

Facilitating geothermal field development through public-private partnerships in Menengai, Kenya

DEVELOPMENT CHALLENGE

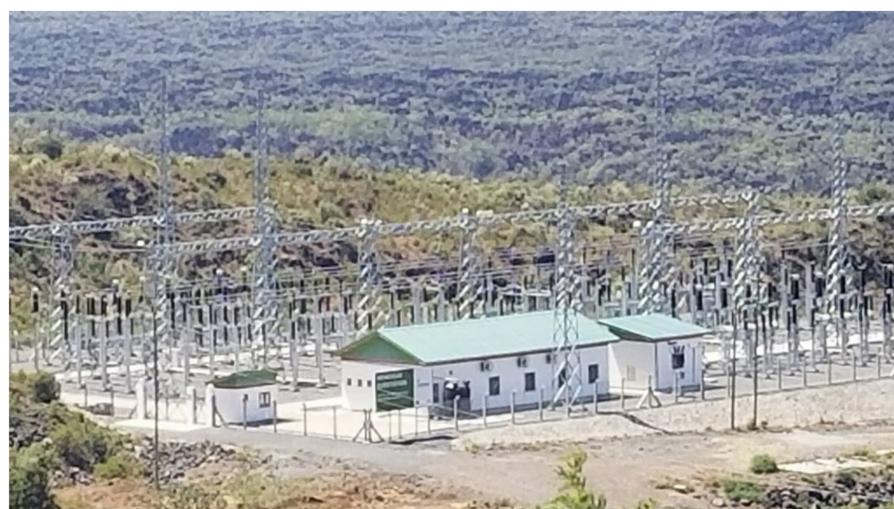
The core development challenge was to secure a reliable, sustainable and affordable power supply to meet current and future demand in Kenya, where energy demands are growing rapidly, and hydropower and fossil fuel thermal generation are increasingly unsustainable. To tackle this challenge, Kenya sought to increase production of geothermal energy, of which it has substantial resources. The Menengai field project was undertaken by the Geothermal Development Company (GDC), set up by the government to undertake exploration and sell steam to independent power producers (IPPs).



DELIVERY CHALLENGES AND HOW PRACTITIONERS RESPONDED

As a new public organization, GDC had limited financial and technical capacity to develop such a large-scale geothermal steam and power development activity. In order to address these limitations, the Government of Kenya sought support from development finance institutions to access both concessional finance and technical capacity building to develop the project. The project received support from the Scale-up Renewable Energy Program (SREP) of the Climate Investment Funds (CIF) channeled through the World Bank and African Development Bank as well co-financing of other development institutions.

Another delivery challenge facing the Menengai geothermal development is to *provide a reward-risk ratio sufficient to attract private geothermal developers*, due to perception of risk, concerns about the rate of return, and uncertainty regarding the production potential of the Menengai field. This challenge was addressed by the negotiation of a Partial Risk Guarantee, concessional financing to make the project more bankable, and GDC's advances in drilling and reservoir modeling studies, which provided greater certainty about the field's potential.



LESSONS FROM THE CASE STUDY

By 2017, two of the three selected IPPs had entered into agreements to build steam power plants. The GDC model of absorbing resource risks helped to overcome a barrier to private sector involvement. Ensuring low-cost financing was important to increase the attractiveness of the investment. Ultimately, an effective package of financial incentives and risk assurance was needed in order to attract private developers.

HOW THE CASE STUDY WAS USED

This project serves as a good example for countries or entities seeking to develop alternative power sources, particularly when power development is seen as financially risky, uncertain, or in need of hedges against risk to engage private capital.