



# Dora-II Geothermal Power Turkey



Working towards a clean, secure energy future for Turkey

*This project involves the construction of a geothermal power plant in western Turkey that harnesses heat from deep within the earth to generate clean, emissions-free geothermal energy for the national grid. This reduces Turkey's reliance on imported fossil fuel, improving energy security while reducing emissions and contributing to regional sustainable development.*



### The Context

Turkey's flourishing economy has sent its emissions soaring since 1990 with an energy supply dependant on fossil fuel imports. As of 2016, just 1.76% of Turkey's energy mix is geothermal, but the country has 17 geothermal sites with a potential total installed capacity of 710 MW that could help assure Turkey's national security and drive down emissions.

### The Project

Located in southwest Turkey's Aydin Province, Dora-II is a 9.5 MW capacity geothermal power plant that harnesses the Salavatli Geothermal Area, reducing air pollution, improving Turkey's energy security, and fostering regional development. The geothermal plant employs an Organic Ranking Cycle System to generate electricity; this is a binary cycle system, where fluid obtained from the geothermal well transmits its temperature to another fluid (pentane) with a cooler evaporation point. The organic gas propels turbines to generate electricity, and hot water produced by this process is re-injected into the geothermal wells, forming a closed cycle.

### The Benefits

Over two decades, Dora-II will mitigate 280,406 tonnes of CO<sub>2</sub> and make important contributions to regional and national development. As well as improving energy security, the power plant further develops Turkey's geothermal industry, while improving grid infrastructure and stability with new transmission lines. The project also contributes to regional vocational diversity by creating new job opportunities in an otherwise agrarian society. The project supports regional education too, funding supplies and the construction of a new building at a local school.

The Dora-II geothermal power plant is an important investment in the development of Turkey's geothermal industry, made possible by carbon financing without which it would not be fiscally viable



Gold Standard



**1**  
local school

receiving funding from the project for constructing a school building and donations for educational materials



**70,000**  
MWh

of renewable energy generated on average annually, improving the scale and supply of electricity in Turkey



**119**  
jobs

created in the plant's construction and operation, 22 of which are permanent, with 20 of these jobs filled by people from the local village



**40,000**  
tCO<sub>2</sub>e

mitigated on average annually by the project

For more information on the UN Sustainable Development Goals, please visit: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

Official name: Dora-II 9.5 MWe Geothermal Energy Project | Registry link: <https://registry.goldstandard.org/projects/details/790> | Registry ID: GS 445