

Djibouti solar thermal energy

The construction of this project, which is part of our energy transition, is a decisive milestone in the energy sector," announced H.E. Ismaïl Omar Guelleh, President of the Republic, when he inaugurated the country's first wind farm in September 2023. Located near the Bay of Goubet, 120 km north of the capital, it is perched at an altitude of 230 metres. This mountainous site is the windiest in the country; is now home to 17 wind turbines with a total capacity of 60 MW.

"This is an important step towards achieving our goal of producing 100% of our electricity from inexhaustible renewable sources by 2035," continued President Guelleh.

The stakes are high for this ambitious country, which would like to improve its energy competitiveness in order to develop its industry. The country's annual electricity consumption is currently between 100 and 140 MW - but at a cost of 23 cents per kWh, one of the highest on the continent.

The wind farm is the first large-scale initiative by an independent power producer in the energy sector since the 2015 law liberalising the sector. For the government, the aim was to open up electricity production to independent operators so as to achieve energy independence as soon as possible. It should be noted that the state-owned company Électricité de Djibouti retains a monopoly on the transmission and distribution of electricity.

The farm cost around \$130 million to build, which was supplied in part by an investor consortium led by RSP, consisting of the Africa Finance Corporation, an African development finance institution based in Nigeria, the Entrepreneurial Development Bank of the Netherlands, the fund manager Climate Fund Managers, and the investment company Great Horn Investment Holding, which is owned by the Djibouti Ports and Free Zones Authority.

Djibouti contributed its own funds directly to the financing of this major operation via a public-private partnership. Red Sea Power is already planning to add a further 43 MW by installing thirteen new turbines, although no contract has yet been signed.

In ecological terms, the Goubet wind farm will enable Djibouti to reduce its CO₂ emissions by around 250,000 tonnes a year. At the same time, it will enable the country to reduce its energy dependence on Ethiopia, from which it currently imports around 50% of its electricity consumption via a high-voltage line. Finally, the project has a social component. The construction of a seawater desalination plant will supply water to two neighbouring villages, to the tune of 35m³ per day.

In its bid to become the first country on the continent to produce 100% green energy by 2035, Djibouti can also draw on other ambitious projects. These include the solar power project in the Grand Bara desert, for

which work began in 2020. This voltaic power station will have a capacity of 25 MW, with the possibility of an extension of up to 100 MW. The project was originally developed by France's Engie, which withdrew in 2022 in favour of AMEA Power of the Emirates, which has signed a public-private partnership contract with the Sovereign Wealth Fund of Djibouti.

It will be the first national-scale solar power plant to meet electricity demand. "We hope to start production by the first quarter of 2025," says Slim Feriani, CEO of the sovereign wealth fund, which holds a 25% stake in the project company. The project, like others, has been delayed by the global pandemic.

Because of its geographical position, at the meeting point of three major rifts – the Red Sea, the Gulf of Aden and the East African Rift – Djibouti also has a rich resource buried in its subsoil: Geothermal energy.

President Ismaïl Omar Guelleh has been quick to make this a priority. In 2013, he created the Office Djiboutien de Développement de l'Énergie Géothermique. According to studies carried out by the body, the country has more than 1.1 GW of geothermal resources underground. "The potential has been confirmed and exploration has identified several zones," says Gouled Mohamed Djama, Director of Energy at the Ministry of Energy and Natural Resources.

In particular, a power station is due to be built at Fialé Caldera, near Lake Assal, a volcanic area with chimneys, fumaroles and hot springs. Djama underlines the potential of this energy source, which does not depend on external factors such as wind or sun: "Geothermal energy can provide us with clean, constant energy. It has the potential to totally eliminate our dependence on thermal energy," he believes.

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