

# GEOTHERMICA

## Increasing the Pace of Coordinated Research and Innovation in Geothermal Energy

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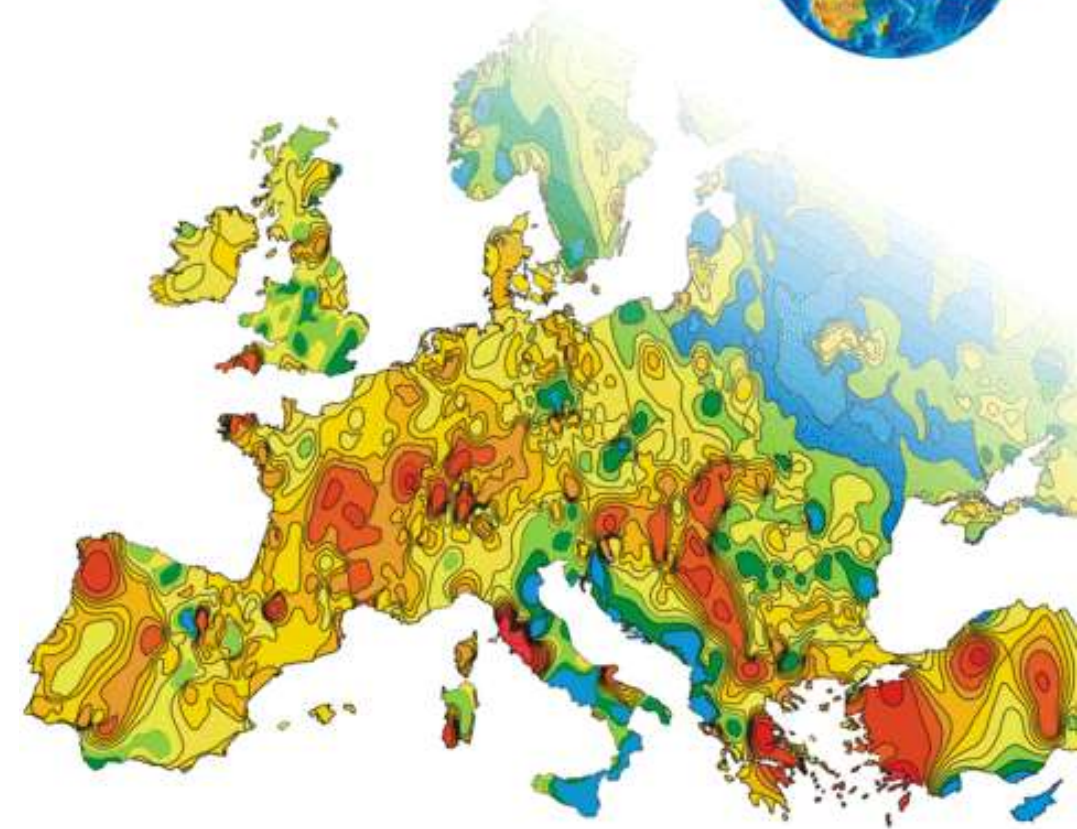
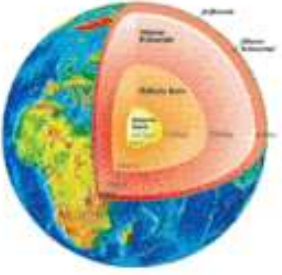
GEOTHERMICA has received co-funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 731117.



# Geothermal energy can play a major role in the reduction of CO<sub>2</sub> emissions in Europe

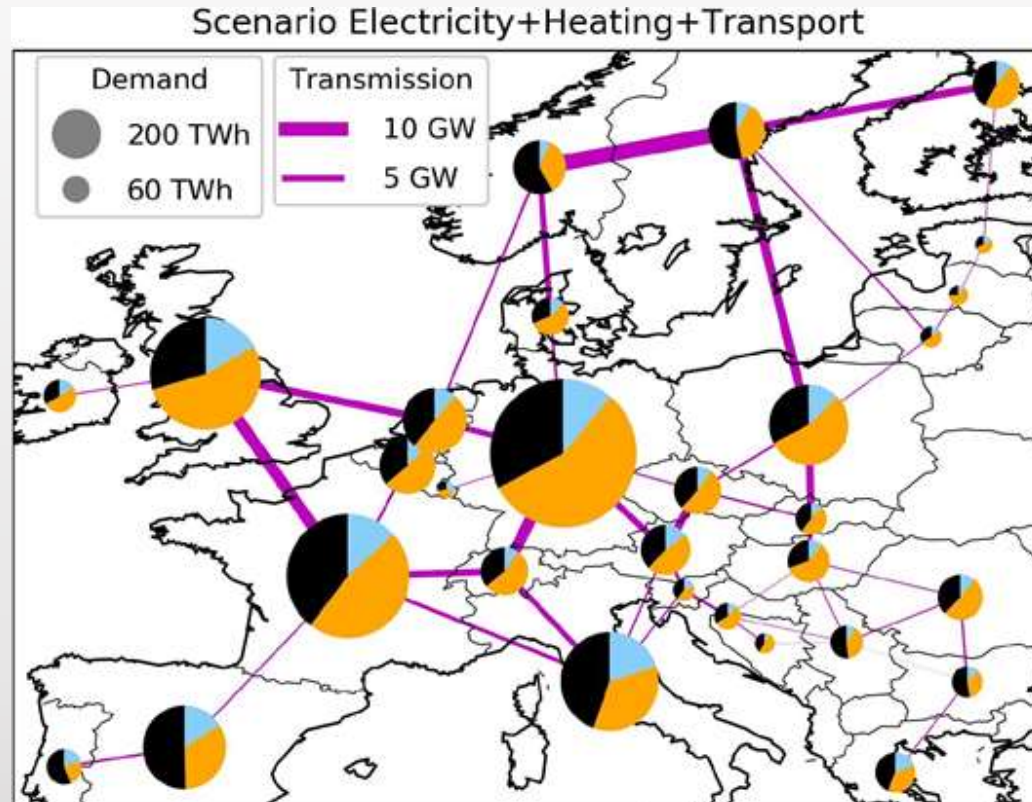
- ▶ It provides reliable baseload power and heat – thermal networks and storage can balance intermittent supplies from other renewable energy sources

Geothermal energy is an indigenous source of energy and contributes to Europe's security of supply.





# Heat in the Energy System



Source: M. Victoria, K. Zhu, et al, Energy Conversion and Management 201 (2019) 111977

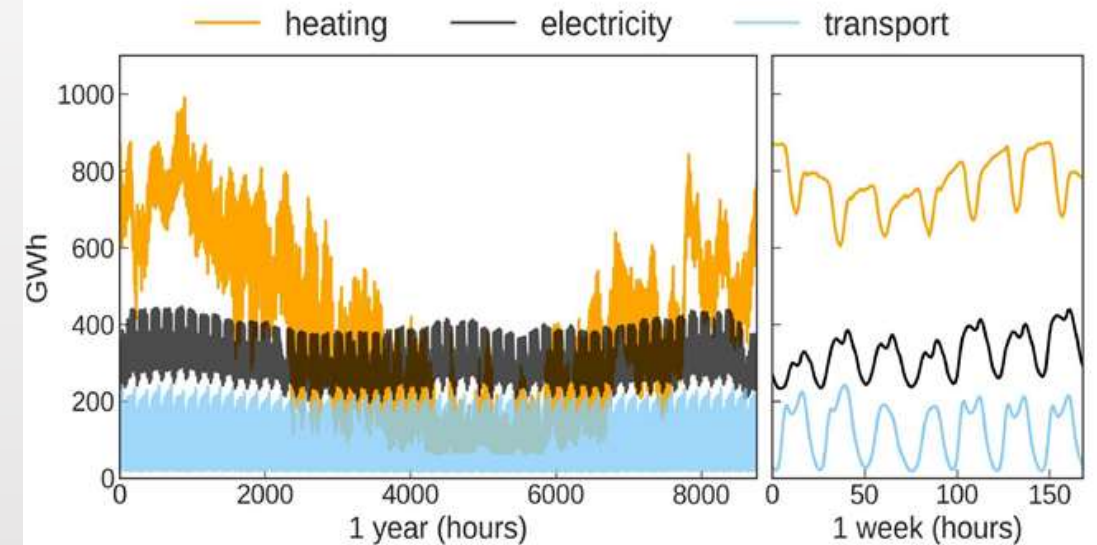


Fig. 2. (top) Spatial plot showing the energy demand per sector and country. (bottom) Europe-aggregated demand for the different sectors. Demands are estimated based on historical data, see Appendix B.

- Heating & Cooling is the biggest share > we need a **Heat Transition**
- **Geothermal + Seasonal Storage** + other RH sources can drive that transition

# GEO THERMICA

Initiated as Geothermal ERA-NET 2012-2016 by Iceland, Netherlands, Germany, Italy & Switzerland

Emphasis on minimizing the fragmentation of the sector, building European know how & contributing to framework and policy

Currently 20 geothermal energy research and innovation programme owners and managers from 16 countries

European Commission (EC) co-funds the 1<sup>st</sup> Call

2<sup>nd</sup> Call in progress with new partners- Norway and USA, but no funding from EC

Influence on a worldwide scale the development of geothermal energy

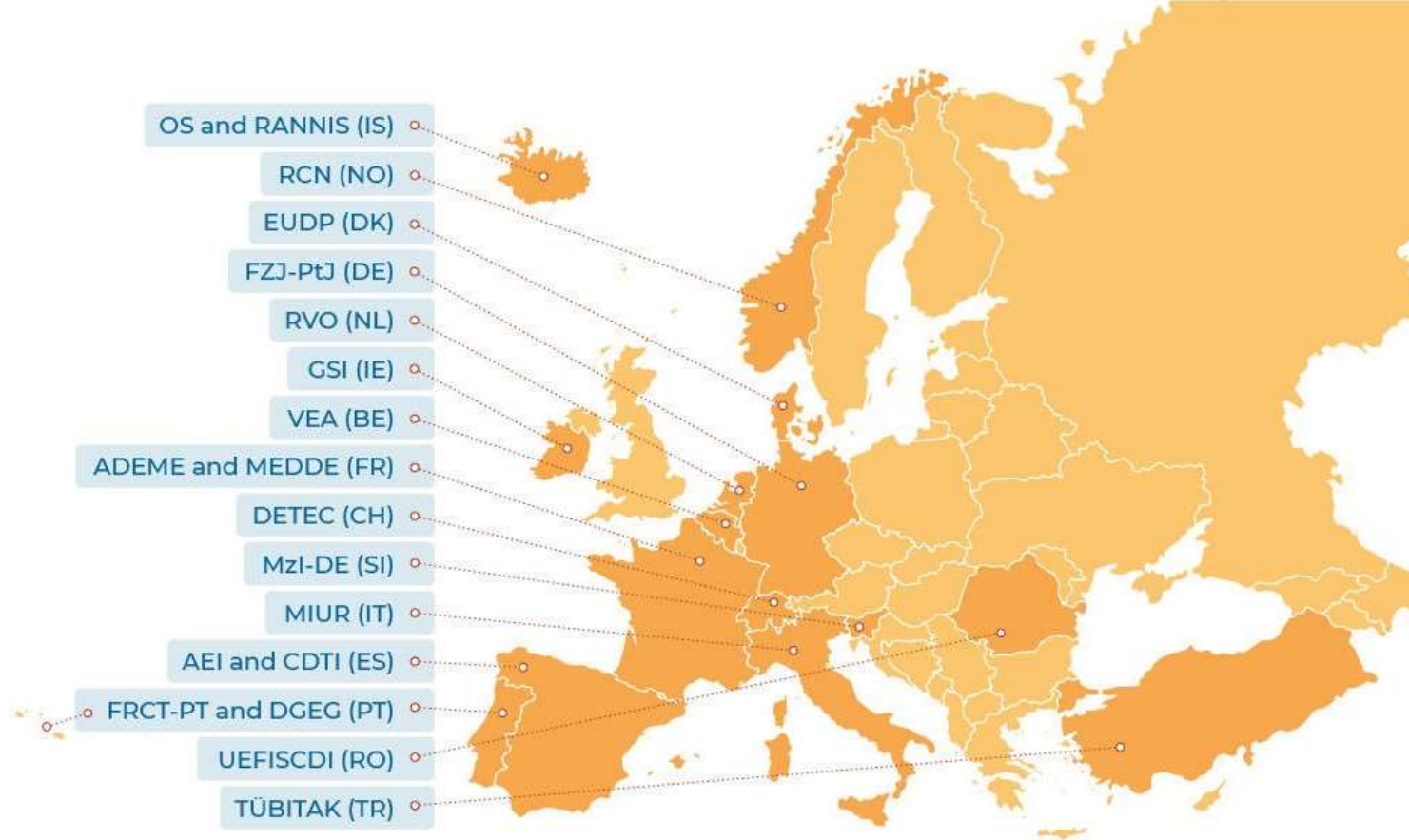


Figure: GEOTHERMICA Consortium



# GEO THERMICA Governance

## Executive Board – decision making body

One representative per member  
Strong emphasis on consensus, trust and fairness  
Voting rights relative to funding contributions

## Coordinator

Orkustofnun Iceland  
Responsible for GEO THERMICA operation  
Contact point to the EC

## GEO THERMICA Office

Network engine and daily operations  
Leads tasks of Call Secretariat, Project Monitoring  
Support and promote the “Knowledge, Strategy & Support” group

## Consortium Agreement

sets obligations among stakeholders in an indirect actions

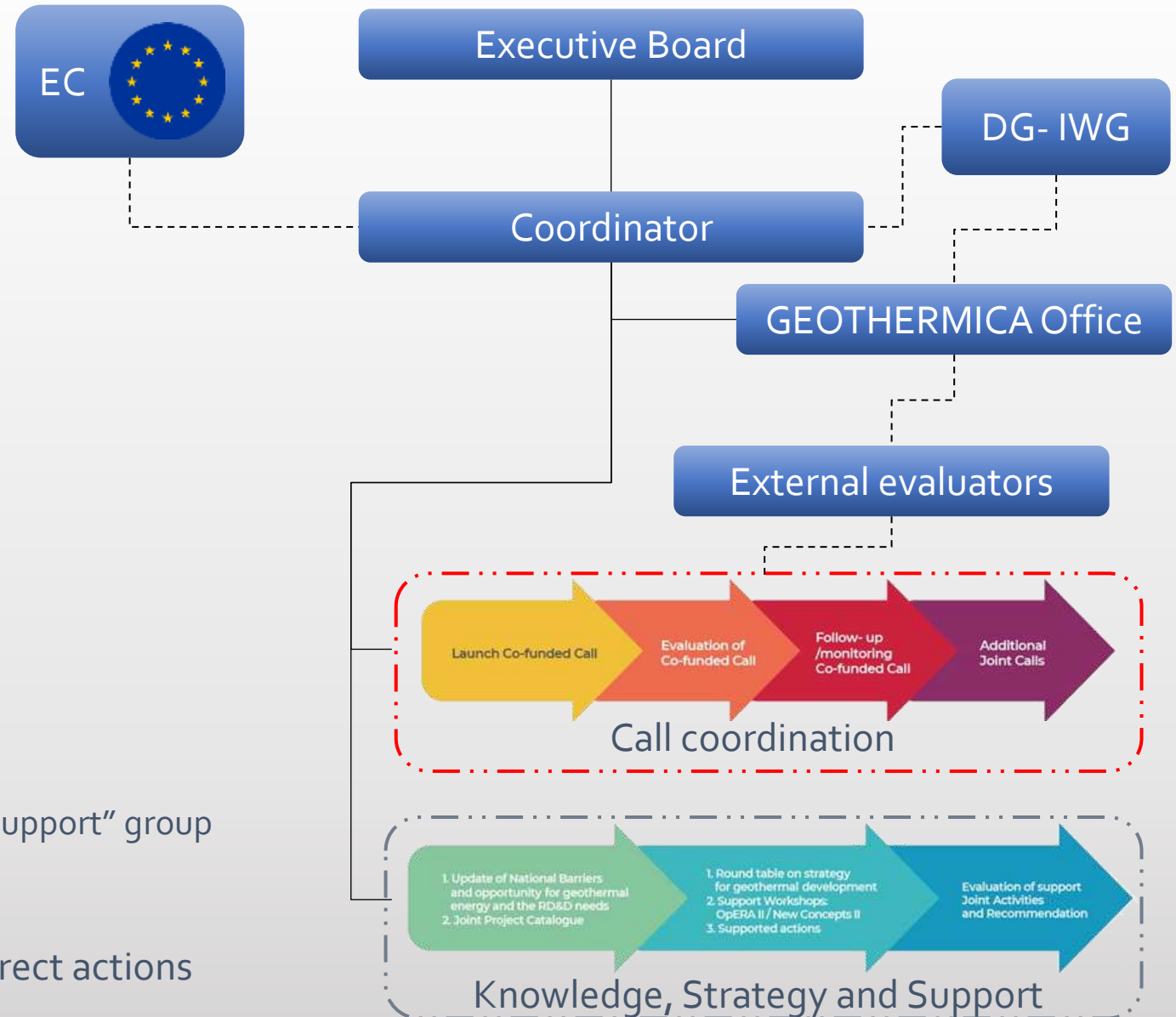


Figure: Structure of GEO THERMICA Governance and work streams of GEO THERMICA.



Figure: GEOthermica scheme towards stronger European geothermal sector

**GEOthermica Members States and Regions play a crucial role**

**Lateral cooperation important... value chain approach**

Advancing on different levels; policy, regulatory, decision making

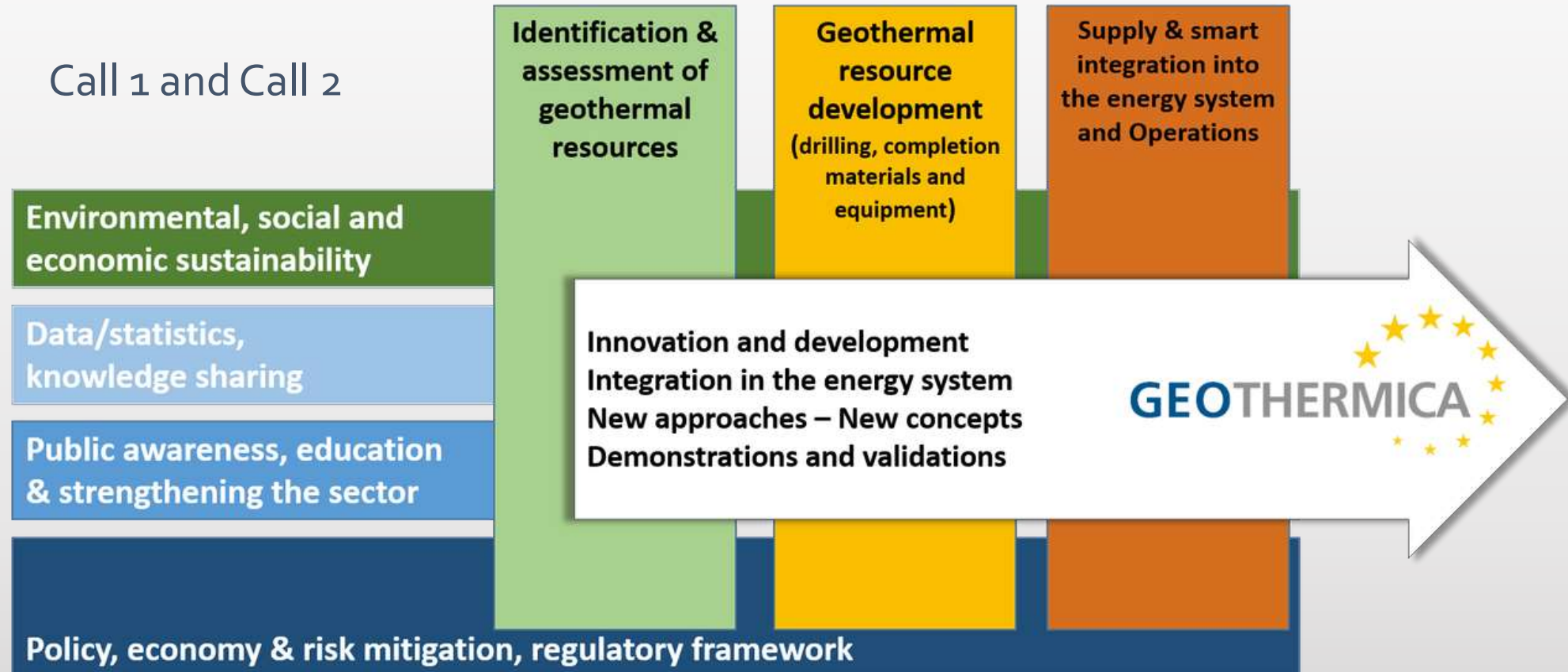
**Deep GEOthermica IWG**

Implementation plan with ambitions of 900 M€ in funding toward **Accelerating geothermal deployment**



# GEO THERMICA Joint Calls for innovative projects

*Accelerating the development of geothermal energy globally*



*Figure: GEO THERMICA focuses on three main technological themes, which cover all stages in the development cycle of secure, sustainable, competitive and affordable geothermal installations*

# GEOthermica Joint Calls for innovative projects

*Accelerating the development of geothermal energy globally*

## Call 1 – co-funded call

- 8 projects funded
- Total project cost: 44M€
- GEOthermica funding: 23M€ (55%)

## Call 2 – no co-funding

- 7 projects funded
- Total project cost: 39M€
- GEOthermica funding: 24M€ (61%)





# Joint Call in preparation

*Accelerating the Heating & Cooling Transition*

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Aiming at projects developing innovative solutions or new concepts for one or more of the following challenges:

- Climate-neutral resources for heating and cooling
- A resource-efficient and sustainable distribution, storage and utilisation of heating and cooling
- Integration of heating and cooling in the local and regional energy systems

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Call coordination: GEOTHERMICA Office

GEOTHERMICA Call Secretariat & JPP SES Call Management



# Projects monitoring

- ❖ GEOTHERMICA monitors the progress of the funded projects
- ❖ Half-yearly 'Traffic light report' to detect deviations – color-coded
- ❖ Mid-term review for projects
- ❖ National Contact Points follows up with national project monitoring

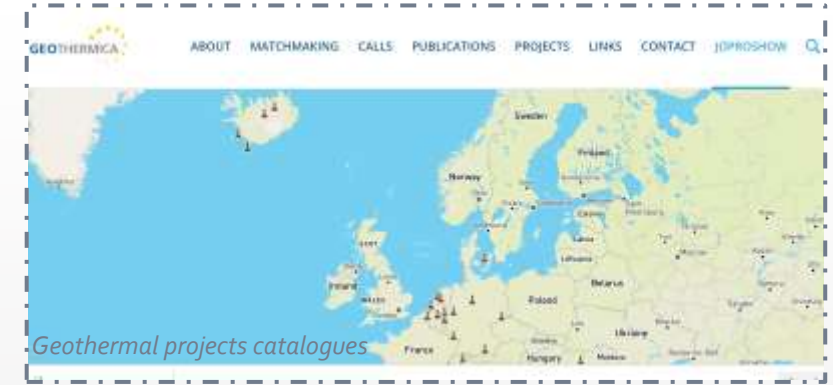


# Additional Activities



## Part I: Activities focused on the GEOTHERMICA Member States & Regions

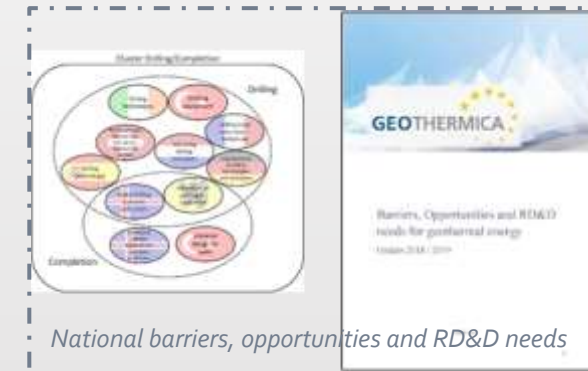
- Working groups on specific topics
  - Geothermal Guarantee Fund
  - GeoCities
  - GeoFood
- Analysis of the **national barriers, opportunities and RD&D needs** for geothermal energy



*GeoCities, GeoFood concepts*

## Part II: Activities for the community

- Dedicated Knowledge & Strategy Workshops:
  - OpERA & OpERA II
  - New Concepts
  - New ways of working - finances
  - GEOTHERMICA Strategic Round Table



*National barriers, opportunities and RD&D needs*



*New Concepts (Innovations in geothermal) 2015*



*OpERA (Operational issues 2015)*



*Round Table (Strategy conception) 2019*



# Additional Activities



## Part III: Strategic Cooperation + Broadening of the Consortium

- IWG DG (SET-Plan)
- ETIP DG
- ETIP RH&C
- IEA Geothermal
- SES Era-NET
- EERA JP Geothermal (Research)
- EGEC (Industry)
- International Geothermal Association (IGA)

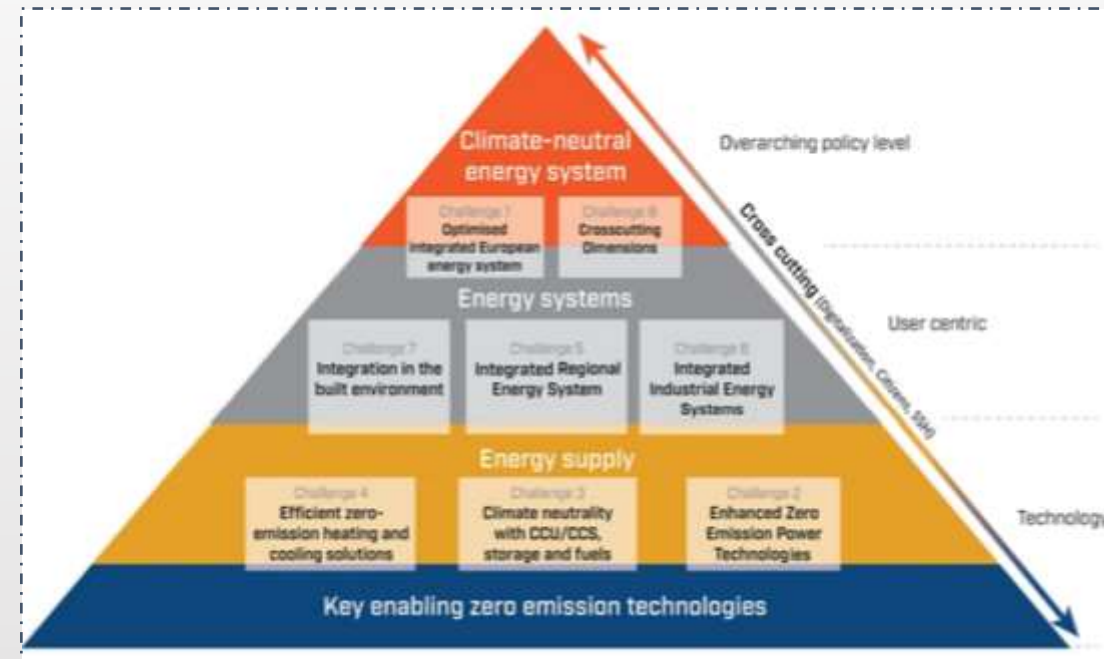


# Additional Activities



## CETP – Clean Energy Transition Partnership

- Joining all collaboration on energy innovation (SET Plan)
- Co-funded partnership under Horizon Europe
- Call launching in spring 2021.
- GEOTHERMICA has contributed to draft proposal and SRIA (Strategic Research and Innovation Agenda)
- Heating, cooling, storage, power – it is all there in the SRIA
- Advocated that CETP should build on already existing structures. Such as GEOTHERMICA



*From enabling technologies towards and integrated energy systems*



# GEOthermica message

- ❖ GEOthermica is propelling the leadership in geothermal and the Heating & Cooling Transition
- ❖ Member state financing, engagement, long term networking, control and mutual understanding and friendship
- ❖ Joint Drive (Dedication) crucial for the success and impact of GEOthermica
- ❖ Advancing on different levels, data, technology, policy, regulatory framework, and markets etc.

Contact GEOthermica Office  
[info@geothermica.eu](mailto:info@geothermica.eu)  
[www.geothermica.eu](http://www.geothermica.eu)

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