



Analysis report
with proposals on future
programme collaboration
and stakeholder collaboration

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D7.4

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Abstract

This report describes the learning from the Joint Activities in the frame of Geothermal ERA-NET and the strategies to develop further funding procedures. The main focus is on the activities for establishing a web-based knowledge transfer system related to operational issues of geothermal installations in Europe, the so-called OpERA-pedia, and those related to the implementation of the European Geothermal Information Platform, EGIP, for collecting and retrieving technical and non-technical information related to the geothermal sector in Europe. The report mentions the opportunities for future collaboration offered by the new ERA-NET Co-fund Action, GEOTHERMICA, which expands the Geothermal ERA-NET consortium and strengthens the participation by guaranteeing coordinated funds for transnational Joint Calls dedicated to demonstration projects. Eventually, an analysis of the stakeholder networks established in the frame of the Geothermal ERA-NET is provided.

Executive summary

Following the overall aim of the Geothermal ERA-NET to accelerate deployment of geothermal energy by organizing and supporting the transnational activities of research and innovation, the consortium has been working with the aim of opening up national programs, pooling resources, improving cross border cooperation, achieving critical mass, avoiding duplication of funds and efforts. After analysing the running and funded national programmes covering geothermal activities, the partners could not meet the condition for funding transnational activities by means of Joint Calls, and focused mostly on Joint Actions on a collaborative base. These coordinated activities established the nucleus of a collaboration that is projected beyond the limit of the actual Geothermal ERA-NET. A real occasion for future collaboration is represented by GEOTHERMICA, the geothermal ERA-NET Co-fund Action recently approved by the European Commission, which expands the Geothermal ERA-NET Consortium and will build on the efforts and successes of the Geothermal ERA-NET by funding Joint Calls and further implementing joint activities, starting with those already launched in the Geothermal ERA-NET.

Following the positive feedback from the geothermal community, the Geothermal ERA-NET consortium decided to continue the work of OpERA – Operational issues of geothermal installations in Europe, and establishing “OpERA-pedia”, a web-based knowledge transfer system coupled to the website of Geothermal ERA-NET, which will in the future be the basis for the GEOTHERMICA website. National contracts/subsidies from five countries (Germany, the Netherlands, Iceland, France and Switzerland) will support experts for shaping and producing a document regarding operational issues, including examples of issues and solutions.

Geothermal ERA-NET launched the concept of EGIP and provided the pillars for its implementation. With little money and effort provided by participants, EGIP implementation reached the point of a pilot platform, used as a showcase for establishing the stakeholder's interest in the matter, which proved to be high. A vision for EGIP intended architecture and implementation was described in the Work Package 3 documents and the report finalized by the EGIP Group of Experts, including some open issues, recommendations and guidelines for data harmonization of some, high priority themes. These documents are a main reference for coordinated efforts to be funded at national level (data preparation, harmonization and publication), and requires an optimal collaboration among national agencies, research activities represented by EERA-JPGE (European Energy Research Alliance – Joint programme Geothermal Energy), and the potential collaboration established by the GeoERA-NET, a Co-fund Action related to geodata systems. The implementation of EGIP platform as a web-based tool can be organised in the frame of the Geothermal ETIP (Geothermal Technological and Innovation Platform) and in collaboration with the industrial sector represented by the Geothermal ETIP and EGEC (European Geothermal Energy Council).

The main recommendation is therefore to proceed and reinforce the collaboration already established among main stakeholders, and in particular among the different geothermal networks (EERA-JPGE, EGEC, Geothermal ETIP), maintaining the central role of national authorities with respect to industry and research communities.

1 Introduction

A key activity within Work Package 7 is to support transnational activities, to provide a commonly agreed framework for joint funding scheme and recommendation for a structured collaboration beyond the duration of the project. After analysing the running and funded national programmes covering geothermal activities, the Geothermal ERA-NET partners could not meet the condition for funding transnational activities by means of Joint Calls, and focused mostly on Joint Actions on a collaborative base. These coordinated activities, which were described in the previous reports from Work Package 7, established the nucleus of a collaboration that is projected beyond the limit of the actual Geothermal ERA-NET.

In this report we analyse what is the status of present collaboration and propose procedures for coordinating European policy in geothermal research in collaboration with stakeholders at regional, national and European level.

2 Cooperation result: the GEOTHERMICA proposal

The EC Call “Joint Actions towards the demonstration and validation of innovative energy solutions - LCE-34-2016” has been a real occasion to put in force the cooperation established in the Geothermal ERA-NET Consortium and enlarging it to other European geothermal countries. A new ERA-NET Co-fund Action, named GEOTHERMICA and recently approved for funding, focus on improving business cases for geothermal energy, and through establishing a long-lasting strategic collaboration of national geothermal research and innovation program owners and managers. GEOTHERMICA aims at direct use and power generation from geothermal resources in an optimal way, which includes integrated and combined systems (e.g. heat pumps, other forms of renewable energy, using the underground as a heating and cooling energy storage site).

Following the experience and the analyses of R&D gaps, training needs and Stakeholder gained in the Geothermal ERA-NET, GEOTHERMICA has set up a list of priorities and measurable objectives.

GEOTHERMICA bridges the gap between research and the market by supporting innovative solutions to obstacles in the development of geothermal energy by organizing and pooling national funds and human resources as well as national research infrastructures, to accelerate research and innovation on utilization of geothermal energy. The funding pool will be used to implement at least two joint calls for proposals resulting in grants to third parties that focus on improving business cases, reducing time to market and developing research alliances that bring together the best of Europe’s experts and entrepreneurs in the field. The first joint call will be co-funded by the European Commission. The prospect of substantial joint calls will bring forward unique opportunities in terms of scale and scope of transnational projects. The joint calls will be set up in a way, which ensures a significant contribution from the industry to the selected projects, commensurate with the nature of demonstration projects. Hence, the joint calls are expected to realise transnational projects of the highest quality, productivity and impact.

The GEOTHERMICA joint calls will focus on demonstration projects, to bring innovative geothermal energy solutions closer to commercial deployment, and will encourage industrial participation to leverage public sector investment. Besides the co-funded joint calls, GEOTHERMICA will build on the efforts and successes of the Geothermal ERA-NET to coordinate the fragmented national geothermal energy research and innovation agendas and will further implement joint activities, starting with those already launched in the Geothermal ERA-NET such as OpERA-pedia.

3 OpERA-pedia

Due to the positive feedback from the geothermal community, the Geothermal ERA-NET consortium decided to continue the work of OpERA – Operational issues of geothermal installations in Europe.

The aim of the collaboration is to contribute to optimal availability of the geothermal energy installations by avoiding downtime through operational issues. From the OpERA workshop, the OpERA leadership concluded that the best first step is to enhance and facilitate knowledge sharing. Five countries from the Geothermal ERA-NET group decided to launch this activity by contributing to this task by establishing the “OpERA-pedia”, a web-based knowledge transfer system, and to create a community that fuels this system at the same time.

The work of creating the OpERA-pedia covers several aspects. It was a challenge to design a way in which all countries could contribute, but keeping the knowledge system practical and straightforward at the same time.

The work is split in three major parts:

1. Definition of OpERA-pedia framework and its first high-level content, to allow organising the national contributions and provide a framework for them.
2. National contracts/subsidies, bringing together national experience, handled nationally by the national ministries/governmental agencies. The national contributions should provide the heart of the OpERA-pedia and also include examples of issues and solutions that fit and illustrate the framework structure.
3. OpERA-pedia web publication. This task supports the publication of all produced material in the web, including maintenance.

Part 1, developing the framework and the first content, has been the work of the first half of 2016. The consortium has solicited the support of an expert from the oil and gas industry to shape the OpERA-pedia to this extended knowledge sharing effort.

Part 2, the national contributions to OpERA-pedia, is the heart of the work. Here, national authorities provide national money to national experts, either through a subsidy or through an assignment – as fits their national requirements best. In the first phase, Germany, the Netherlands, Iceland, France and Switzerland will contribute, with prospective sums of € 20.000 - € 50.000 per country, summing up to between € 100.000-€ 200.000. In September-October 2016, the chosen experts will be contracted in each individual country. Since the experts are expected to deliver early 2017, the collaboration will extend beyond the duration of the Geothermal ERA-NET.

Finally, concerning part 3, the knowledge transfer system will be coupled to the website of Geothermal ERA-NET, which will in the future be the basis for the GEOTHERMICA website. The website maintenance is handled by the coordinator of the Geothermal ERA-NET.

The OpERA-pedia will go online in the first half of 2017, coupled to the GEOTHERMICA website. The work is a showcase of how national funding organisations, with little effort and money, can make a difference for the implementation of renewable energy sources.

4 European Geothermal Information Platform EGIP

A comprehensive and solid background has been prepared for EGIP during the Geothermal ERA-NET project in the frame of WP3 activities, and various documents described the major steps achieved in the

course of the Geothermal ERA-NET project. The state-of-the-art and needs in regarding geothermal data and existing tools to manage them were described in the first report (D3.1, released on 2013), followed by a feasibility study report (D3.2, 2013). Then, a pilot platform (2014) was set up to demonstrate the EGIP concept feasibility and the EGIP approach was published in a scientific journal (Trumpy et al., 2015). Both EGIP concept and the pilot were tested and evaluated by stakeholders, who showed high interest in the matter; the results of this survey along with propositions for enhancement were described in the EGIP Joint Action report (2016). A vision for EGIP intended architecture and implementation was described in the document prepared by the EGIP Group of Experts (EGIP EG report, 2016), including some open issues and recommendations and, in the annex, a detailed list of relevant geothermal data themes linked to related INSPIRE guidelines and previous Geothermal ERA-NET reports.

During the WP3 activity and the following EGIP Joint Activity organized in WP4 it appeared that large part of data preparation, harmonization and publication is based on national efforts and requires centralized coordination more than transnational funding. The documents produced in the frame of Geothermal ERA-NET, and in particular the EGIP EG report (2016), are meant to be a main reference for the coordinated efforts at national level.

The implementation of the platform in the form of a web-based tool remains to be organized at central level.

Future occasions for developing EGIP will be found, probably, in more than one framework. EGIP implementation is not foreseen to be part of Joint Calls in GEOTHERMICA, which will instead focus mainly on demonstration projects, but this topic remains among the Joint Activities to be developed. The preparation of the geothermal geodata information system is expected to be carried on, at least partially, in the frame of GeoERA, an ERA-NET Co-Fund Action dedicated to geological data including georesources and energy themes. Harmonization and integration of geothermal data is also a research theme of the European Energy Research Alliance – Joint programme Geothermal Energy (EERA-JPGE). A strategic place for preparing the EGIP platform implementation is the Geothermal Technological and Innovation Platform (Geothermal ETIP), an open stakeholder group recognized by European Commission on July 2016, which includes representatives from industry, academia, research centres, and sectorial associations, and covers the entire deep geothermal energy exploration, production and utilization value chain. Coordination among the national agencies in GEOTHERMICA and other geothermal networks is, therefore, highly recommended for EGIP.

5 Stakeholder collaboration and conclusions

Following the overall aim of the Geothermal ERA-NET to accelerate deployment of geothermal energy by organizing and supporting the transnational activities of research and innovation, the consortium faced the challenge to establish and enforce a network of stakeholders. The related activity contributed to the effort of building the “three pillars” (research, industry, and the public sector) for successful progress of geothermal energy in Europe. An active connection to stakeholders was established in the course of the Joint Activities, mainly during the organization of common workshops and surveys. The consortium established also links with two main geothermal networks: 1) EERA-JPGE After a common meeting held in Trieste on September 2014, a representative of Geothermal ERA-NET participated in all the EERA-JPGE annual meetings; 2) the European Geothermal Energy Council (EGEC), which was invited to participate to the WP3 meeting in Reykjavik on March 2013. The recently established Geothermal Energy Technology and Innovation Platform (Geothermal ETIP), which has its Secretariat in EGEC, foresee a representative of the Geothermal ERA-NET Consortium (and of GEOTHERMICA in the future) in its board.

The Geothermal ERA-NET has established a long-lasting strategic collaboration, bringing together owners of European national geothermal research and innovation programmes, and bridging the public sector to Europe’s industry and research and innovation communities. The former are represented by actors such as the European Geothermal Energy Council EGEC, the European Technology and Innovation Platforms (ETIP) on Deep Geothermal and Renewable Heating and Cooling, while the latter are organized in the European Energy Research Area’s Joint Program on Geothermal Energy (EERA-JPGE) and other actors. A new era of geothermal coordination has been launched in the recent years, also thanks to the Geothermal ERA-NET projects, as testified by the coordinated effort for producing the geothermal Declaration of Intent for the European SET-PLAN recently approved by the European Commission.

The fragmented scenario characterizing the sector when the Geothermal ERA-NET started its activity has been composed in a more defined picture, paving the road to the robust and coordinated support established by GEOTHERMICA, where the Joint Activities launched in the frame of Geothermal ERA-NET will find the right condition for development and new topics, new innovative ideas will be proposed.

With GEOTHERMICA the collaboration within the public sector has been expanded, and the participants will be able to cement and strengthen the central role of national authorities with respect to industry and research communities, therefore strengthening the European geothermal sector as a whole.

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