

Ore deposit formation across Europe:

What society knows today, what CHPM2030 will revolutionise tomorrow



CHPM2030

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What is CHPM2030?

CHPM2030 (Combined Heat, Power and Metal extraction from ultra-deep ore bodies with an aim of implementation by 2030) is a H2020 project funded by the European Union and working on a unique disruptive technology that will combine geothermal energy development and minerals extraction.

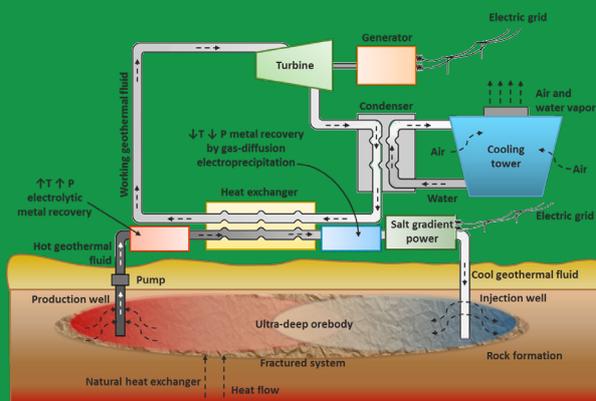
It will respond to two challenges:

The European energy market makes efforts to become less dependent on imported fossil fuels and to reduce the environmental impact of its energy supply. A major option, geothermal energy is already being used worldwide, including in many parts of Europe, because it is clean, renewable and constant.

Europe has another major challenge: securing the supply of critical raw materials, in particular metals, for industry and society. The dependency on metals is growing every year, despite significant efforts in the development of recycling and substitution.

What is the goal of CHPM2030 and how will it be achieved?

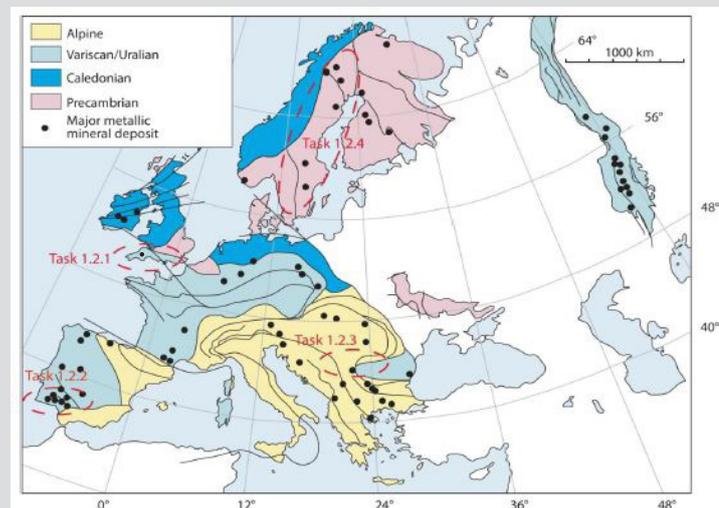
CHPM2030 develops an “orebody-EGS (Enhanced Geothermal System)” that will serve as a basis for the development of a new type of facility used for the co-production of energy and metals, in order to improve the economics of geothermal energy production.



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Why start there?

- › To know where the CHPM system can potentially be developed;
- › To understand and better target the geochemistry and structure of the different ore types;
- › To comprehend the origin and structure of macro- and micro-fracture systems.



Major ore deposits of Europe (after Wehred 2015), with the mining areas and their available data described in tasks 1.2.1 to 1.2.4 indicated (see appendices 1.2.1 to 1.2.4), i.e., in the Southwest of England, Southern Portugal, Northwestern Romania and Central and Northern Sweden.

Where are the options?

The project studies the CHPM potential in the following metallogenic provinces:

- › The Fennoscandian Shield Province, the study areas are three mining districts in Sweden;
- › The Variscan Province, the study areas are in SW England and in Southern Portugal;
- › The Alpine Province, the study area is in NW Romania.

What society knows today, what CHPM will revolutionise tomorrow:

Data are in most cases available only from the uppermost 1 km of the Earth's crust while CHPM would work at a depth of 4–7 km. Therefore, structural information and knowledge of the physical state of the upper crust need to be enlarged considerably in order to meet the goals of the CHPM2030 project.



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Photo: Courtesy Vigdís Harðardóttir, Iceland Geological Survey

