



## **Towards a regulatory framework for geothermal energy utilization in Finland**

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Finland has not been considered to be a country suitable for deep geothermal energy production due to its old crystalline bedrock with low heat flow. However, the new emerging technologies of harnessing heat from even more challenging environments have increased the feasibility of geothermal energy production from Fennoscandian bedrock. Since 2015, several geothermal projects have been initiated. The most advanced project is in the Helsinki capital area, an Enhanced Geothermal System (EGS) at depths greater than 6 km.

Stimulation of the first borehole was conducted in summer 2018. It received significant attention in the densely populated capital area. The Institute of Seismology, University of Helsinki (ISUH), received a large number of inquiries and reports of felt and heard earthquakes. The natural seismicity rate in Finland is low, and even though the largest of induced earthquakes was only of  $M=1.7$ , it was felt and heard in many locations around the capital area.

There is little information about the utilization of geothermal energy available in Finnish language and Finland does not have a legal framework for deep drilling or hydraulic fracturing. ISUH has been responding to the emerging needs for national regulation guidelines for geothermal energy utilization by compiling a guide to decision makers and geothermal operators in Finland. In addition, an interactive web page with information about different geothermal energy plants, as well as benefits and potential hazards associated with geothermal energy extraction is under development.