Santiago solar thermal energy

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The imposing 240-meter construction is one of the pillars of the country"s ambitious green energy program that began in 2019 and aims to completely replace fossil fuels by 2040.

The high solar radiation and salts extracted from what is the driest desert on the planet are the ingredients of a powerful energy cocktail to generate and store electricity.

The solar thermal Cerro Dominador, which Chileans compare to Sauron"s tower from The Lord of the Rings, has become a symbol of Chile"s energy revolution against climate change.

"A decade ago, no one would have imagined that more than a third of Chile"s energy would come from the sun and wind before 2030," the former Environment Minister of Chile Marcelo Mena says.

Today 35.4 per cent of the energy generated in Chile is wind and solar, and 37.2 per cent comes from water sources in the National Electric System (SEN), which covers the vast majority of demand.

"Very few countries in the world have been able to truly consolidate a renewable energy industry like Chile," says Marta Alonso, director for South America of Global Energy Services (GES), a global provider of services for the wind and solar industry.

Chile has begun to explore an alternative. Both Cerro Dominador and the Alba Project are powered by so-called solar salts, extracted from the Atacama Desert, composed of potassium nitrate and sodium nitrate.

"The case of the Alba Project is unique in the world. It is the only project that exists of this magnitude outside of a university," explains Diego Pardow, Chilean Minister of Energy.

Solar power in Chile is an increasingly important source of energy. Total installed photovoltaic (PV) capacity in Chile reached 8.36 GW in 2023.[1] Solar energy provided 19.9% of national electricity generation in Chile in 2023, compared to less than 0.1% in 2013.[2]

In October 2015 Chile"s Ministry of Energy announced its "Roadmap to 2050: A Sustainable and Inclusive Strategy", which planned for 19% of the country"s electricity to be from solar energy, 23% wind power, and 29% hydroelectric power.[3]

Because of its good solar resource several international companies have bid record low prices for solar thermal power plants in Chile, including the Copiap? Solar Project bid at $63/MWh by SolarReserve in 2017. If realized this would have been the lowest ever price for a CSP project in the world. Several CSP projects are under development in Chile, but in the absence of technology specific support policies Cerro Dominador is the

only one under construction, yet.

In June 2014, the 100-megawatt (MW) Amanecer Solar CAP, a photovoltaic power plant located near Copiap? in the Atacama Desert was inaugurated. It was developed by the company with the same name, Amanecer Solar CAP, and was the largest in Latin America at the time. It is capable of generating 270 gigawatt-hours (GWh) of electricity per year.[10][11]

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