

Fourteenth session of the IRENA Assembly

Side Event

18 April 2024, 13:00 – 14:30 GST

St. Regis Hotel, Saadiyat Island, Abu Dhabi

Annual Meeting of the Global Geothermal Alliance “Geothermal at the Centre of the Energy Transition”

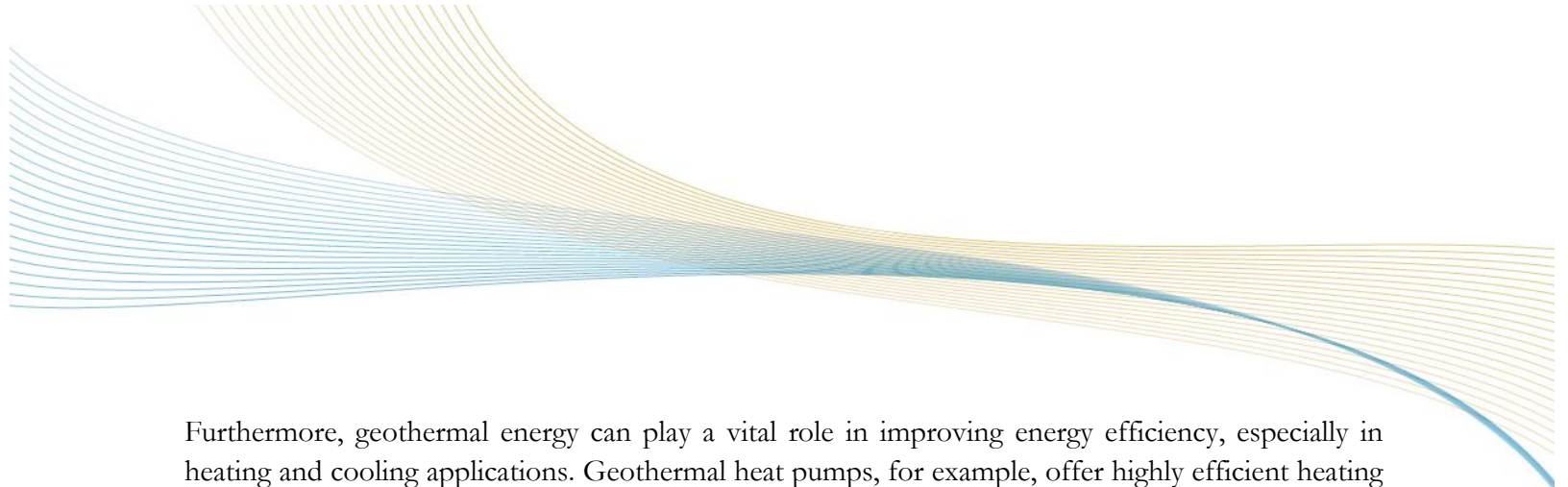
Background

Geothermal energy is recognised as a competitive and predictable renewable energy source for electricity generation, heating and cooling applications, and produce users like agricultural processing that can contribute to energy transition for the achievement of climate and sustainable development goals; yet, its development remains slow compared to its potential. According to the UNFCCC’s 2023 NDC Synthesis Report, only 9% of the NDCs refer to geothermal energy as one of their priority mitigation options. The installed capacity for geothermal electricity generation stands today around 16 GW, and for approximately 170 GW for heating and cooling.

The recent Global Geothermal Market and Technology Assessment by IRENA and the International Geothermal Association (IGA) highlighted the emerging trends that are likely to drive geothermal development in the coming years, such as, technological innovation, increasing development of low-medium temperature resources, increasing collaboration between geothermal and related industries (e.g. oil and gas, and extraction of critical minerals) and international cooperation. Despite the recent accelerating trends, there are several challenges that still hinder faster geothermal development such as high upfront investment costs, resource risks, inadequate policy and regulatory frameworks, and limited knowledge among policymakers and investors.

In this regard, the Global Geothermal Alliance (GGA) continues to play a crucial role as a multistakeholder platform for fostering international cooperation and enhancing dialogue and coordinated action among stakeholders to fast-track geothermal development worldwide. The GGA family has expanded in 2024 with five countries and five partners joining the Alliance in the past year. As of April 2024, the GGA constituency stands at 55 member countries and 59 partner institutions.

Tripling renewables capacity by 2030 as pledged by 132 parties in UAE Consensus sets the foundation to move towards sustainable and cleaner energy future, and the geothermal energy can contribute significantly to achieve the goal. While solar and wind power often receive more attention, geothermal energy has the potential to offer flexibility for ensuring a stable and reliable energy supply. By investing in geothermal projects and expanding geothermal capacity, countries can make substantial progress towards meeting their renewable energy targets as set out in the pledge.



Furthermore, geothermal energy can play a vital role in improving energy efficiency, especially in heating and cooling applications. Geothermal heat pumps, for example, offer highly efficient heating and cooling solutions for buildings, reducing energy consumption and greenhouse gas emissions. By incorporating geothermal energy into energy efficiency initiatives, countries can work towards the goal of doubling energy efficiency by 2030.

The direct use of geothermal energy in the several applications across the agriculture sector like drying has a potential to increase the food availability by 20%, the demand of which is expected to grow about 50% by mid-century. The Empowering Lives and Livelihoods initiative launched by IRENA and the UAE at COP28 is a step in this direction to promote use of renewable energy technologies, like geothermal, across agriculture value-chains for reinforcing resilience and bolstering economic activities across the sector. The IRENA’s guidebook on “Powering Agri-food Value Chains with Geothermal Heat” provides a solid reference to accelerate the utilisation of geothermal energy across agri-food value chains. The learnings from the guidebook will further inform country specific programme development in accelerating direct use of geothermal energy in selected countries in Sub-Saharan Africa.

Objective

The Annual Meeting of the Alliance will bring together GGA member governments and partner institutions to have an exchange on the challenges and opportunities in the geothermal sector, share knowledge and experiences and provide feedback and guidance on the priority areas of focus for the Alliance to better support faster deployment of geothermal power and heat globally.

Associated Publications

[Renewable Energy Solutions for Heating Systems in Mongolia: Developing a strategic heating plan \(2023\)](#)

[Global Geothermal Market and Technology Assessment \(2023\)](#)

[Powering Agri-food Value chains with Geothermal Heat \(2022\)](#)

[Integrating Low-temperature Renewables in District Energy Systems \(2021\)](#)

For more information please contact

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