# Innovation Fund

The Innovation Fund just like its predecessor, NER300, is one of the world's largest funding programmes for demonstration of innovative low-carbon technologies and a key funding instrument for delivering the EU's economy-wide commitments under the Paris Agreement. It also supports the European Commission's strategic vision of a climate neutral Europe by 2050. **The Innovation Fund will focus on:**

- Innovative low-carbon technologies and processes in energy intensive industries, including products substituting carbon intensive ones;
- Carbon capture and utilisation (CCU);
- Construction and operation of carbon capture and storage (CCS);
- Innovative renewable energy generation;
- Energy storage.

The budget of the Fund will be combined with the revenues from the EU Emissions Trading System (EU ETS) – from the auctioning of 450 million allowances from 2020 to 2030, and any unspent funds from the NER300 programme. The total budget may amount to about €10 billion, depending on the carbon price.

The Innovation Fund will address **several objectives:**

- help create the right financial incentives for projects to invest now in the next generation of technologies needed for the EU's low-carbon transition;
- boost growth and competitiveness by empowering EU companies with a first-mover advantage to become global technology leaders;
- support innovative low-carbon technologies in all Member States in taking off and reaching the market.

The Innovation Fund has taken into account the main lessons learned from its predecessor, the NER300 programme. As a result, the following aspects have been improved:

- It is open to projects from energy intensive industries;
- It improves the risk-sharing for projects, which means that its grants cover up to 60% of the additional capital and operational costs of innovation;
- It provides support in more flexible way, following the cash-flow needs of the project through pre-defined milestones;
- It has a simpler selection process and stronger synergies with other EU funding programmes.

It will focus on highly innovative technologies and big flagship projects with European value added that can bring on significant emission reductions. It is about sharing the risk with project promoters to help with the demonstration of first-of-a-kind highly innovative projects.

It aims to finance a varied project pipeline achieving an optimal balance of a wide range of innovative technologies in all eligible sectors (energy intensive industries, renewable energy, energy storage, CCS and CCU) and Member States. At the same time, the projects need to be sufficiently mature in terms of planning, business model and financial and legal structure. The Fund will also support cross-cutting projects on innovative low-carbon solutions that lead to emission reductions in multiple sectors, for example through industrial symbiosis or business model innovation. It is also open to small-scale projects with total capital costs under €7.5 million which can benefit from simplified application and selection procedures.

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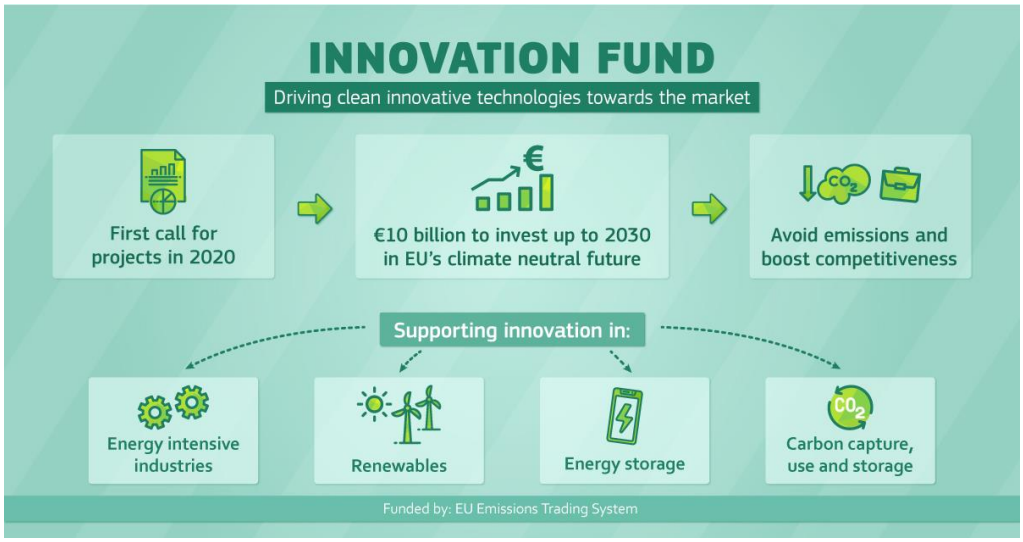


*(The Innovation Fund, https://ec.europa.eu/clima/policies/innovation-fund_en#tab-0-0)*

The European Commission has launched its first call of the Innovation Fund on **the 7th of July 2020.** This call is open for Large Scale Projects, with a first-stage deadline of 29 October 2020. In the first stage, proposals will be assessed on their greenhouse gas emission avoidance, the degree of innovation, and project maturity. In the second phase, scalability and cost efficiency will also be assessed.

Seventy projects from the first stage process will be selected to advance to the second stage, which will have a deadline of 23 June 2021.

Up to forty of the project proposals that do not make it to the second phase may be considered for Project Development Assistance from the European Investment Bank.

Moreover, applications for small scale projects (below 7.5 million EUR) will launch by the end of 2020.

More details regarding the application process will be published on the EC Funding and Tenders portal

## Geothermal energy projects

Geothermal projects have benefited from the NER300, and technologies such as EGS are well suited to be eligible under the Innovation fund. Some challenges may however arrive depending on how innovation is defined. The geothermal energy projects in the scope of the Innovation Fund were:

| Project name | Location | Funding | Description |
|---|---|---|---|
| **Geothermae** | Prelog, Medjimurje, Croatia | EUR 14.7 million | Geothermal CHP Project with 18.6 MWe + 75 MWth |
| | | | The geothermal power plant pumps geothermal brine from 1850-2300 m deep wells. It takes full profit of the energy content of the geothermal brine, consisting of the heat of the water and the combustion of the aquifer gases such as methane dissolved in the same water using an Organic Rankine Cycle (ORC) turbine. |
| **South Hungarian EGS Demonstration** | Battonya, Hungary | EUR 39.3 million | EGS project, for a geothermal power plant with an ORC turbine with a planned capacity of 8.9 MWe |
| **Geostras** | Vendenheim, Alsace, France | EUR 16.8 million | GEOSTRAS will develop a deep underground exchanger in Alsace with low natural permeability. A geothermal plant will be built to jointly produce electricity, heat and/or cold with the following characteristics:<br>• 241 000 MWh for electric production;<br>• 810 000 MWh for thermal production. |

The funding of the above-mentioned projects is illustrating clearly the priorities of the programme for geothermal energy: contributing to increasing the market maturity of innovative geothermal technologies (typically EGS) and to increase the market uptake of geothermal energy in new markets, by financing innovative project at scale. Considering the ARENA Commercial Readiness Indicator, the NER300 acts to bring technologies from the CRI2 (Commercial trial, small scale) to CRI3 or CRI4 (Commercial scale up).
This provides perspective as to the type of projects that may benefit from support from the Innovation Fund in the coming decade.

## Challenges of the Innovation Fund: Financial allocation[1]

A major challenge of the Innovation Fund stems from the way funding will be allocated to selected projects. Indeed, as the Innovation fund has a generalist purpose (it is not designed with a specific

[1] EGEC, Innovation Fund Factsheet, https://www.egec.org/wp-content/uploads/position_papers/The-Innovation-Fund-factsheet.pdf

energy technology in mind), funding allocation mechanisms may not be aligned with the requirements of geothermal energy projects.

For geothermal energy projects in the NER300 a crucial challenge is indeed related to the allocation of funding in the form of grants repayable in case the projects do not perform as initially promised. Considering the economics of geothermal energy projects, highlighted notably in the scope of the GEORISK project, such funding allocation is particularly unsuitable to geothermal project development, as it does not contribute to mitigating the financial risk linked to the innovative nature of the project and the higher geological risk in undeveloped areas. As the Innovation Fund will propose a greater array of mechanisms to allocate funding to innovative renewable energy projects supported, there is an opportunity for geothermal energy projects to receive this financial support. It will also prove to be beneficial in accelerating the progression of technologies toward market maturity.

The allocation of financial means within the Innovation Fund will be executed in a technology neutral manner, by considering the contribution of a project (and the potential adoption at scale of the innovative technology demonstrated) in terms of carbon emissions reductions. Further benefits (for example like the grid services) may be considered but will not be the primary decision factor in allocating the support.

The fund allocation mechanism may allow up to 40% of the awarded grant to be conditioned to the accomplishment of project milestones (in the case of a geothermal project for instance the completion of the first well) and not only on GHG emission reduction performance.

The support allocated to the Innovation Fund is the following:

$$\textbf{Grant} = 50\text{-}75\%\left(\text{Cost}_{[\text{Innovative Project}]} - \left(\text{Cost}_{[\text{Coventional project}]} + \text{Operational Cash Flow}\right)\right)$$

Projects supported under the Innovation Fund must take place in countries that are part of the EU ETS. All innovative geothermal technologies are eligible in principle for receiving the funding that is outlined in the Innovation Fund, without any restriction on scale.

## Takeaways:

- Key prospect for commercial scale projects of innovative geothermal energy technologies;
- Primarily for deep geothermal projects until now, but large scale shallow geothermal projects may benefit (e.g. UTES);
- Development of new market area for deep geothermal energy;
- Possibility for grants to be partly validated by milestones, not only performance, which can mitigate the risk inherent in innovative geothermal projects.