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GEOTHERMICA Initiative & CETPartnership TRI4
Workshop in Dublin 10/10/2023

Use of Low Temperature Geothermal Sources for Space Heating in Iceland

Heimir Tryggvason, National Energy Authority of Iceland

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Icelandic conditions

for space heating

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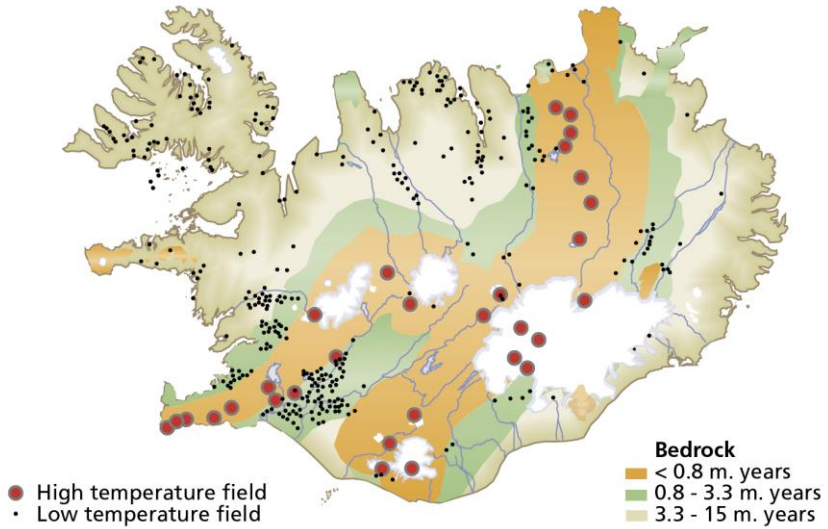
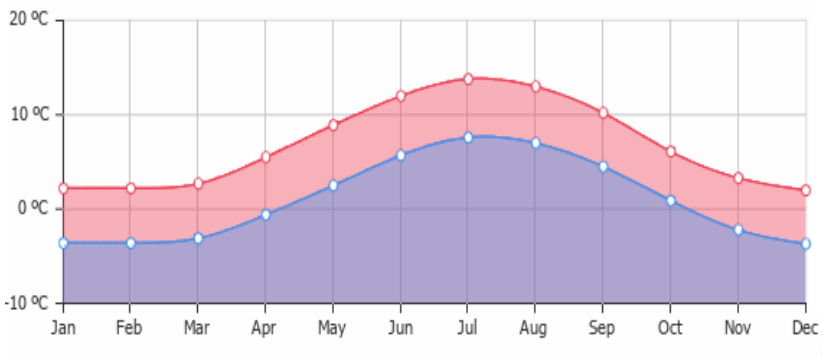
Geothermal fields

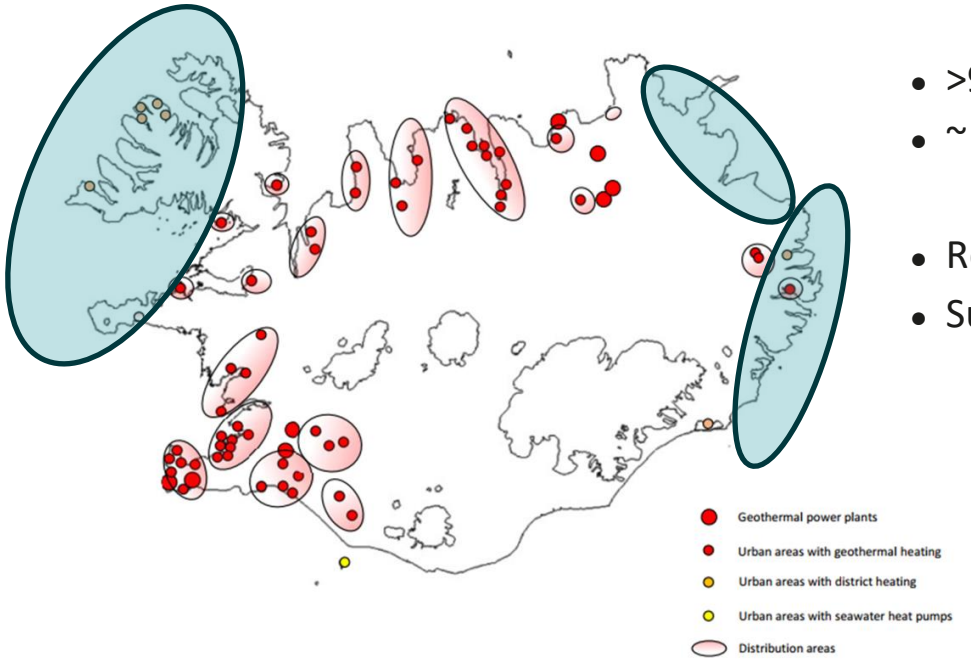


Average temperature in Reykjavík



Energy demand - 200 kWh/m^2

Geothermal district heating



- >90% of space heating through geothermal DH
- ~ 50% from geothermal power plants

- Remaining 10% heated with electricity
- Subsidized for residential housing
  - ~ 200 GWh direct el.
  - ~100 GWh el. DH

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Tarifs for heating - Support system

- Electricity for **residential** house heating subsidized
- Up to 40 MWh per year

Prices:

- Geothermal DH: 25-30 €/MWh
- Subsidized electricity 50 €/MWh

Subsidy system grounds for support

- Grants for alternative heating based on up to 12-year savings of subsidies
- Support scheme for individual heat pumps simplified
- Additional geothermal exploration/utilization support

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Effort towards savings

heat pump projects

2

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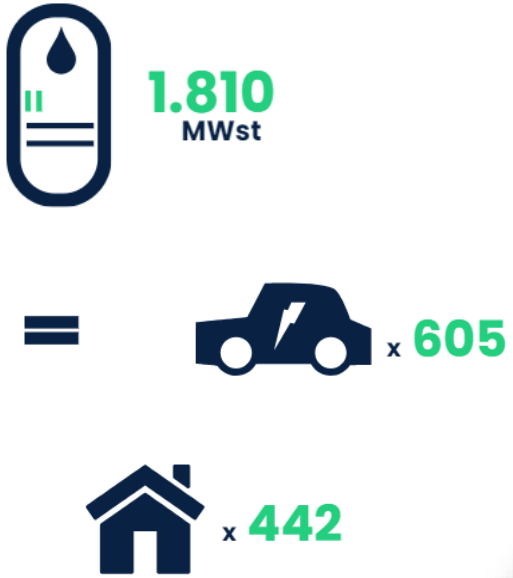
Heat pump grants

- Simplified support scheme
- Available to those eligible for subsidies
- 50% of equipment cost
- Up to 9.000 EUR

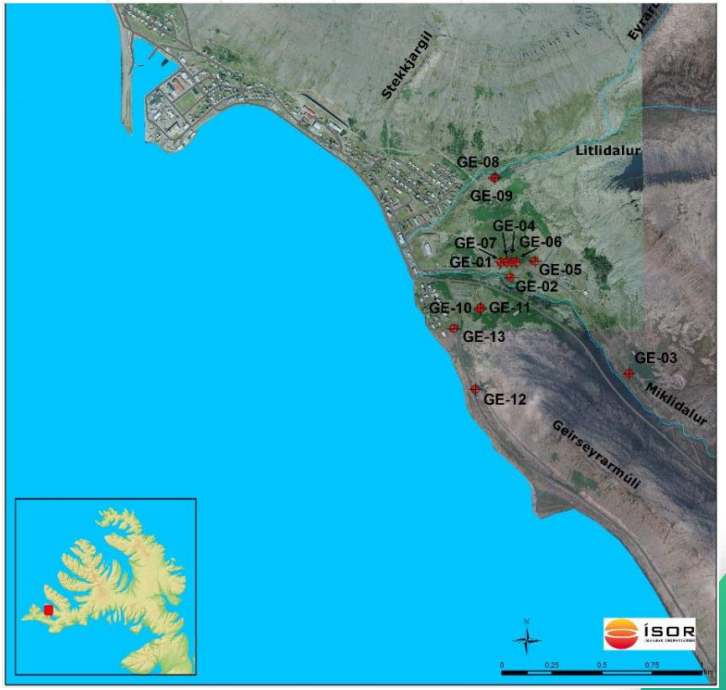


Seawater Heat pump - Vestmannaeyjar

- Population 4.500
- Annual heating need 82 GWh
- Heat pump station in operation 2018
- 4 x 2,6 MW heat pumps
- Sea temp. 8,6°C – cooled to 4°C
- Cooled seawater used for refrigiration
- 30% reduction in electricity use

Low temp geothermal

- Patreksfjörður, population 700
- Exploration since 1976
- 15 MWh heating need – currently electrical district heating
- Geothermal system, 30-40°C at 300 – 600 m depth
- Further drilling proposed for use with heat pump



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Ground source heat pump

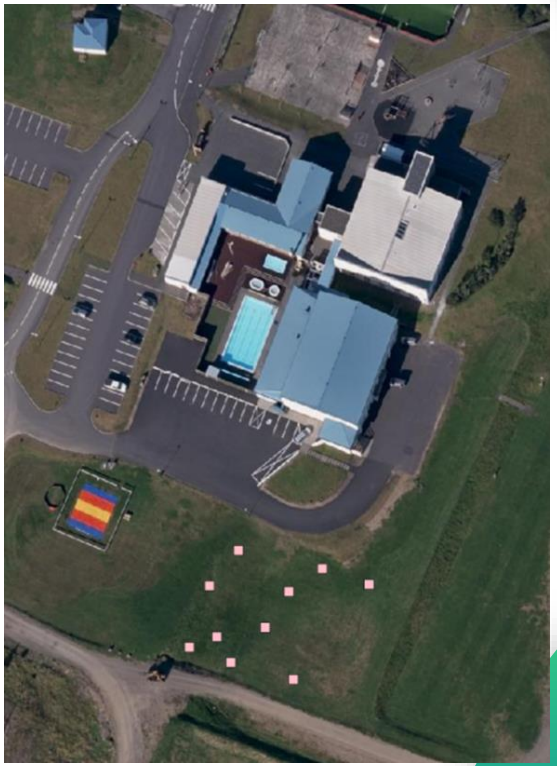
Swimming pool, school and sports hall

Heated with oil – annual 230-300 t CO_2

Installed capacity 240 kW

Ten 230 m holes drilled for vertical closed loop heat collection

Bottom temp. ~30°C



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Thank you

Questions?

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