

The International Geoscience Programme (IGCP)

Since 1972, UNESCO, through the International Geoscience Programme (IGCP) and in partnership with the International Union of Geological Sciences (IUGS), has harnessed the intellectual capacity of a worldwide network of geoscientists to lay the foundation for our planet's future, focusing on responsible and environmental resource extraction, natural hazard resilience and preparedness, and adaptability in an era of changing climate. UNESCO, the only United Nations organization with a mandate to support research and capacity building in geology and geophysics, and its flagship programme, the International Geoscience Programme, actively contribute to society and to the implementation of the Sustainable Development Goals.

IGCP's Contribution to SDG 7

7 AFFORDABLE AND CLEAN ENERGY



UNESCO supports scientific projects that promote the use of geothermal resources as a clean, low-carbon, base-load, and renewable energy in South America. By collecting data and through numerical modelling, scientists from Colombia develop techniques to support geothermal resources management at the Nevada del Ruiz volcano, and evaluate public awareness and acceptance of geothermal energy. Ultimately this will produce a framework that can be used by developing countries to best harness their geothermal resources to provide essential power services.

Between 2000 and 2016, the number of people with access to electricity increased from 78% to 87%, with just less than one billion people not connected to the grid. However, with continued population growth, the demand for affordable energy will also continue to increase, and the energy provided must now also be as low-carbon as possible. **SDG 7 aims to expand infrastructure and upgrade technology to provide low-carbon and more efficient energy in all countries, encouraging economic growth and environmental protection.**

With this in mind, all possible low-carbon energy sources must be considered. One of those is geothermal energy, the heat generated by the Earth's hot interior that is stored in solid rocks and fluids beneath the surface. The use of geothermal energy is not new – humans have used hot springs and thermal pools for all purposes from cooking to therapy since pre-historic times. More recently, and particularly in volcanically-active regions such as Iceland and the Azores, the heat generated by the Earth's interior has been used to produce electricity and heat buildings. Deep-geothermal projects are also underway around the world to capture the warm fluids circulating at great depths within the Earth's crust.



Right: researchers study a rock formation thought to have geothermal potential in Nevada del Ruiz, Colombia
Credit: Daniela Blessent.

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