

Sustainable Europe Investment Plan

What is the Sustainable Europe Investment Plan?

The Sustainable Europe Investment Plan, often referred to as the European Green Deal Investment Plan (EGDIP), represents the main investment pillar of the EU Green Deal. It will have to mobilise at least €1 trillion in sustainable investments over the next decade in order to achieve a climate-neutral economy by 2050.

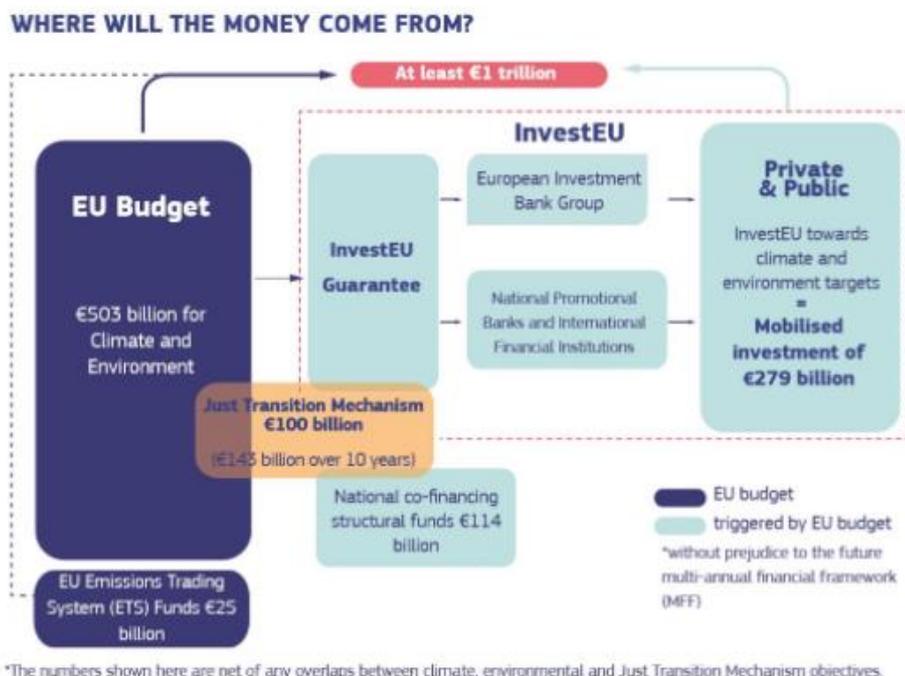
The Sustainable Europe Investment Plan sets out three **main goals**¹:

- It has to increase funding for the transition and mobilise at least €1 trillion to support sustainable investments over the next decade through the EU budget and associated instruments, in particular InvestEU;
- It has to create an enabling framework for private investors and the public sector to facilitate sustainable investments;
- It has to provide support to public administrations and project promoters in identifying, structuring and executing sustainable projects.

HOW WILL IT BE FINANCED?

The European Commission published a graph explaining the financing for this instrument:

Currently, the main contributors to the EGDIP will be the EU's budget, EIB, contributions from the



Member States and private investors. It is clear that the EU budget alone cannot be enough to meet

¹ EU Commission, Q&A, *The European Green Deal Investment Plan and Just Transition Mechanism explained*, https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_24; https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

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the massive EU investment needs in regard to the 2050 targets. Hence, a considerable part of financing will be provided by the Member States and private actors, as well as by the European Climate Bank in the near future.

The complex financing structure of the EGDIP needs to be translated into tailored instruments for geothermal energy and other renewable technologies that deliver on decarbonisation objectives. Specifically, these funds should be accessible to decentralised investments for the small-scale projects that are at the core of the energy transition. That is why it is crucial to highlight the importance of the right financial schemes that needs to be put in place in order to leverage public money (i.e. geothermal de-risking schemes).

HOW THE SUSTAINABLE EUROPE INVESTMENT PLAN COULD SUPPORT GEOTHERMAL PROJECTS?

Mobilising at least €1 trillion to support sustainable investments over the next decade is a much needed step for reaching a climate-neutrality by 2050. However, this entails that the Sustainable Europe Investment Plan engages a paradigm shift that puts the European economy on track to phasing out fossil fuels, towards a renewable based economy. This means that from 2020 only projects consistent with a decarbonised economy in 2050 should benefit. Geothermal energy projects fit perfectly in this framework. Therefore, the Sustainable Europe Investment Plan must support geothermal energy projects through:

➤ De-risking geothermal energy projects

Geothermal energy projects require high initial capital investment and can be perceived risky as underground resources. Very often developers that work on geothermal energy projects are facing the so-called “resource risk”: before a geothermal well has been drilled – which may represent up to 50% of a project cost already – high uncertainties remain (as for example the resource quality: temperature, flow), that in the end determines the capacity and the profitability of the project. At the moment, few countries (such as France, Germany, Iceland, the Netherlands and Switzerland) have developed risk mitigation funds in order to cover this type of risk.

In this sense, the European project GEORISK aims to establish risk insurance all over Europe and in some key target third countries to cover risks associated with the development and the operation of a deep geothermal plant. This mitigation of the risk through financial instruments allows to reduce the cost of deploying geothermal energy projects.

The EGDIP can be used to facilitate the market uptake of geothermal energy by lowering the cost of new developments through de-risking schemes dealing with geothermal resources across Europe. Moreover, establishing risk mitigation for new markets will allow an easier deployment of geothermal energy. Following on the findings of the GEORISK projects, such schemes must be tailored to the maturity of the market where they are implemented.

The deeper the geothermal project portfolio, the greater the exposure to the market forces for the de-risking scheme.

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Finally, there is a need for launching a resource mapping campaign for deep geothermal. The lack of knowledge about the deeper subsoil is a barrier in the development of geothermal projects and tapping into the potential of this resource in currently undeveloped markets. New geological data is key to create a momentum in the development of geothermal energy².

- **Financing renewable heat infrastructure – new generation of geothermal district heating technologies**
- **Technology trends with geothermal at the core:** Geothermal and other renewable heat infrastructure has the characteristics required to play a central role in the future fully decarbonised energy system: it is clean and it provides affordable energy. The new generation of district heating technology, smart thermal grids, is based on lower distribution temperatures for more efficiency, flexibility and supply temperature levels according to needs, digitalisation and on decentralisation (by tapping into locally available source of heating such as geothermal energy). This combination delivers both higher energy efficiency and greater use of renewable energy resources, such as geothermal.
- **Highlighting the role of local governance and local investments:** heat energy projects require more decentralisation and knowledge of local demand and available resources. For example, over 60% of geothermal DH projects are directly operated by local authorities or their local energy companies. Moreover, Article 15 of the RES Directive underlines the importance of local planning to deploy more renewable heat investments, stating that Member States shall encourage local and regional administrative bodies to include heating and cooling from renewable sources in the planning of city infrastructure.
- **Financing heat infrastructure and geothermal heat supply** to industry and services through grants, equities, new business models and remove barriers for accessing investments for local authorities, in accordance with Article 23 and Article 24 of the RES Directive to increase the share of renewable energy in the heating and cooling sector.
- **Providing access to the right support schemes for private companies and citizens to assist the installation of shallow geothermal technology**

Shallow geothermal technology delivers economic, environmental and energy system benefits to Europe. These systems are already established as an economic, efficient, renewable technology for heating and cooling.

The announced renovation wave of buildings needs to focus on putting the EU building stock in line with the objective of decarbonisation by 2050 that is set in the Energy Performance of Buildings

² EGEC, *Open Letter: European call for an increased use of geothermal energy*, <https://www.egec.org/media-publications/open-letter-european-call-increased-use-geothermal-energy/>

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Directive. This means a thermal renovation that also prioritises the decarbonisation of the energy supply of the building, i.e. the heating and cooling system. There are different kinds of barriers for renovation in this sense that needs to be overcome. In cases of renovation and refurbishment, the technical barriers against shallow geothermal are usually much higher than for new built - where it is already among the most competitive heating and cooling solutions. Beside technical and regulatory barriers, lack of knowledge about shallow geothermal and other renewable heating and cooling technologies is a crucial impediment for their market uptake.

Moreover, it is key to create and encourage the right business models by providing, for example, zero interest loans to vulnerable households to install geothermal heat pumps and other renewable heating and cooling solution. Enabling the development of business models for the provision of “heat as a service” is a complementary solution. Support measures for geothermal technologies are needed to favor the restoring of a level playing field in the heating and cooling sector, which remains today dominated by incumbent fossil technologies.

➤ Deploy geothermal electricity projects for base load and flexible generation

Being able to provide baseload power, or to meet sharp ramp or down requirements, geothermal power plants can provide value for the stability of the power system. A framework that captures this value and fairly distributes it to the geothermal plants can incentivise the development of a more robust electricity network and spur the development of flexible and dispatchable renewable capacity, notably geothermal electricity. Capacity remuneration mechanisms or grid premium are possible policy and financial solutions to this end.

The deployment of geothermal electricity requires scaling up innovative technologies and improving their market maturity. While several projects are being developed, they need adequate support to emerge as geothermal is a capital-intensive technology, which presents additional challenges to other resources, notably linked to the technology specific risk.

The Sustainable Europe Investment Plan must be an enabler of geothermal electricity technologies and other flexible renewable technologies, to tap into the security and resilience they provide to the decarbonised electricity grid. Both - support to innovation and the establishment of business models and instruments to reward the provision of flexibility - fall within the scope of the EU Green Deal's objectives.

➤ There is a need of market uptake of innovative geothermal technologies

The key factors driving the renewable energy market include a rising demand for energy, favorable government initiatives, and better economies of scale. Over the past years, renewable energy application has been applied more often due to its technological advancement and cost reduction benefits for society and business.

For example, geothermal energy is increasingly used across Europe to meet energy needs in electricity production and in heating and cooling. Technological innovation allows for ever more diverse application of geothermal energy, enabling new markets to tap into this renewable resource.

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Meanwhile, the uptake of mature geothermal technologies contributes to the decarbonisation of the European economy.³ This evolution was allowed by the right use of Research and Innovation (R&I) funds, public supports in form of capital investment or operating aids, in the pursuit of renewable energy objectives and the development of new financing schemes to channel this funding to geothermal projects.

The deployment of geothermal energy, however, remains far below the resource potential in Europe, as well as its market share. Therefore, the next step would be to create fair market conditions for all renewable sources that are there already available on the market, as well as to invest and increase the RES market share that are proven to be crucial to decarbonisation. The market uptake of geothermal technologies needs more RD&I investments in the industry that subsequently will lead to the creation of more jobs and higher energy security.

TAKEAWAYS

The Sustainable Europe Investment Plan is a crucial financial mechanism needed for delivering a successful energy transition. On the long-term perspective, the success of these investments will very much depend on how effectively these financial resources will be used. When it comes to renewable energy industry, the key areas that the Sustainable Europe Investment Plan should be focusing on are the following:

- Promoting and investing in risk mitigation funds for geothermal energy;
- Launch a resource mapping campaign for deep geothermal;
- Deploy Geothermal electricity projects for base load and flexible generation;
- Financing the deployment of geothermal district heating systems and heat supply to industry and services;
- Providing access to the right support schemes and create the right business models for the installation of geothermal heat pumps;
- Supporting market uptake of proven innovative renewable energy technologies.

³ EGEC Market Report 2018, https://www.egec.org/wp-content/uploads/2019/05/KeyFindings_MR-18.pdf