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# Geothermal Collaboration through the International Energy Agency Geothermal TCP

Samantha Alcaraz[1,2]*, Brian Carey[1,2]
Earth Sciences New Zealand[1], IEA Geothermal[2]
samantha.alcaraz@earthsciences.nz

## IEA GEOTHERMAL - WHO WE ARE

The **International Energy Agency** Geothermal Technology Collaboration Programme (**IEA Geothermal**, also known as the **Geothermal TCP**) fosters **international collaboration amongst governments, industries, and organisations advancing geothermal energy research, development, and deployment**.

IEA Geothermal is managed by an Executive Committee (ExCo) of member representatives.

The 16 participating members include **14 countries, 1 sponsor and the European Commission** (Fig. 1).

The IEA Geothermal delegates are well connected into IEA Paris activities and other international organisations that are working on geothermal energy such as CETPartnership, EGEC, IPGT, ETIP -Geothermal, Geothermica Initiative, Geothermal IWG and more.

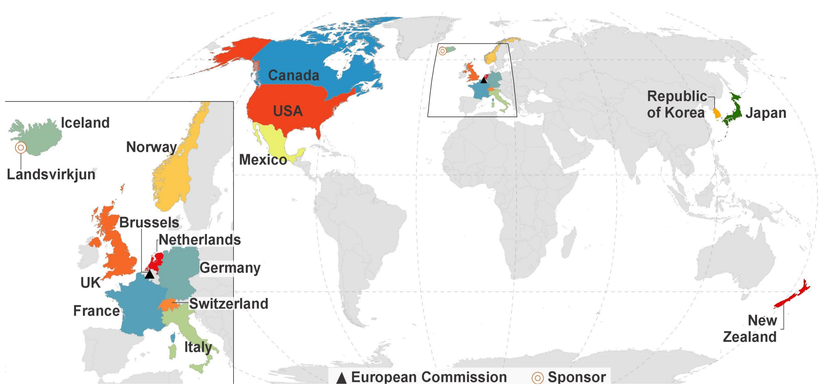



**Figure 1. IEA Geothermal members as of June 2026.**

## IEA GEOTHERMAL - OUR STRATEGIC ACTIVITIES

The underlying ethos of the IEA TCPs is that stakeholders from the public and private sectors **share knowledge** and **work collaboratively** to **deliver effective outcomes to energy and climate challenges**. The Geothermal TCP was established in June 1996 and started operating in March 1997 at its first ExCo meeting in Sendai, Japan. It is now in its 6th operating term (March 2023 - February 2028).

The current Strategic Plan fosters sustainable geothermal utilisation through five strategic pillars: **collaborate**, **communicate**, **facilitate**, **investigate** and **initiate** (Fig. 2). Key focus areas are to **inspire**, **educate** and **share data, information** and **activity enhancing outcomes** amongst members and beyond. Collaborative work-streams and workshops **raise awareness**, **showcase innovation** and **enhance partnership** in geothermal energy and geothermal research.

Our website serves as a platform to collate and share information. It includes details on our activities, some of which are introduced below, geothermal data and publications, workshop and symposium presentations, and upcoming events. It is complemented by announcements on our LinkedIn channel, which provides regular updates on our activities and people involved.




**Figure 2. Strategic pillars of activities.**

## UNDERGROUND THERMAL ENERGY STORAGE



*Stephan* Bolay, *Task Leader*

Underground Thermal Energy Storage (UTES) stores heat or cold in the ground to balance energy supply and demand. Led by Stephan Bolay (GEOTEST, Switzerland), activities include workshops / symposia in collaboration with Geothermica Initiative to highlight UTES's role in decarbonising the heating and cooling sector.

These events connect experts and authorities to share insights, policy frameworks, investment models, and pilot projects. Presentations, case studies and recordings can be found on our website.

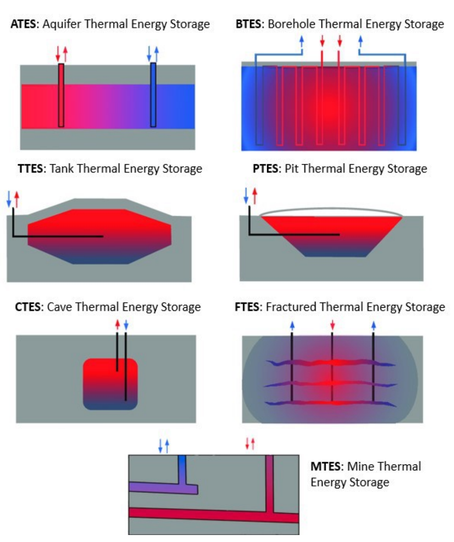



**Figure 3: UTES technologies.**

GEOTHERMICA INITIATIVE

## SUPERHOT ROCK



*Jenna* Hill, *Task Leader*

The Task Group on Superhot Geothermal in Dry and Low-Permeability Rock, led by the Clean Air Task Force (USA), supports collaboration between key players in New Zealand, Iceland, Japan, Norway, the USA, and Italy.

Its aim is to develop a pathway to commercialise superhot rock geothermal energy targeting economic development costs and maximum market uptake in dry rock conditions.

For more information, or to join the group:
www.iea-gia.org/superhot

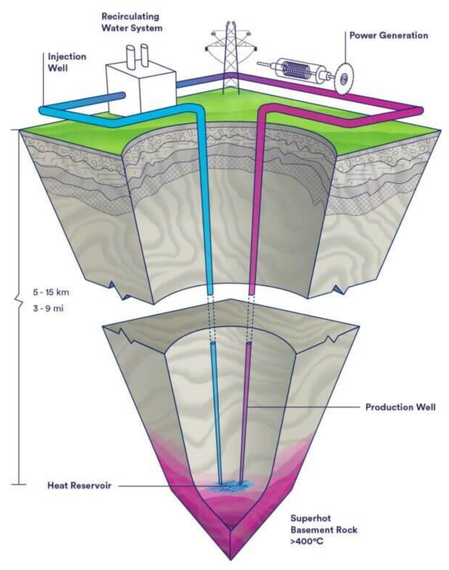



**Figure 4: Superhot rock energy Schematic (source: CAFT).**

## MINE WATER GEOTHERMAL ENERGY



*Alison Monaghan, Task Leader*

Alison Monaghan and colleagues from the British Geological Survey lead the Mine Water Geothermal Energy Task. An International Mine Water Energy Expert Group that has ~50 international participants meeting quarterly to share global activity and best practice in the sector. Mine Water Energy Symposia have been held annually since 2021.

For more information, access to the presentations and case studies or to join, visit:
www.iea-gia.org/mine-water-geothermal-energy

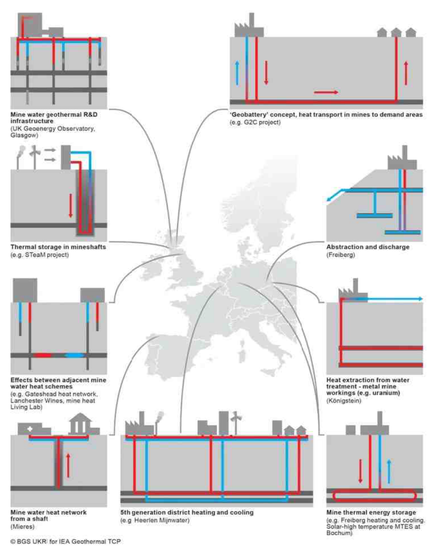



**Figure 5: Mine water energy Innovation and research projects (source: BGS).**

## WIDER SYSTEM BENEFITS



*Sarah Robinson, Task Leader*

Sarah Robinson (UK Department of Energy Security and Net Zero) leads this Task exploring how geothermal energy benefits national energy systems beyond cost and carbon abatement. The objective is to deepen understanding of geothermal energy's wider environmental, economic, and social impacts. To quantify them for comparison with other low-carbon technologies, in support of informed policy making and global decarbonisation efforts.

Department for Energy Security & Net Zero

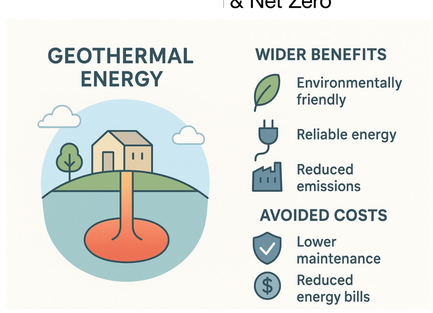



**Figure 6: Examples of wider system benefits using geothermal energy.**

More Information: www.iea-gia.org/wider-system-benefits

## GEOTHERMAL GAS MANAGEMENT



*Jónas Ketilsson, Task Leader*

Jónas Ketilsson from Landsvirkjun, Iceland, leads this Task that aims to foster international collaboration, enhance knowledge exchange, and drive innovation in atmospheric emissions management within the geothermal energy sector.

It includes assessing and cataloguing natural emissions, utilisation impacts, investigating methods for reinjecting $H_2S$ and $CO_2$, assessing use technologies, and developing IPCC-aligned emission management guidelines.

For more information, refer to the WGC 2026 paper from Ketilsson et al and pre-WGC Geothermal Gas Management Workshop information under:
www.iea-gia.org/workshops-and-symposium

Landsvirkjun

## DRILLING TECHNOLOGIES



*Manuela Richter, Task Leader*

Under the Emerging Geothermal Technologies activities, the Drilling Technologies task is led by Manuela Richter from PTJ, Germany.

A review of novel drilling systems and automation co-funded by IEA Geothermal, Japan Organization for Metals and Energy Security, and the Swiss Federal Office of Energy, was completed in early 2026. The study by Andreas Reinicke (TNO, Netherlands) covered five key areas: Novel Hole Making, Reservoir Connectivity, Ultra Hot Rock, Drill Robotics, and AI/ML Advisory Systems.



*Andreas Reinicke*

TNO

For more information, refer to:
www.iea-gia.org/activity-reports#wg13

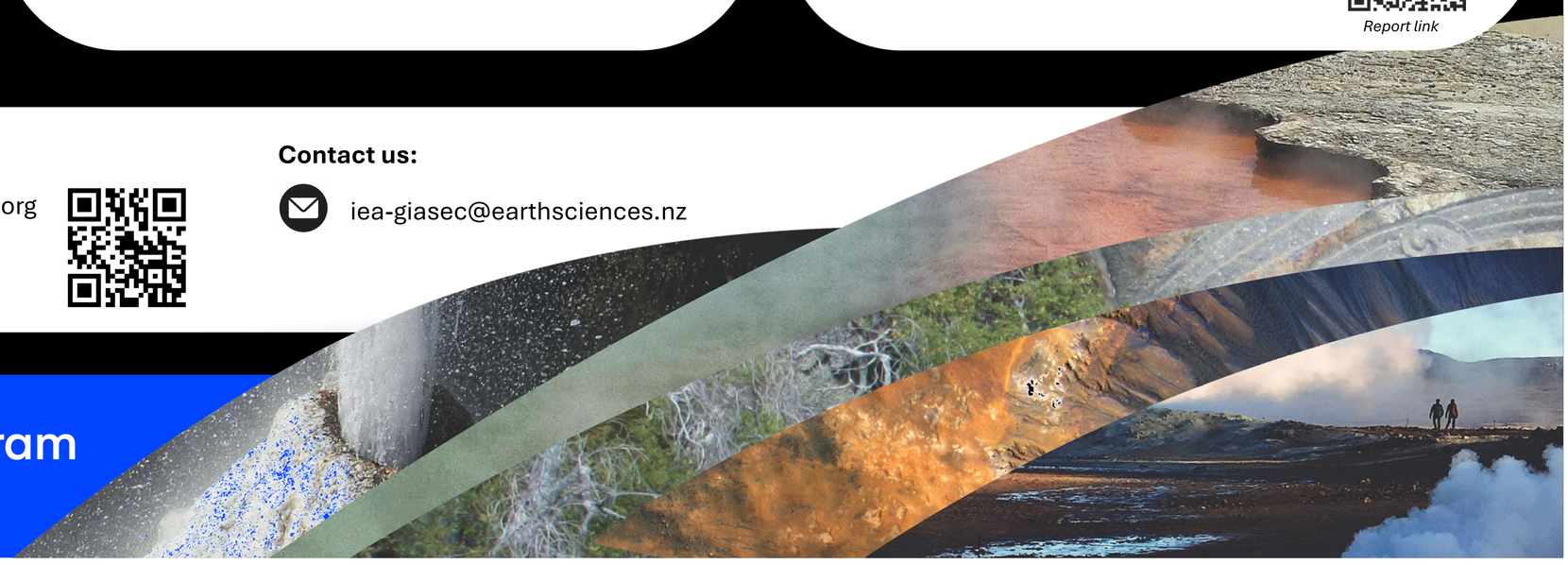
*Report link*

## MORE INFORMATION

**Workshop and Symposium presentations:**

**Website:**
iea-gia.org

**Contact us:**
iea-giasec@earthsciences.nz



Technology Collaboration Program
by IEA