



1 NZTA encouraging cycling. 2 Two-way cycle facility. 3 Testing the website on practitioners.

OLKARIA GEOTHERMAL POWER STATION

Jacobs for Kenya Electricity Generating Company

Project Location: Kenya



The Olkaria IV and Olkaria 1AU Geothermal Power Project was promoted and developed by the owner, Kenya Electricity Generating Co Ltd (KenGen) to provide relatively inexpensive sustainable and affordable electricity to the Kenyan grid. The grid had historically been dominated by hydroelectric resources supplemented by thermal (mainly diesel engine) generators. The hydro resources were characterised as having small reservoirs and hence were dependant on reliable rainfall patterns. Unfortunately weather patterns have been changing and reliance on unreliable rainfall placed undue pressure on the economy. The use of geothermal resources promised constant base load generation, unaffected by the weather, this being proven by the successful operation of the small Olkaria 1 plant (3 x 15MW commissioned in 1982), the later Olkaria II plant (3 x 35MW, last unit commissioned in 2010), and by the Independent Power Producer (IPP) owned Olkaria III binary plant first commissioned in 2002.

"We can now confirm that all the 280MW is running and stable on the grid. Indeed, we are very excited about this milestone. We not only see it as a score for KenGen, but also for Kenyans in general as it helps to further reduce the cost of power by displacing the expensive thermal fuel. At the same time, it will help to stabilise the country's power supply by reducing dependence on hydro, which is prone to weather variations. We have had below average inflow of water into our hydro dams and the commissioning of this unit is nothing short of a Christmas and New Year gift to the country" - KenGen Press Release - KenGen MD & CEO, Albert Mugo. December 2014, 2015

The Olkaria I and IV 280MW geothermal project is one of the key projects under the Kenya Energy Expansion Project (KEEP) being implemented by the Government of Kenya through its agencies and financed by various Development Financial Institutions. KenGen appointed Jacobs as the Project Manager and Owners Engineer on 8 February 2010, following an International competitive bidding process. Later that year, funding for the Project was received from JICA, EIB, KfW, IDA (World Bank), and AFD; with additional financing from KenGen and the Government of Kenya. The Project was conceived as two separate power stations each with two 70MW steam turbine-generators. The geothermal steamfields would be completely separate while the generating facilities would be linked by 220KV transmission lines and substations. The four contracts for the design and construction of the facilities were awarded between December 2011 and April 2012. Commissioning of the four generating units took place at various times through 2014, with the Taking Over Certificate for the last unit being issued on 1 January 2015.

Judging & Copyright Statement

This project is an entrant in the 2016 INNOVATE NZ Awards of Excellence competition. The winners will be celebrated at our Awards Gala Dinner on Saturday, 12th August 2017 in Taupo.

Images and text remain copyright of ACENZ and the consultant firm entering the project. Users are asked to give credit to the photographer where this is specified. ACENZ and INNOVATE NZ are trademarks of the Association of Consulting Engineers New Zealand.