CRM geothermal

About us

CRM-geothermal is a research project funded by the European Union to develop an innovative technology solution that will combine the extraction of mineral raw materials and geothermal energy in a single process.

Why?

- Europe aims to reduce its environmental footprint by increasing the percentage of renewable energy sources. Wind turbines, photovoltaics and electric cars require however a large amount of mineral raw materials.
- Many of these materials are considered as 'critical raw materials' (CRM) by the European Union but are imported from non-European countries where environmental and ethical standards may be less strict than in Europe.
- Europe is highly dependent on minerals and energy imports which contributes to the current supply chain disruptions and the energy crisis.

How can we contribute?

- Geothermal is a renewable energy resource from the ground that is available 24 hours a day in Europe.
- Some types of geothermal fluids contain important amounts of CRMs.
- Collecting CRM data on geothermal fluids across Europe.
- Understanding the geological settings for the CRM enrichments in nature.
- Developing extraction methods to seperate the CRM from the geothermal brine.

Who we are

Our project is coordinated by the Helmholtz Zentrum Potsdam Deutsches Geoforschungszentrum (GFZ) that is based in the north of Germany, close to Berlin.

We are a research consortium consisting of more than 35 institutions in total and we involve academic and industry partners both from the geothermal and the mineral raw materials area.

Why we matter

Combining the extraction of heat and minerals from geothermal sources in a single technology solution has a series of advantages:

- It reduces the environmental impact by extracting two things at once.
- It avoids legacies from mining activities by directly extracting metals from geothermal fluids.
- It has almost zero carbon footprint.
- It supports the development of a more ethical and resilient supply chain for critical raw materials.
- It reduces our dependency on imports from third countries, which are exposed to market and geopolitical risks.

"Co-production of critical raw materials and heat from geothermal brines can reduce the EU's dependency on imported critical raw materials by diversifying and securing a domestic and sustainable supply of these materials. We already know that some geothermal fluids carry a substantial amount of Lithium, which could be extracted for the domestic supply chains of electric vehicle batteries. In CRM-geothermal, we widen the research by investigating also the abundance of other CRMs in geothermal fluids and developing extraction methods for selected elements, such as Lithium, Strontium or Helium. Therefore, the results from the CRM-geothermal project will be supporting the aims of the Critical Raw Material Act as well as the REPowerEU plan."

Katrin Kieling
Project Manager

Useful resources

First press release

Latest news

Follow us

www.crm-geothermal.eu
@crmgeothermal

Contact

info@crm-geothermal.eu

Illustration: Leonnidas
Photo: Simona Regenspurg

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HADEA. Neither the European Union nor the granting authority can be held responsible for them.

Funded by the European Union