

ÍSOR - Iceland GeoSurvey

Geothermal information

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Iceland GeoSurvey

- Owned by the Icelandic government.
- Operates on the free market on competitive basis.
- Provides specialist services to the Icelandic power industry, the Icelandic government and international companies.
- Profit goes exclusively into scientific research and to strengthen Iceland GeoSurvey.
- It is based on six decades of continuous experience in the field of geothermal and hydropower research and development.
- Established in 1945 as a part of the State Electrical Authority/National Energy Authority. Independent from 2003.

Fields of expertise

- Geothermal exploration
- Drilling Consultancy
- Well Testing and Evaluation
- Resource Assessment and Management

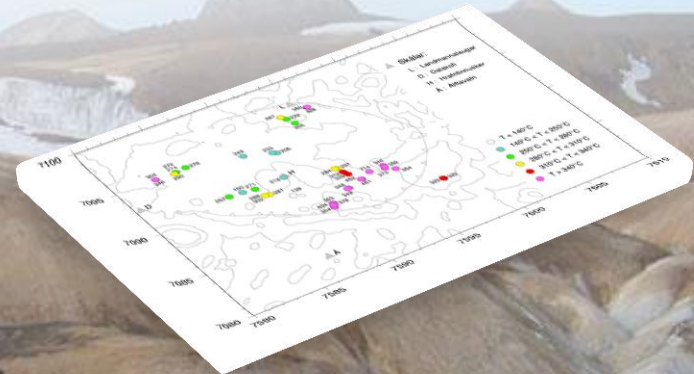
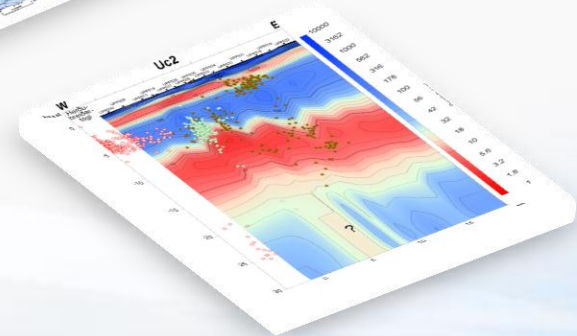
also

- Environmental Studies
- Groundwater Studies
- Engineering Geology
- Marine Geophysics
- Geothermal Training

Geothermal exploration

data collection

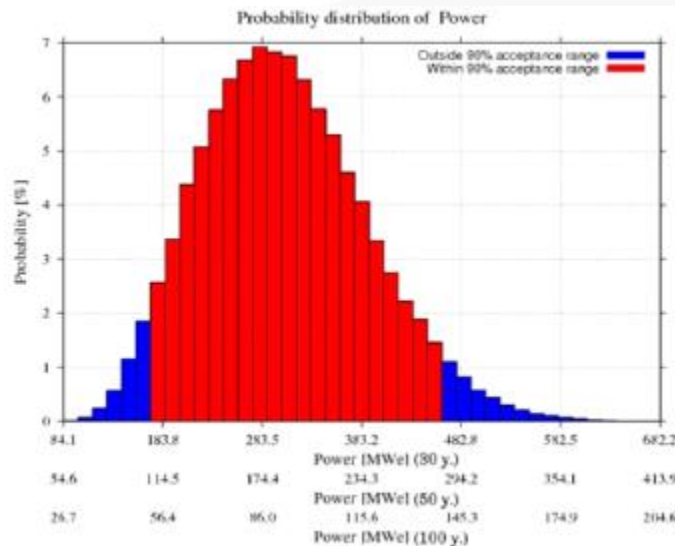
- Geological exploration
 - Geothermal, structural mapping
- Geophysical exploration
 - Resistivity measurements
 - Seismic surveys and monitoring
 - Gravimetric measurements and surface GPS
 - Magnetic surveying
- Geochemical exploration
 - Geothermal water
 - Groundwater
 - Gas and steam
 - Cuttings and cores
 - Scaling, corrosion
 - Rocks



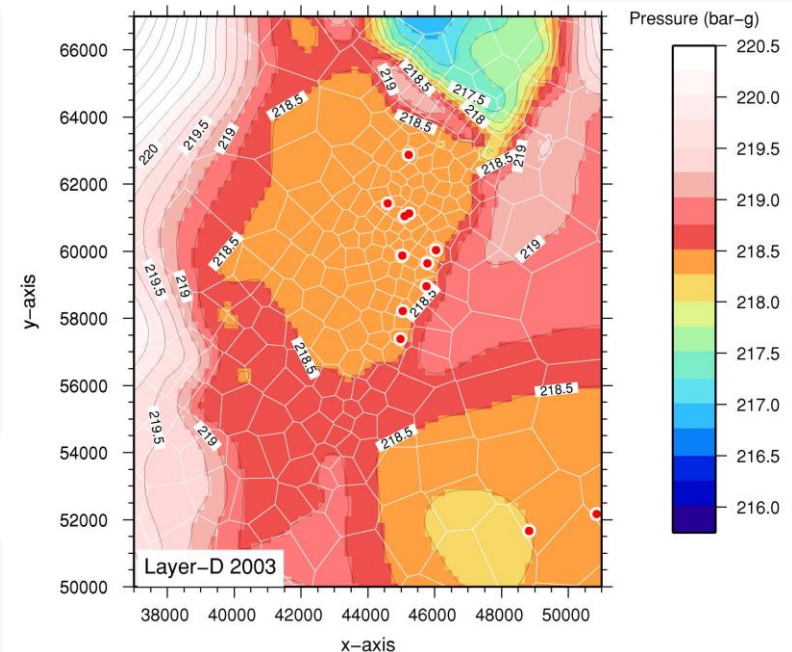
Volumetric assessment / Reservoir modelling

- Volumetric assessment is usually the first step in reservoir potential estimation.
- Reservoir modelling is the key to optimised reservoir management. It includes among others:
 - 3D finite element models of the geothermal fields where all available data are used as input.
 - Predicts the pressure and temperature decline of the reservoir with time.

Volumetric assessment,
using the Monte Carlo method



3D model



A framework for geothermal information

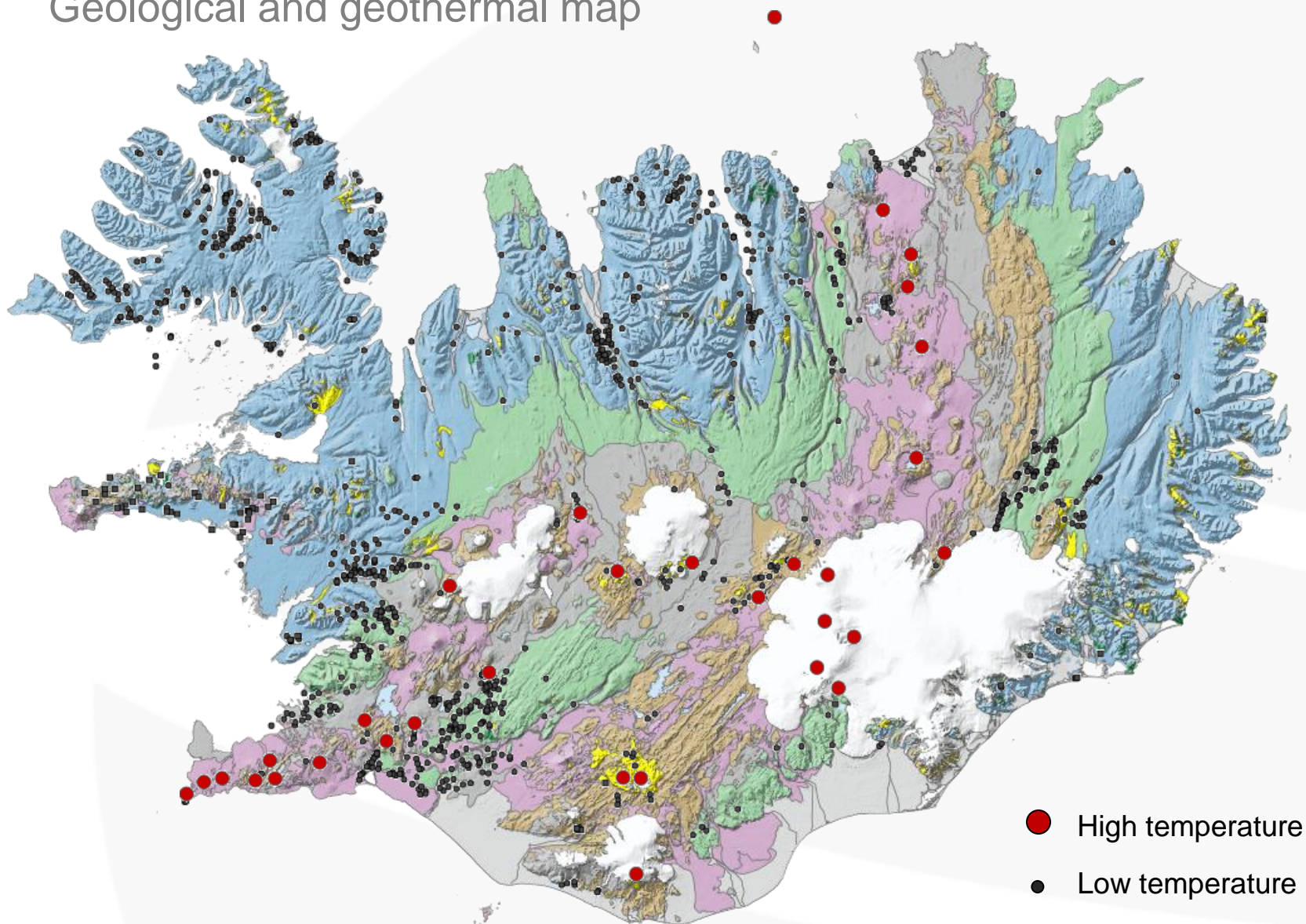
A project initiated by ÍSOR, National Energy Authority (Orkustofnun) and University of Iceland, supported by Reykjavík Energy: To create a framework for all aspects of geothermal resource data.

- Governmental Master plan of geothermal utilization
- NEA, the supervisory obligation and collection of data on geothermal resources and utilization.
- Power companies, compile data for reservoir estimation, return to appropriate authorities and make accessible to public or scientists.
- Spatial analysis capabilities of geothermal data.

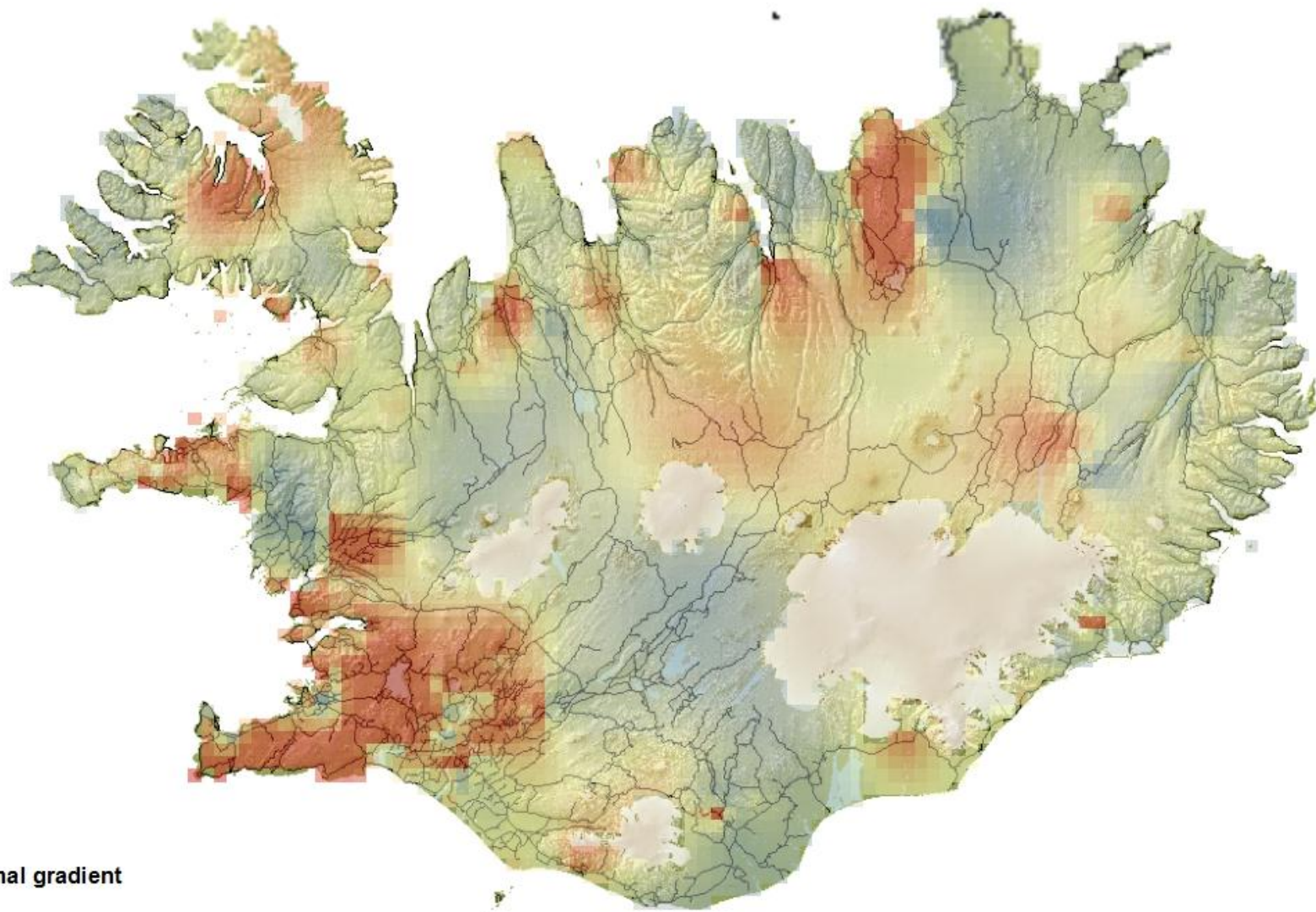
A framework for geothermal information

- Survey for all players in geothermal in Iceland: exploration – utilization – monitoring.
- Compatible with INSPIRE directive (infrastructure for spatial information) and ISO standards for geographic information.
- Data collection and harmonization of geothermal and geology maps at ÍSOR (e.g. Geological map of SW-Iceland and EU-project Thermomap).
- DoE [NGDS](#) (National Geothermal Data System) and [GDR](#) (Geothermal Data Repository).
- AGEA The Geothermal Reporting Code

Geological and geothermal map



Basemap: Geological map of Iceland by Haukur Jóhannesson and Kristján Sæmundsson 1999. Iceland, 1:1.000.000. Icelandic Institute of Natural History.



Geothermal gradient

Value

- High
- Low

**Matssvæði faghóps I í 2. áfanga rammaáætlunar
Áhrifasvæði virkjunarkosta**

