Geothermal energy

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The European Parliament adopted by 531 votes to 2, with 20 abstentions, a resolution on geothermal energy.

Parliament regretted that the potential of geothermal energy has not been sufficiently exploited sooner and that its recent uptake is largely being driven by the energy crisis and an urgent need to ease the socio-economic pressure of demand for heating and cooling in Europe. It warned that the influx of subsidised gas, limited public awareness and high upfront investments needed have been effectively hampering the development of geothermal energy for years.

Development and potential

The resolution stated that the development of technologies has broadened the area suitable for cost-efficient geothermal projects and their scope. Geothermal energy still often plays a peripheral role in the discussion on renewable energy. However, Members stated that geothermal installations do not require critical raw materials to the same extent as other renewables. Moreover, geothermal has low environmental impact and typically requires limited land use and can easily be integrated into the landscape.

The resolution underlined the potential of geothermal energy to make a substantial contribution to attaining key strategic objectives within the EU, including reaching climate targets by decarbonising different industrial sectors, bolstering the EU's open strategic autonomy by strengthening energy security needs, eliminating fossil-fuel dependencies on unreliable third countries, such as Russia, increasing the competitiveness of European industries and empowering consumers thanks to an affordable and reliable supply of heat and electricity.

The resolution stressed that the greatest potential of geothermal energy use in the EU lies in district heating and cooling systems and networks of shallow geothermal installations. Geothermal can help to decarbonising heating and cooling sector that accounts for almost half of the EU's overall final energy consumption and contributes up to 35 % of the EU's greenhouse gas emissions related to energy use.

Policy recommendations

The Commission is called on to:

- present an EU geothermal strategy giving concrete guidance to Member States and local administrations to accelerate the deployment of geothermal energy in order to decarbonise heating and contribute to the EU's energy independence and to meet the objective of at least tripling the share of energy demand covered by solar heat and geothermal energy by 2030 as announced in the EU Solar Strategy;

- base the strategy on a comprehensive assessment of the potential of geothermal energy in the shallow, medium, deep, and ultra-deep subsurface across all 27 Member States;

- address in the strategy the obstacles for the development of geothermal projects, including cross-borders issues and to provide a guide on best practices in geothermal energy use in the EU for national and local authorities, project developers, and financial institutions;

- establish a ‘geothermal alliance’, including Member States, geothermal adoption enablers, industry, the scientific community and civil society that would facilitate the exchange of best practices and to implement the future geothermal strategy;

- explore the potential of geothermal energy to contribute to objectives production of clean hydrogen established in the REPowerEU plan.

Geothermal district heating and cooling

Underlining the need to modernise existing heating and cooling networks and build new ones using the potential of geothermal energy, the Commission and the Member States are called on to create strong incentives to support the above and to favour 4th and 5th generation heating and cooling systems.

Funding

Noting that high upfront drilling and installation costs tend to discourage the selection of geothermal heat pumps (GHPs) in favour of less efficient technological solutions, Parliament called on the Member States to explore possible financial incentives to bridge this gap, including through ‘pay as you save’ (PAYS) financing models. The Commission should also address this issue in the upcoming EU heat pump action plan.

The resolution also called on the Commission to take appropriate steps to ensure that geothermal projects are better taken into account when using existing European funds and instruments.

Regulatory issues

Faster permitting rules for geothermal, in compliance with existing EU environmental legislation, would facilitate the deployment of geothermal energy projects across the EU. Geothermal projects encounter lengthy permitting processes and Member States are urged to create more efficient streamlined and digitalised permitting processes for new geothermal projects and for the expansion of existing facilities, including by creating a **one-stop shop** for the whole permitting process across authorities and to provide support for local authorities to ensure their workforce is adequately skilled.

Parliament stressed that geothermal should have the **same regulatory status**, including in EU procurement, as already exists for other renewables, and in the Temporary Crisis and Transition Framework, as well as in any subsequent measures. The Commission is called on to review the classification of geothermal energy applications in the taxonomy provisions in order to put geothermal on an equal regulatory footing with wind and solar.

Technology development

While stressing that the EU is the leader in geothermal research and development, high-value patents, publications and manufacturing, Members stated that support measures for next-generation geothermal technologies are needed at European and national level in order to maintain this position, particularly in geothermal storage and industrial applications.

Visibility and public acceptance

Members called on the Commission, in cooperation with the geothermal industry and Member States, to develop **guidelines and best practices** for cooperation between project promoters and local authorities and communities in order to build trust, foster support and create mutually beneficial relationships.

International cooperation

Parliament stressed the need to share best practices, technological know-how, results of research and innovation on geothermal technologies with partner countries and organisations that have already developed deep and surface geothermal energy on a larger scale or are in process of implementing ambitious plans to rapidly grow the geothermal energy sector.