



PRESS RELEASE

Geothermal energy: Key issues in the European Union's Energy Transition

During the "Green Energy Days" in Salina (Aeolian Islands) from June 5-7, 2024), June 6th will be dedicated to geothermal energy. This event is unprecedented in Italy due to the high level of the participants. The focus will be on this natural and clean resource in the country where the use of geothermal energy began over 100 years ago.

Geothermal energy presents a significant green challenge for creating a sustainable energy system. Both the International Energy Agency (IEA) and the International Renewable Energy Agency (IRENA) recognize the strategic importance of geothermal energy. A study by the Massachusetts Institute of Technology (MIT) highlights that Earth's geothermal potential could provide green energy to the entire planet for at least 4,000 years. Experts estimate that half of the global energy need (580 M TJoule) could be satisfied by geothermal energy release by underwater volcanic areas, with the planet's average temperature at 1000 degrees Celsius and 75% of its surface covered by water. Recent studies by US Agency NOAA and Texas A&M University have shown that globally, the "hot" marine seafloors extend for about 30 million square kilometres, an area comparable to Africa.

In recent years, global research and projects in offshore geothermal energy, such as in the Gulf of California (USA and Mexico), Sea of Japan, Indian Ocean (Indonesia, India), North Atlantic (Azores, Iceland), Philippines, Kenya, and New Zealand, have increasingly highlighted the great potential of this resource in both geothermal and mining terms, particularly in marine contexts with high geothermal gradients $>100^{\circ}\text{C}/\text{km}$.

The southern Tyrrhenian Sea area (about 30,000 km²) - which includes the Aeolian Islands - is undoubtedly one of the most important geothermal areas in the world, with an estimated potential of 20-30 MWe/km². The low ecological footprint of offshore geothermal energy makes it one of the most important and sustainable energy resources on the planet. Additionally, strategic metals and minerals can be extracted from geothermal fluids and green hydrogen production can be achieved using electrolyzers.

The International Geothermal Association (IGA), represented at the meeting by its CEO Marit Brommer, and the International Seabed Authority (ISA) have emphasised the need to implement this renewable energy source, which offers continuous productivity (24/7) and can sustain stable electricity production, unlike other intermittent renewables like wind and solar.

In January 2024, the European Parliament published a resolution on geothermal energy (2023/2111 INI), the first official document committing the Council, the European Commission, and member states to support geothermal energy through regulatory simplification and financial support policies for geothermal projects, particularly in the exploration and construction phases. This aims to further develop next-generation geothermal technologies and create qualified employment opportunities.

A decisive paradigm shift in energy choices is underway, with geothermal energy, particularly offshore, increasingly seen as a significant resource. The REpowerEU plan of 2022, Europe's energy security plan, aims to triple geothermal energy by 2030. Recently, the Italian Minister of the Environment and Energy Security expressed support for rapid geothermal project development, establishing a dedicated technical committee in February 2022 to define guidelines for a National Action Plan to revitalise geothermal energy.

A distinguished panel of speakers, including representatives from major European institutions and industries, will discuss these matters and the specific Italian and European contexts. This significant challenge will be addressed in Salina on June 6th during the United Nations Decade of Ocean Science for Sustainable Development (2021-2030).

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