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ETIP Deep Geothermal recommendations for the European Energy Transition Fund

Investing in geothermal energy RD&I to support coal intensive regions in benefitting from the energy transition: allowing workers to retain high status jobs, industrial sectors, and minimise energy poverty.

In light of the initiative for Coal Regions in Transition from the European Commission, the question of the social impact of the decarbonisation of the European economy is arising more steeply. As a mean to answer this social, economic and technical challenge, the European co-legislators propose the establishment of a European Energy Transition Fund in the framework of the Clean Energy Package. This fund is expected to contribute EUR 4.8 billion to support coal-dependent regions to green their economies. A key objective of this fund is to facilitate the social dialogue to accompany the decline of the coal industry and avoid the social impact of similar transitions in European regions over the past century.

As part of the priorities of the European Energy Transition Fund, geothermal energy appears to be among the key technology solutions. It provides a solution for decarbonisation, mitigating energy poverty and providing high quality jobs to workers of the Coal industry in another highly technical energy sector.

Geothermal energy and extractive industries: synergies for a just transition?

Geothermal energy is in many ways similar to conventional extractive industries such as mining for minerals.

- It requires extensive understanding of geological formations to identify possible production sites.
- The equipment and know-how for developing a geothermal production closely resembles – in some cases, it is the same – those for conventional drilling.
- Geothermal power and cogeneration is produced using turbines, which are usually manufactured by companies also involved in turbines for conventional power.

Beyond similarities, there are many synergies between the geothermal and the fossil mining industry at the geographical, business and skill level.

- The location of coal mining sites tends to correlate with geothermal resource. This allows the development of renewable resources with skilled workers in their own region.
- Geothermal project development requires many of the same skill set that mining workers possess: expertise in geosciences, management of drilling operations, management of flow extraction, with corrosive and high temperature fluids, electricity and heat production skills, reservoir engineering, district heating design and management ... and many more.
- Geothermal projects, although of different scale than conventional mining projects, tend to also share business model similarities, particularly regarding the uncertainty inherent to underground production. However, the differences in cash flows and profitability make a sound expertise in preparatory studies all the more precious.

Geothermal as an opportunity for workers of the fossil fuel industry and for carbon intensive communities

The ETIP DG Strategic Research and Innovation Agenda (SRIA) notably highlights the priorities for the geothermal sector in terms of human resources. These priorities are closely aligned with the imperatives of a successful just transition in Europe's coal intensives regions. The potential of the geothermal power industry can only be achieved by attracting, retaining and renewing the workforce. Companies and research organisations need to adopt a range of measures if they are to access the highly skilled workforce they need. Several actions are required:

- Enhancement of the educational and training process while planning instructional education for the geothermal market, by developing courses on geothermal with existing university courses in fields such as engineering, bio-sciences, earth sciences, business administration and finance, and launching new courses combining geosciences and mechanical engineering;
- Create Networks for Geothermal Energy Education and Training involving industrial platforms, universities and research centres with expertise in geothermal energy-related disciplines – geosciences, material sciences, mechanical engineering, computational sciences, economic and legal sciences;
- Develop an Employment action plan in order to transfer knowledge and absorb the workforce of declining industries while promoting the mobility of workers in Europe;
- Launch international cooperation, especially for EGS, establishing centers of excellence, for instance around demonstration sites for the technology.

Overall, the SRIA is a document that underlines the many synergies between the geothermal energy sector and the fossil fuel industry (chiefly oil & gas, but also coal) in terms of know-how, technology and industrial developments. This highlights the potential contribution of the geothermal as an instrument of the just transition, in addition of being a key tool of decarbonisation of the European economy.

Key policy recommendations of the European Energy Transition Fund

For the geothermal sector to contribute to a just and fair transition for workers and communities in Europe's coal – or more generally carbon – intensive regions, the European Energy Transition fund needs to address the following issues:

- Invest in the re-training of workers and Enhance synergies between geothermal and coal workers;
- Promote local, regional and national strategies to develop an industrial strategy around geothermal energy in coal regions;
- Establish a support framework relevant to the development of innovative renewable energy technologies that provide synergies for workers of the fossil industry with:
    - Financing: repayable grants in immature markets, risk insurance facilities for the geological and production risk;
    - Regulations: a facilitating framework to support geothermal development;
- Identification of geothermal resources, and forward-looking planning of development of the new energy infrastructure that avoid carbon lock-in, notably based on communities and local authorities.

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