GEOTHERMICA



Accelerating the deployment of geothermal energy in Europe

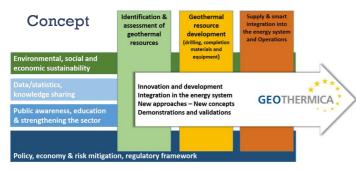
Pre- announcement of a Joint Call for Geothermal Projects

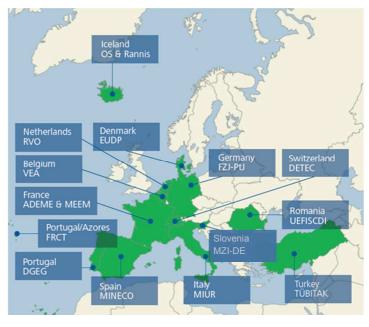
What is GEOTHERMICA?

GEOTHERMICA's objective is to combine the financial resources and know-how of 16 geothermal energy research and innovation programme owners and managers from 13 countries and their regions. Together with financial support from the European Commission GEOTHERMICA will launch joint projects that demonstrate and validate novel concepts of geothermal energy deployment within the energy system, and that identify paths to commercial large-scale implementation.

Europe aims to increase the share of renewable energy for direct heating and cooling, industrial processes, power generation and energy storage. Geothermal energy today is only utilized in choice market sectors and in few regions. It is an under-utilized widely distributed, clean, low carbon footprint and continuously available energy resource. Thus, it is uniquely positioned to substantially contribute to a safe and secure energy supply of Europe's Energy Union.

GEOTHERMICA will call for innovative and demonstration projects development projects that accelerate geothermal energy deployment. Projects will deliver outcomes by 2021. Joint projects will have a strong industry participation. Project proposals will meet both, GEOTHERMICA and national/ regional funding rules. This joint effort by EU Member States and Associated Countries will complement Europe's research and innovation community and industry sector efforts. It will reinforce the sector's contribution to the goals of the European Energy Union and the implementation of the SET Plan.





What will GEOTHERMICA do?

In April 2017, GEOTHERMICA will publish a joint call for projects. The budget for the call is about €32 million and the call will ask for large projects with strong industry participation that accelerate the deployment of geothermal energy in Europe. Also, a part of the budget will be available for technology development projects which can be of smaller size. The call text will reflect these options. Projects may also link up with, add on or build on ongoing pilots or demonstration projects.

Indicative GEOTHERMICA Timeline

February 15, 2017: Preannouncement of the call.

April 10, 2017: Call text to be published.

July 10, 2017: Due date for pre-proposals (stage 1).

September 11, 2017: Invitation to second stage for those pre-proposals that pass stage 1.

November 24, 2017: Due date for full proposals (stage 2).

March 1, 2018: Notification.

May 1, 2018: Signing contracts with new projects.

May 1, 2021: Projects close.





Provisional thematic areas

Technology Readiness Levels 5-9. It is expected that projects address the following technical thematic areas:

geothermal resources,

 Innovative and improved prospecting and exploration techniques and modelling methods to identify and assess geothermal resources

Geothermal resource and reservoir development

New drilling and well completion technologies, reservoir stimulation and innovative systems to control induced seismicity during the reservoir stimulation phase

Supply and smart integration into the energy system

Innovative concepts illustrating geothermal energy as part of the energy system; geothermal reserves for heating, cooling and storage; innovative power cycles

Operations

 Novel approaches to improve well injectivity, as well as reliability and availability of injection operations; novel equipment and materials for lowering and optimizing operating expenses.

Projects may additionally address cross-cutting themes related to health, safety and environment, as well as social acceptance and policy-relevant aspects.

Indicative distribution of budget

GEOTHERMICA will ask for projects typically to advance The total budget of GEOTHERMICA is about €32 million, of which national and regional funding organisations contribute about €24 million and the EC about € 8 million - all figures below are only indicative.

| _ | • | |
|-----------------------|---|------------------------------|
| Participating country | Funding Organisation (Program Owner / Program Manager) | Approx. budget (€ mln) |
| Belgium | Vlaamse Gewest / Vlaams Energieagentschap / VEA | 0.5 |
| Denmark | Energistyrelsen / EUDP | 1.5 |
| France | Agence de l'Environnement et de la Maîtrise de l'Energie / ADEME | 4.0 |
| Germany | Forschungszentrum Jülich GmbH / FZJ-PtJ | 4.0 |
| Iceland | Rannsoknamidstod Islands / Rannis | 1.0 |
| Italy | Ministero dell'Istruzione, dell'Università e della Ricerca / MIUR | 0.5 |
| Netherlands | Ministerie van Economische Zaken/ Rijksdienst voor Ondernemend Nederland / RVO | 4.0 |
| Portugal | Foundation for Science and Technology (FCT-PT) / Direção Geral de Energia e Geologia / DGEG | 0.1 |
| Portugal/ Azores | Fundo Regional para a Ciência e Tecnologia / FRCT | 0.1 |
| Romania | Unitatea Executiva pentru Finantarea Invatamantului Superior, a Cercetarii, Dezvoltarii si Inovarii / UEFISCDI | 0.5 |
| Slovenia | Ministrstvo za infrastrukturo, Direktorat za energijo / MzI-DE | 0.7 |
| Spain | Ministerio de Economia, Industria y Competitivdad / MINECO | 0.3 |
| Switzerland | Federal Department for Environment, Transport, Energy and Communications DETEC (not eligible for EC top-up) | 6.0 |
| Turkey | Turkiye Bilimsel ve Teknolojik Arastirma Kurumu / TÜBITAK | 1.0 |
| Summary | | 24.2 |

Questions? Contact your National or Regional Contact Points

| Country / Region | Organisation | Name | E-mail | Phone |
|--------------------|----------------|-------------------------|--|-------------------|
| Belgium / Flanders | VEA | Caroline Vermeulen | caroline.vermeulen@vea.be | +32 2 553 46 26 |
| Denmark | EUDP | Povl Frich | pfr@ens.dk | +45 2 565 0246 |
| France | MEEM | Paul Bonnetblanc | paul.bonnetblanc@developpement-durable.gouv.fr | +33 1 40 81 85 96 |
| Germany | FZJ-PtJ | Stephan Schreiber | k.schreiber@fz-juelich.de | +49 2461 614 743 |
| Iceland | Rannis / GEORG | Sigurður Björnsson | Sigurdur@Rannis.is | +354 515 5800 |
| | | Hjlati Páll Ingólfsson | hpi@georg.cluster.is | +354 569 6000 |
| Italy | MIUR | Chiara Gliozzi | chiara.gliozzi@miur.it | +39 06 5849 7288 |
| | | Aldo Covello | Aldo.covello@miur.it | +39 06 5849 6465 |
| The Netherlands | RVO | Paul Ramsak | paul.ramsak@rvo.nl | +31 88 602 2275 |
| | | Gerdi Breembroek | gerdi.breembroek@rvo.nl | +31 6 5256 4480 |
| Portugal | DGEG | Isabel Cabrita | deir@dgeg.pt | +351 911 909 257 |
| | | Paulo Partidario | paulo.partidario@dgeg.pt | +351 963 002 336 |
| Portugal / Azores | FRCT | Fàbio AL. Vieira | fabio.al.vieira@azores.gov.pt | +351 969709668 |
| Romania | UEFISCDI | Cristina Cotet | cristina.cotet@uefiscdi.ro | +40 21 302 3876 |
| Slovenia | MzI-DE | Martina Štrubelj | Martina. Strubelj@gov.si | +386 1 478 8503 |
| Spain | MINECO | Severino Falcon Morales | severino.falcon@mineco.es | +34 91 603 7953 |
| Switzerland | DETEC | Gunter Siddiqi | gunter.siddiqi@bfe.admin.ch | +41 58 462 5324 |
| Turkey | Tübitak | Kaan Karaöz | kaan.karaoz@tubitak.gov.tr | +90 312 298 1816 |

Requirements for proposals

Project proposals have to be from European consortia with several partners from several of the participating countries. Details will be available when the call text is published. Participants have to meet the specifications of the GEOTHERMICA call in addition to the funding rules and regulations of their home countries or regions.

GEOTHERMICA Office- Orkustofnun Grensásvegur 9, 108 Reykjavik, Iceland



