

Note from the Coordinator

Dear EERA Geothermal members,

A promising restart of our joint activities lies behind us, including a social retreat in Italy and our first in/person steering committee meeting in more than two years in Berlin. And it looks like a promising period of opportunities to work together lies ahead of us. Good reasons to keep this new momentum and intensify our cooperative efforts even more.

To position our joint programme well for new tasks ahead we have two co-chairs now to make coordination even more efficient and to keep on top of our multiple involvements in the European geothermal scene. We also had a general overhaul of our description of work: We restructured some of our tasks, added new ones and summarized achievements of projects finished. We jointly decided to reduce the number of sub-programmes to 7 but also intend to strengthen our ties to other EERA joint programmes. In particular, we are asked, as a geothermal research community to make stronger efforts in public engagement. Inform the public, defend and promote our ideas, show our colleagues in different fields how important geothermal energy can be in the renewable energy mix of the future and help increase the visibility of geothermal solutions. Our ties to the *Joint Programme on Economic, Environmental and Social Impacts of the Energy Transition* (E3S) are strong but need further intensification to professionalize our approaches, also in potential project proposals. Similarly, our contribution to the overall energy system integration can be combined with the approaches proposed by the *Energy Systems Integration Programme* (JP ESI).

The new year is also posed see the first partnerships taking advantage of our mobility scheme, increasing bilateral interaction and profiting from the benefits of available infrastructure and know-how in our network.

We will also resume our sponsorship of the European Geothermal Workshop (EGW), the scientific event we have supported and promoted in the past such that it evolved from a bilateral French-German cooperation between Karlsruhe and Strasbourg to one we consider a real EERA JPGE event. As an expression of this development the EGW will be hosted in the Netherlands for the first time this year.

And we are happy to continue our support of the European Geothermal PhD days, this year hosted by the students at University of Glasgow, sending a strong signal that UK participation is still very much included and encouraged in our European network activities.

There are many reasons to look forward to this new year, and we hope to see all of you healthy and eager to interact at our meetings.

On behalf of the entire Joint Programme Coordination team



David Bruhn

*Joint Programme
Geothermal Coordinator*

Activities 2022

JP Geothermal retreat Elba

After a long time of online-only meetings, we felt the necessity to bring the EERA-JP Geothermal community together to strengthen our efforts and promote exchange of ideas, initiatives and projects.

A geothermal field trip was put forward as the ideal environment to renew our friendly and sociable contacts. The JP members chose the location and we spent some nice days in Tuscany in September 2022, visiting the Larderello geothermal system and its analogue fossil, exhumed, companion on the Island of Elba.



Steering committee meeting Berlin

The JP Geothermal Steering Committee meeting was held on the 21st of October 2022 in Berlin. We had a nice dinner the evening before in Berlin and started the next day with a full agenda and a lot of things to discuss and approve.

Description of Work

In a separate session in the morning we discussed the changes to our DoW and made the final adjustments. The new DoW was approved by the SC and the last modifications have been implemented. The final version will be send out shortly.

Governance Structure

Changes were made in the JP Governance structure to include two Co-Chairs and remove the position of the Scientific Secretary. These changes have been approved by the SC. Adele Manzella and Virginie Harcouët-Menou are the two Co-Chairs of the JP. They have been introduced in the previous newsletter already.

Subprogramme Coordinators

The following Subprogramme coordinators were elected during the SC meeting:

SP1 Assessment of Geothermal Resources	Eugenio Trumpy (CNR)
SP2 Exploration of Geothermal Reservoirs	Jan Diedrik van Wees (TNO)
SP3 Engineering of Geothermal wells and Resources:	Martin Saar (ETH)
SP4 Energy Conversion Systems	Paola Bombarda (POLIMI)
SP5 Operation of Geothermal Systems	Thomas Kohl (KIT)
SP6 Sustainability, Environment and Regulatory Framework	Francesco Rizzi (SSSUP)
SP 7 Computing and Data Management	Florian Wellmann (Fraunhofer IEG)

So far the following deputies are appointed by the SP coordinators:

SP3 Engineering of Geothermal wells and Resources:	Maren Brehme (ETH)
SP4 Energy Conversion Systems	Florian Heberle (UBT)
SP5 Operation of Geothermal Systems	Bastian Rudolph (KIT)
SP6 Sustainability, Environment and Regulatory Framework	Fabio Iannone (SSSUP)
SP 7 Computing and Data Management	Romain Chassagne (BRGM)

New Participant in the JP Geothermal

The JP Geothermal approved the participation of one additional institution during the Steering Committee meeting in 2022.

IFP Energies nouvelles

IFP Energies nouvelles (IFPEN) is a major research and training player in the fields of energy, transport and the environment. From scientific concepts of fundamental research, up to technological solutions and services for the industry, innovation is central to its activities, organized around four strategic topics: climate, environment and circular economy – renewable energies – sustainable mobility – responsible oil and gas.

As part of the public-interest mission with which it has been tasked by the public authorities, IFPEN focuses its efforts on bringing solutions to the challenges facing society and industry in terms of energy and the climate, to support the ecological transition. An integral part of IFPEN, IFP School, its graduate engineering school, prepares future generations to take up these challenges.

Since 2018, IFPEN has been listening to geothermal professionals and putting its tools and skills at their service to provide them with operational solutions. These issues, whether at an exploration or exploitation stage, require an understanding of the entire geothermal loop, from the surface to the subsurface, via the wells and including the properties of the fluids produced.

The R&I areas covered are:

- Optimisation of the whole geothermal loop (for full NCG reinjection, heat recovery from O&G wells...);
- The evolution of reservoir properties during production and the impact of this evolution on the operation (loss of injectivity in silici-clastic reservoirs, scaling and fouling, corrosion...);
- Basin-scale exploration for the evaluation of the potential for heat and lithium, as well as reservoir simulation for the evaluation of the evolution of production with time.

IFPEN participates to the European research activities through the H2020 GECO, the Geothermica DEEPEN and the Horizon Europe HocLoop.

JP Geothermal Mobility Scheme

The JP Geothermal mobility scheme was implemented last year and we want to encourage our members to make use of this opportunity. This scheme allows young and/or established researchers to stay and work at one of our partners' institutions for up to 12 weeks. Details on the application procedure and the funding can be found on our [website](#).

Research for society: the future of Geothermal Energy

A call for contribution to a book on the future of geothermal energy has been sent out by Fabio Iannone and Francesco Rizzi (SSSUP). Recently Springer Nature has accepted the book proposal. The aim is to present the most relevant and promising trends in Geothermal Energy research and to provide policy managers and investors a clear and updated snapshot of how Geothermal Energy can contribute to our society's economic, environmental, and social sustainability. If you are interested in contributing and haven't indicated that yet, please contact Fabio or Francesco (Fabio.Iannone@santannapisa.it; francesco.rizzi@santannapisa.it).

14th European Geothermal PhD Days

The 14th annual European Geothermal PhD Days ([EGPD](#)) will take place in Glasgow from the 4th to the 6th of April, 2023. This is the first time that the EGPD is hosted in the UK. This year, the event is organised by a team from the University of Glasgow, the University of Strathclyde and the University of Edinburgh.

10th European Geothermal Workshop - EGW 2023

The European Geothermal Workshop will be held in Utrecht on the Wednesday 8 and Thursday 9 November 2023. The EGW has been supported by our Joint Programme for some time now and turned into our central scientific event and platform to present our research.

Funding opportunities for R&I in geothermal

During the ETIP Deep geothermal annual meeting 20 R&I funding opportunities for geothermal were presented. The information can be found via this [link](#).

New projects JP Geothermal

Over the last couple of several new projects started with members of JP Geothermal. These are:

- **HOCLOOP** (Funding: Horizon Europe, Duration: October 2022- Mar 2026, EERA JPGE partners: BERA, **IFE**, IFPEN, NORCE, TUDA, UNIBA, UNIFI): The EU-funded HOCLOOP project will use a horizontal closed-loop solution for the extraction of heat from deep or shallow formation rocks. HOCLOOP's solution will facilitate the exploitation of geothermal energy sources in new regions.
- **GEOTHERM FORA** (Funding: Horizon Europe, Duration: September 2022- August 2025, EERA JPGE partners: CNR, GFZ, TNO). The project aims at facilitating Research and Innovation (R&I) activities in geothermal systems by supporting the work of two Geothermal fora, already established: The European Technology and Innovation Platform on Deep Geothermal (ETIP-DG) and the Deep Geothermal Implementation Working Group (DG-IWG).
- **DeepU** (Funding: Horizon Europe EIC Pathfinder, Duration: March 2022- February 2025, EERA JPGE partners: IEG, CNR). The project aims at developing fast penetrating drilling technologies, by a coupled action of laser and cryogenic gas, to contribute to the uptake of deep closed loop heat exchangers. The resulting glazed layer on the borehole walls from the drilling technology acts as a casing so that a deep heat exchanger is ready immediately after drilling. Laboratory tests will prototype the concept.
- **PUSH-IT** (Funding: Horizon Europe, Duration: January 2023- Dec 2026< EERA JPGE partners: TU Delft (coordinator), BGS, BRGM, GFZ, IEG, TUDA, UniGE, UU, VITO): The PUSH-IT consortium will develop, deploy, and test heat storage technologies for different heat sources, technologies, geological conditions, distribution systems, stakeholder populations, and market and legal conditions. Three technologies will be demonstrated in six different sites across Europe:
 - ATES in Delft (NL) and Berlin (D)
 - BTES in Darmstadt (D) and Litoměřice (Czech Republic)
 - MTES in Bochum (D) and United Downs (Cornwall, UK)

With the results of these operational projects, the consortium aims to develop generic solutions and practices that are relevant across Europe.

If we missed a project, please send an email to s.j.laumann@tudelft.nl to be added on the JP website (<https://www.eera-geothermal.eu/>).

EERA JP Geothermal steering committee meeting 2023

The 2023 SC meeting will be combined with the EGW in November in Utrecht. The suggested date is Tuesday 7th November.

Upcoming events

- 4 – 5 April 2023 – European Geothermal PhD Days
- 7 November 2023 – JP Geothermal Steering Committee Meeting
- 8-10 November 2023 - European Geothermal Workshop, Utrecht