

# KENYA - STEAM FOR PRODUCING ENERGY

## MENENGAI GEOTHERMAL DEVELOPMENT PROJECT



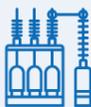
The Menengai project was designed to help Kenya meet its rapidly increasing energy demand while diversifying the national power mix to include a larger proportion of renewable sources. Given the significant geothermal potential of the country, the Government of Kenya sees this technology as key to reducing the country's dependence on fossil fuel-based technologies and hydro resources, which have been negatively affected by droughts over the past several years.

The project began with the high ambition to develop the Menengai geothermal steam field to produce sufficient steam for 400 MW of clean, renewable power. Upon implementation, however, feasibility studies determined that production from the field over its first phase would only be able to sustain approximately 150 MW gross installed capacity over a 25-year period. While less than the original capacity hoped for, the field's steam generation potential remains a sizable contribution to Kenya's national geothermal production.

The implementation of this baseload renewable project coincided with the creation of the Geothermal Development Corporation (GDC). The company aims to promote the rapid development of geothermal resources in Kenya through surface exploration and drilling in order to identify steam fields with sufficient capacity to feed power plants in exchange for payments. The project is therefore crucial not only to developing the country's huge geothermal potential but also to testing and proving the viability of GDC as a key partner that can help the Government of Kenya attract private investments. To date, three private sector bidders have been selected to build, own, and operate an aggregate capacity of 105 MW, some of which are receiving support through AfDB-CIF resources.

This clean energy project will help Kenya meet its mitigation objectives in line with commitments made under the country's Nationally Determined Contributions to the Paris Agreement. Kenya's NDC sets out an ambitious 30% reduction in greenhouse gas emissions by 2030 relative to the business-as-usual scenario of 143 million tons CO<sub>2</sub> eq. The analysis underlying the mitigation target of the NDC is based on work undertaken for the country's National Climate Change Action Plan. As of 2018, Menengai is the largest geothermal energy producer on the African continent and the ninth biggest worldwide.

As part of their corporate social responsibility (CSR) programme, the GDC has set up 10 giant boreholes, one of which is dedicated to the community. Water from the borehole is pumped into a four million-litre tank, and distributed to neighbouring households through a water kiosk.



Potential installed capacity: **150 MW**



Long-term GHG emissions avoided: **1,950,000 tons CO<sub>2</sub> eq. / year**

Long-term increase in renewable energy supply: **1,000 GWh per year**



Number of electricity connections supported by production potential: about **500,000 households** and **300,000 small businesses**



*“ We used to travel far to get water. Our children, especially girls, would even miss school as they had to allocate that time to look for water....but not anymore, thanks to the Menengai Geothermal Development Project ”*

Lucy Wanjiru  
Community member in Menengai

