

Introduction to the Hungarian risk mitigation scheme

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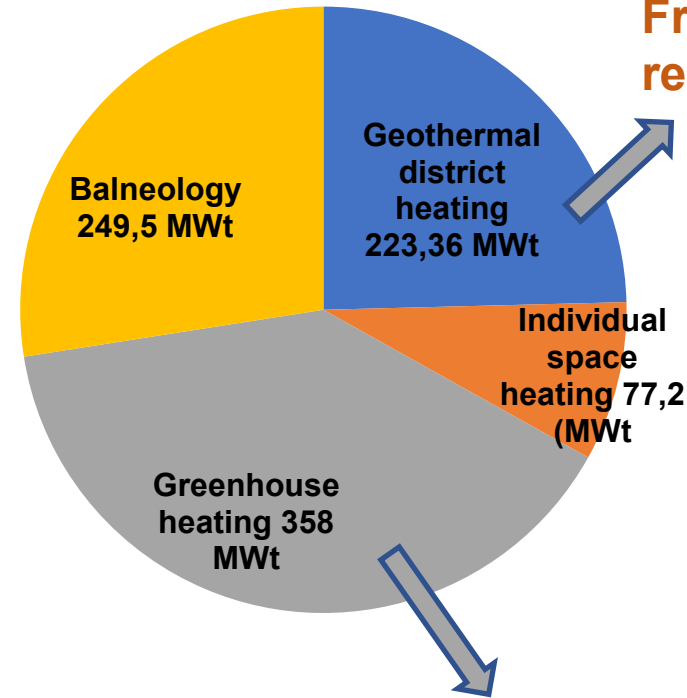
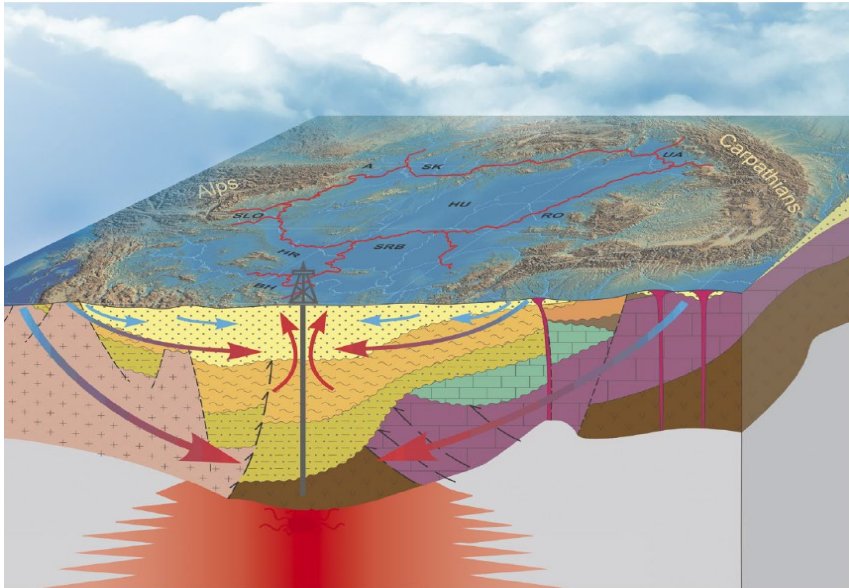
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GEORISK: to establish risk insurance all over Europe and in some key target third countries (HU, PL, GR) to cover risks associated with the development and the operation of a deep geothermal plant

HU: Total installed capacity : 906 MWt (4th in Europe)



Fractured carbonate basement reservoirs

Faults fractures are permeable zones only → high exploration risk

Porous basin fill reservoirs

(regionally extended, hydraulically connected geothermal aquifers → low exploration risk)

Call: Support of geothermal direct heat projects (via handling the geological risks of the first wells) – June 8, 2021

Program owner: Ministry of Innovation and Technology

Program operator: Mining and Geological Survey of Hungary

Total budget: 6 billion Hungarian forints (appr. 16,6 million euros)

Source of budget: state (Climate and Nature Protection Action Plan)

Duration: June 8, 2021-December 31, 2023 (continuous submission)

Eligible partners: companies, budgetary authorities (municipalities) and their consortia

Eligible activities:

- drilling of production-reinjection doublets (1000-2500 m) for geothermal energy production
- drilling of reinjections wells to complement already operating systems (1000-2500m)
- transformation / renovation of active thermal water wells/ doublets for geothermal energy production (1000-2500m)
- transformation / renovation of abandoned (e.g. hydrocarbon) wells/ doublets for geothermal energy production (1000-2500m)
- Pipeline construction (only between the production and reinjection wells and till the primary heat centre)

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Call: Support of geothermal direct heat projects (via handling the geological risks of the first wells) – June 8, 2021

Individual project costs: 100 million to 2 billion Hungarian forints (appr. 278 keuro to 5,5 million euros)

Eligible costs: only related to drilling and testing (no preparatory costs, geological exploration, etc.)

Reimbursement: after the well tests.

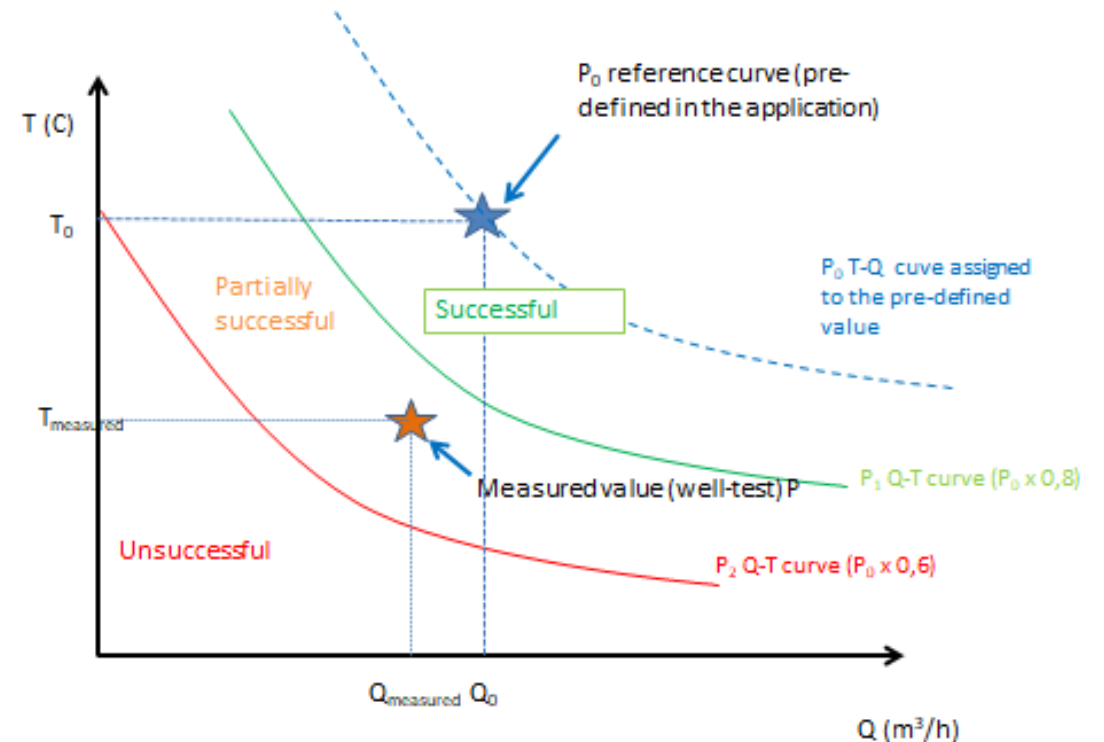
Rate of success: comparison of actual flow rates and temperatures to those values pre-defined in the feasibility study submitted in the application.

30% - successful

40% partially successful

60 % unsuccessful

Evaluation: Independent group of experts



First experiences – lessons learned

History of HU scheme: well-founded political commitment on the establishment of a risk mitigation scheme for deep geothermal:

- **Governmental decision 1345/2018 (VII.26) on a Mineral Resource Utilization Action Plan**
- **National Energy Strategy 2030**
- **National Energy and Climate Action Plan**
- **+ GEORISK project**

Even concept was clear, long and tedious work of formulating the call text (~ 1,5 years), many iterations, technical content ↔ usability of financial sources (state budgetary restrictions for certain activities)

HU actors are not familiar (yet) with the concept: Call requires well-prepared and concrete project ideas (e.g. sound geological model, already existing drilling licences), however actors expect the support of some „ideas”

So far 1 application received, but at least 4-5 major projects proposals expected in Q3-4 2021

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Thank you for your attention!

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