation Roadmap** sets the path to reach the overall objectives stated by the "Vision". The ultimate goal is the development of deep geothermal as a corner stone of the energy system to drive the city of the future. The identified topics and objectives were set along a time frame from 2020 till 2030 based on inputs received from the ETIP-DG Steering Committee on each topic's level of priority, Technology Readiness Levels and Key Performance Indicators to monitor their impact.

To make the roadmap clear and tangible, the time horizon of the roadmap is set at 2030, but this a long term vision that lays further beyond that. The "Roadmap" aims at unlocking the potential of geothermal energy with:

- › Better Prediction and assessment of geothermal resources
- › More efficient geothermal resource access and development
- › Deployment of geothermal heat and electricity generation in an energy system integration
- › Improvement of social welfare through deep geothermal market uptake and facilitation of knowledge sharing

