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1. Objectives of ETIP on Geothermal

European Technology and Innovation Platforms (ETIPs) have been recognised by the EC as a tool to strengthen cooperation with Stakeholders under the Strategic Energy Technology Plan (SET-Plan), as part of the R&I programme.

The geothermal sector has therefore created in 2017 an ETIP on deep geothermal and then transformed it in 2023 into an ETIP on geothermal technologies.

The Vision (published in 2018 and updated in 2024) of the European Technology and Innovation Platform on Geothermal (ETIP-G) entails using geothermal energy and resources to cover:

1. A significant part of the demand for residential, tertiary and industrial domestic heat and cold (h&c).
2. Much of the demand for electrical power in Europe
3. Underground thermal storage for the energy system integration
4. Minerals such as lithium, made in Europe sustainably.

The ETIP-G is an open stakeholder group, including representatives from industry, academia, research centres, and sectorial associations. It covers the entire geothermal energy sector: exploration for resource assessment, drilling and subsurface engineering for resource development, utilisation and management of the resource to generate electricity and h&c, operation and maintenance for a sustainable management of the resource and decommissioning after the end of life.

We are forecasting a very ambitious development of geothermal energy utilisation in Europe, both for electricity and heat. However, to make our Vision a solid reality in the near future, we have to go beyond the business-as-usual approach and to promote breakthroughs in all the technological and cross-cutting innovation themes, while pursuing the EU long-term goal of reducing costs and increase performance of geothermal technologies and installations.

A new generation of technologies and knowledge management for a full and responsible deployment of geothermal potential is foreseen, and challenges in the technological and cross-cutting innovation themes will be completed.

The ETIP-G has developed a coherent and updated **Vision** for geothermal for power and/or heat in 2024, as well as a **Strategic Research and Innovation Agenda in 2023** and annual **Technology Roadmaps**. It also assesses the overall finance available to carry out this work, from public and private sources.



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Research and Innovation (R&I) activities will cover the development of all geothermal technologies, according to their **Technology Readiness level (TRL)** ranging from 1 (Basic principles observed) to 9 (Actual system proven in operational environment).

Technology readiness levels:

| | |
|--------|---|
| TRL 0: | Idea. Unproven concept, no testing has been performed. |
| TRL 1: | Basic research. Principles postulated and observed but no experimental proof available. |
| TRL 2: | Technology formulation. Concept and application have been formulated. |
| TRL 3: | Applied research. First laboratory tests completed; proof of concept. |
| TRL 4: | Small scale prototype built in a laboratory environment ("ugly" prototype). |
| TRL 5: | Large scale prototype tested in intended environment. |
| TRL 6: | Prototype system tested in intended environment close to expected performance. |
| TRL 7: | Demonstration system operating in operational environment at pre-commercial scale. |
| TRL 8: | First of a kind commercial system. Manufacturing issues solved. |
| TRL 9: | Full commercial application, technology available for consumers. |

The Platform will pursue the following primary objectives:

- Mobilise all actors sharing a long-term **European Common Vision** for geothermal;
- Implement the **European Strategic Research and Innovation Agenda** for geothermal for the next decade(s) and give recommendations for its implementation through the annual **Technology Roadmaps**;
- Provide a major contribution to the European industry and research to maintain and consolidate its leading position in energy technologies for geothermal.

Link with the ETIP on renewable heating and cooling

The **European Technology and Innovation Platform on Renewable Heating & Cooling (RHC-Platform)** brings together stakeholders from the biomass, geothermal, heat pump and solar thermal sector- including the related industries such as **District Heating and Cooling, Thermal Energy Storage, Hybrid Systems** and



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Heat Pumps - to define a common strategy for increasing the use of renewable energy technologies for heating and cooling.

The geothermal panel of the RHC-Platform was launched in 2009.

Since 2023, The RHC-Platform has integrated part of its activities into ETIP- Geothermal: the geothermal panel of RHC platform and the Working group on h&c of ETIP geothermal are merged. The WG leaders will represent the geothermal technologies in the RHC Platform board.

2. Organisation and operations

The ETIP is structured by Working Groups (WG). A first structure of the WGs was established in 2017 when the ETIP was established. The new Steering Committee in 2020 updated the structure of the working groups by adding new groups for cross cutting activities.

With the creation of a unique ETIP for all geothermal technologies, since 2021, the new SC elected for the period 2023-2026 is updating the structure of the WG.

The new ETIP structure of working groups will be published in 2024.

2.1. Structure

The Management structure of the ETIP-G is the following:

ETIP Steering Committee

The SC is the highest decision-making body of the ETIP-G and is responsible for providing guidance to the activities of the Platform. Working Groups on research and policy topics contribute to the achievement of the ETIP's objectives.

ETIP Secretariat

The ETIP Secretariat is managed by the European Geothermal Energy Council (EGEC) and it is responsible for the standard business activities of the ETIP. It provides logistical and organisational support to the Technology Platform and its WGs.

Working groups



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The ETIP works with several working groups (WGs) which include all geothermal technologies. Acting under the guidance of the Steering Committee, each WG is responsible for collecting and developing stakeholders' inputs from the respective sectors.

The ETIP-G aims to include stakeholders representing all geothermal technologies for energy from industry, research, and the public sector from all over Europe.

The Platform is recognised by the European Commission as one of the **European Technology and Innovation Platforms (ETIP)** and it is included in the publicly available list of recognised ETIPs on the European Commission ETIP website.

Terms of reference:

The terms of reference had to be updated to reflect the new ETIP for all geothermal technologies. It was discussed during the first meeting of the new SC 2023-2026 and then adopted by this SC in 2024. They apply for the next activities of the ETIP-G.

The terms of reference can be amended by the SC at any time; the modified terms of reference should be communicated by the ETIP-G members.

2.2. Steering Committee (SC)

Consistent with the structure, objectives, and mission of the European Technology and Innovation Platform on Geothermal, a steering committee acts as the top-level decision-making body of the ETIP-G.

The primary aim of the SC is to provide guidance concerning the activities of the ETIP Secretariat and Working Groups, ensuring that the ETIP-G's other bodies and working groups effectively pursue the ultimate mission of the ETIP-G: defining the overall **Common Vision**; developing up the **Strategic Research and Innovation Agenda (SRIA)**; and establishing and implementing annual **Roadmaps** for the large-scale development and deployment of geothermal energy.

2.2.1. Description and role

The SC of the Platform shall have the following powers and duties:

- I. To set the periodic objectives for the ETIP-G and monitor its implementation;
- II. To ensure consistency among the activities of the ETIP-G and, in particular, among its working groups;



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- III. To define, propose and implement any actions required for the achievement of the mission of the ETIP;
- IV. To produce any contribution that may be required of the ETIP-G SC;
- V. Through the President or the Vice-Presidents, to represent the ETIP-G before third parties and external stakeholders.

2.2.2. Composition

Members of the SC are representatives of European companies, research centres or any other legal entities of public or private status which satisfy all the following conditions:

- I. being Members of the ETIP-G;
- II. being willing to be a Member of one of the Working Groups;
- III. being able and willing to provide an effective contribution to the achievement of the objectives of the ETIP-G.

One aim is to ensure a good mix of representatives within the SC from different parts of the geothermal sector and European countries.

The SC of the ETIP is composed of a minimum of twelve elected Members as well as five nominated representatives: one from **EERA-JPGE**, one from **Geothermal ERA-NET**, one from **IEA-GIA**, one from **EuroGeoSurveys** and one from **EGEC**.

The SC 2023-2026 is composed by 17 members, 12 elected and 5 nominated.

The SC is presided over by a President and by four Vice-Presidents, entitled to represent the entire ETIP vis-à-vis external entities and at all official events.

2.2.3. General Rules

a) Mandate

The duration of all mandates is three years as of the date of appointment. Membership of the SC will automatically end in the event of:

- I. Expiration of mandate as SC Member;
- II. Expiration of mandate as Member of ETIP-G;
- III. Withdrawal of mandate by the SC (quorum: $\frac{3}{4}$ of SC Members having the right to vote);
- IV. Resignation.

The outgoing Members of the SC may be re-appointed.



b) Election:

The SC elected and appointed members are the President, four Vice-Presidents, and minimum fourteen representatives.

Elections of the elected SC members take place by secret ballot following a call for candidates.

All members of the platform are informed of elections and can declare their candidature through a letter addressed to the secretariat. Candidates are elected by the members of the ETIP-G present at the meeting (physical or virtual) in which the election is held. In case of absence, a member is allowed to be represented at the meeting by a proxy who must also be a member of the ETIP-G. On the day of the elections, the Secretariat will announce the names of the candidates. After a short explanation of the voting rules, the secret ballot will take place. The candidates obtaining the highest number of votes are elected. In case of a tie, the outgoing President has the faculty to cast one vote, having regard to the competences of the candidates, to their experience, and to the opinion of the Secretariat of the ETIP-G. In case, the President provides one vote to all candidates getting the same number of votes, the number of elected members for the SC is increasing from 12 to the total number with candidates tied.

The election of the WG Chairs is held just after the selection of the SC members.

The President and the Vice-Presidents of the ETIP-G are elected by the SC members at the first meeting of each new term of the SC. In case there is more than one candidate, the election by secret ballot will take place under the supervision of the Secretariat and any observers appointed by the Secretariat. The Secretariat of the Platform is responsible for organising and running the elections of the SC's President and Vice-presidents.

Only representatives from Industry, members of the SC, can be candidate to become President of ETIP-G.

The election of the President and Vice-Presidents is ruled by the following procedure:

- I. At least 14 days prior to the expiration of the mandate, the Secretariat launches a "call for expression of interest".
- II. In order to be eligible, a candidate must be a SC Member. The outgoing President and Vice-Presidents may stand for re-election but cannot hold the position for more than three consecutive terms.
- III. Candidatures should be received by the Secretariat at the latest one week before the election takes place. Online processes can be shortened.
- IV. On the day of the elections, the Secretariat will announce the names of the candidates for the position of President and Vice-President. All candidates will be given the opportunity to introduce



themselves to the SC Members. After a short explanation of the voting rules, the secret ballot will take place.

- V. Each SC Member has the faculty to cast one vote for President and two Vice-Presidents. The candidates obtaining the highest number of votes are elected “President and Vice-President of the SC”. In case of a tie, the Coordinator of the Platform’s Secretariat has the faculty to cast one vote, having regard to the competences of the candidates, to their experience, and to the opinion of the Secretariat of the ETIP-G.

c) Quorum and Vote

The SC of the ETIP-G may validly deliberate, provided half of its Members are present. It makes decisions on the basis of a simple majority of votes. Each Member shall have one vote. In case of a tie, the vote of the President or their substitute is prevailing.

d) Proxy

In case of absence, a Member is allowed to be represented at the SC meeting by a proxy who must be a SC Member as well. A Member can represent only one other member. The notification of a proxy vote can by means of a letter or by email must be received by the Secretariat at least one day in advance of the SC meeting.

Exceptionally, provided that the Secretariat is notified at least one week in advance, a SC Member can be replaced by a colleague from the same organisation or by another Member of the WG’s to which he/she belongs to, provided this is not against the specific rules of the WG of reference.

e) Notice

At least two times per year, all Members of the SC are summoned to attend a physical or virtual meeting, which can take place during the annual meeting of the ETIP.

The SC shall meet on notice of the Secretariat of the Platform acting on behalf of the President or upon request of at least half of its Members. The notice must be sent to the SC Members at least one month in advance. The notice shall at least state the main subject of the meeting as well as the venue and the date.

2.3 Executive Committee (ExCo)

The Executive Committee is composed of the President, the Vice-Presidents and the Secretariat of the Platform. The ExCo works with the support of the Secretariat in the overall planning, coordination and management of the Platform’s activities. The ExCo can also take ad-hoc decisions concerning the daily management of the Platform, but cannot modify the structure of ETIP-G or approve any of its major deliverables (these are prerogatives of the SC).



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The Secretariat helps the President and vice-Presidents when required or upon request in representing the views of the Platform towards external (e.g. European Commission).

2.4 Secretariat

The Secretariat is hosted by the European Geothermal Energy Council.

It is represented by its Secretary General, who is an observer at the Steering Committee and at the Executive Committee.

The Secretariat provides logistical and organisational support to the Technology Platform and its WGs, and, where appropriate, provides intellectual input to their discussions.

The Secretariat is in charge of the organisation and the management of the ETIP-G website, where general information, public documents and a private section for members and restricted documents will be provided.

2.5 ETIP Geothermal Working Groups (WGs)

2.5.1 Role

The role of the ETIP-G is to develop and implement research pathways towards successful deployment of the technologies as well as the constant review of the Strategic Research and Innovation Agenda /Technology Roadmaps. WGs are established to define R&I priorities.

WG numbers and themes are decided by the SC of the ETIP-G. Additional WG themes or adjustment can be proposed at any time by members. The Steering Committee amends if necessary and approves these WGs.

2.5.2 Principles

Each member of the Platform must join one or more WGs. Participation in the Working Group is free and open to all active entities in the geothermal Energy field or related activities.

Each WG selects one chair and one vice-chairs, by vote of WG members if requested. These Chairmen and Vice-Chairmen are reporting the WGs activities at the SC, and they can be invited at SC meetings as observers.



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WGs meetings take place at least twice a year, but additional virtual meetings or webinars should take place on a regular basis.

To ensure transparency, all documents of the ETIP-G are published on a website, which will also serve to inform the stakeholders about current and next activities. Minutes of the WG meetings are also be available online.

2.6 ETIP Geothermal members

Members of the ETIP are entities, not persons. They are European companies, research centres or any other legal entities of public or private status. The activities of the ETIP are then performed by the delegates from these entities they represent.

No membership fees are requested and the access to become membership of the ETIP-G is not restricted to anybody.

Being a member of the ETIP-G means being a member of one or more of the Working Groups. Members can involve one or several experts from their institutions in the different working groups.

Any member of the ETIP can ask the SC to create a new Working Group.

Participation to the activities of the Working Groups is free and on a voluntary basis. Members are informed about the activities of the ETIP-Geothermal and are invited to contribute to the drafting of the Strategic Research and Innovation Agenda, the Technology Roadmap, and its implementations.

2.7 Terms and conditions

The participation to the ETIP-Geothermal will involve the collection and processing of personal data (such as name, e-mail address and affiliation). This information will be processed pursuant to Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

The data provided allow the Secretariat, the members of the steering committee and the working group leaders to organize the work of the ETIP-Geothermal, to invite members to meeting organized by or in the context of the ETIP-Geothermal and to involve members in the drafting of the strategic documents. The data you provided will be processed solely for these purposes.

Details concerning the purposes and means of the processing of personal data as well as information on how to exercise rights are available in the privacy statement.



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