Current and future policies for geothermal energy in Europe

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Eesti Geoloogiateenistus

Majandus- ja Kommunikatsooniministeerium

EGA Estonian Geothermal Association

Agenda

- Required framework for geothermal
- Market creation
- Investment support

Streamlining investment in geothermal

The following policy interventions are required to support mainstreaming of the geothermal sector:

- Political visibility;
- Prioritisation of renewable heating and cooling to the same level as renewable electricity;
- Robust, efficient and transparent licensing and permitting rules;
- Mandates on local authorities to produce heat transition plans based on local renewable resources;
- An EU-wide financial risk mitigation framework;
- Removal of direct and indirect fossil fuel subsidies;
- A uniform carbon price applied on heating in all buildings across the EU.

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From European Green Deal to REPowerEU

- May 2019 **European Parliament elections** first time climate became a political issue. Significant increase of MEPs with clear priorities on the climate crisis **across the political spectrum**.
- Forced the appointment of the new Commission President to commit to a climate action agenda. Key was to increase the EU's 2030 climate target from a -40% reduction to at least 50%.
- The Commission proposed a **-55%** target in its European Green Deal Communication This required an increase in the targets for all of the key legislation to deliver this climate and energy target. This is called the **Fitfor55 package**.
- The Russian invasion of Ukraine led to a response package of financial and legal support. This is called the **REPowerEU plan**

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To reach the EU 2030 targets, energy demand covered by solar heat and **geothermal should at least triple.**

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Market drivers

Renewable Energy Directive (RED)	Binding RES HC target, licensing and permitting, risk mitigation, skills & qualifications, indicative targets for buildings and industry,
Energy Efficiency Directive (EED)	Planning mandate on local authorities to perform local renewable heating and cooling planning
Energy Performance of Buildings Directive (EPBD)	Mandates on energy renovations in buildings & mandate on buildings for solar (and geothermal)
Emissions Trading System for buildings (ETS 2)	Carbon price, based on the EU ETS applied on fossil heating suppliers in residential, commercial and public buildings.

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Demand for geothermal (RED)

- RED: Higher RED target to 40% final energy consumption by 2030.Increased to 45% under the REPowerEU plan.
- **Significance for geothermal:** Contains the legal definition of geothermal, which acknowledges deep and shallow solutions.
- **Renewable heating and cooling target:** This sub-target was introduced in 2018. The Commission proposed to make the 1.1 percentage point annual increase binding on all Member States. Whilst this is much lower than the 2 PP annual increase required to meet the -55% GHG 2030 target but it is a vital opportunity for all forms of geothermal energy.
- **Other measures:** These include measures for Member States to use such as risk mitigation frameworks, planning, phasing out fossil boilers, etc
- **Permitting:** REPowerEU amendments focused around geothermal "Traffic Light" system. Permitting process becomes much more transparent with 1 year timetable.

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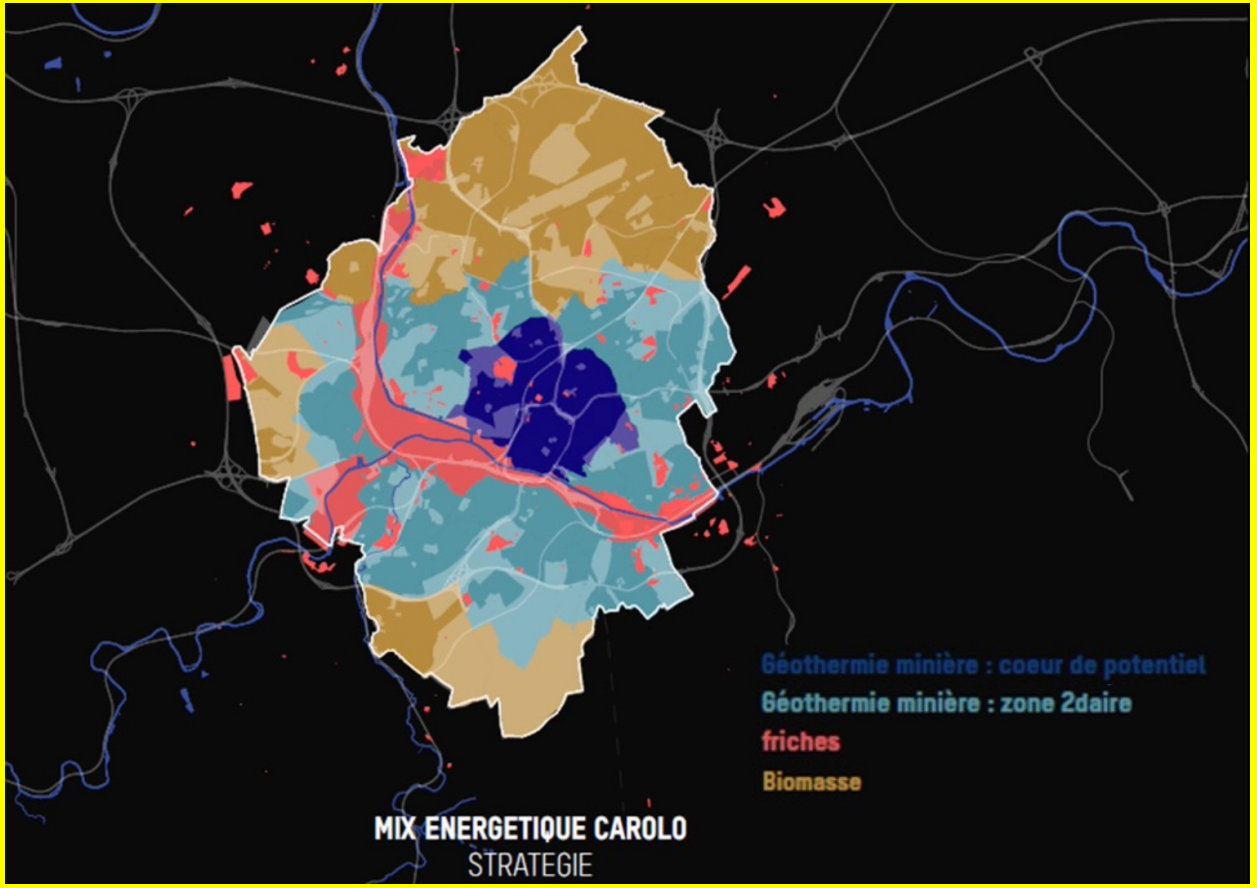
- **Planning (EED):** Mandate on local authorities (of 10,000 inhabitants) to prepare renewable heating and cooling plans. This is important as cities are increasingly planning and zoning geothermal systems.
- **Minimum Energy Performance Standards for buildings (EPBD):** These set minimum thresholds for building renovations effectively encourage changes to energy systems.



Charleroi (Belgium) heat plan

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- **Carbon price:** The EU ETS is to be extended to place a carbon price on heating in buildings. The burden to pay this carbon price falls on fossil heating suppliers. €81 per tonne of CO_2e on 14 June 2022. This is an essential policy instrument as it helps to levelise the cost of heating between geothermal, other renewable heating solutions and fossil energy.
- **Indicative targets in buildings and industry:** RED contains a requirement for governments to create conditions to allow 49% of buildings and industrial heating and cooling demand to be met by geothermal and other renewables.
- **60,000 large-scale heat pumps by 2030:** The REPowerEU Plan commitments to support mass deployment of large-scale heat pumps, a skills partnership to support new installers enter the sector, and training for permitting authorities.

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Investment support legislation

Renewable Energy Directive (RED)	National risk mitigation frameworks
Social Climate Fund (SCF)	Finance, from ETS 2, used to support investment in vulnerable households and SMEs.
Recovery & Resilience Fund	Grants and loans for Member States to investment in the energy transition.
Contracts for Difference	Strike price for geothermal projects over a period of time. Modelling on the SDE++ scheme in the Netherlands

Financial support for investments

- **Recovery & Resilience Fund:** Many countries have either allocated funding directly for geothermal (Bulgaria €100m, Poland €6m) or indirectly for building renovations. Additional 20,000,000,000 is added to the budget to support specific measures such as:
  - Boosting energy efficiency in buildings,
  - Decarbonising industry
  - Increasing the share of renewables
- **Social Climate Fund:** This is financed from the revenues of the ETS 2. It shall be used to support investments for renewable heating in vulnerable households and SMEs.
- **Contracts for Difference:** These will be introduced through the Innovation Fund and are focused mainly on hydrogen. The aim is to amend these to include geothermal based on the SDE++ scheme operated in the Netherlands.
- **Risk Mitigation Frameworks for heating and cooling;** The RED invites Member States to establish these to support achievement of the RES heating & cooling target.
- **Common Agricultural policy:** This provides programmatic and operational support to "greening" food production in the EU. Sustainability conditions are added to the programme which encourage investment in renewable resources.

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Welcome to the Geothermal Decade

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