

MBEYA COAL TO POWER PROJECT (MCPP)



PROJECT DESCRIPTION



This project is owned by [Kibo Mining PLC](#) and is located in south-western Tanzania, approximately 70 km northwest of the regional capital of Mbeya and immediately south of Lake Rukwa. The project entails the construction of a coal mine feeding a 300 MW mine to mouth modular coal-fired power plant to deliver electrical power to the Tanzanian national grid. The power plant capacity was determined to ensure a minimum life of mine of 25 years.

The orebody consists of a continuous stratified and inclined coal resource with a dip ranging between 19° and 24°. The 300 MW power plant requires a Run of Mine throughput of 104 ktpm with a life of mine average Calorific Value of at least 12.85 MJ/kg. The project has a probable coal reserve of 38.78 Mt with a life of mine average Calorific Value of 15 MJ/kg.

MINXCON INVOLVEMENT

Minxcon conducted a Concept Study, a Pre-Feasibility Study and a Definitive Feasibility Study for the design of the required coal mine. The execution of the project into the detailed engineering phase and commissioning phase will be coordinated by Minxcon as the lead consultant for the mining component.

A unique feature of the project area was the steep dipping nature of the coal seams. This required a unique and modified approach to the extraction of the coal deposit via surface miners. The best suited mining method for the project was modified terrace mining centralised around the extraction of coal with the use of surface miners and trucks for the hauling of coal. The inclination of the deposit made the use of draglines and conventional strip mining unpractical.

The cutting mechanism of the surface miner liberates the coal on a horizontal plane whereby the coal is extracted in horizontal slices with the added benefit of extracting thin seams. The cutting mechanism also decreases the coal fragment size reducing the necessity of a primary crusher. This resulted in reduced infrastructure required and a lower operating cost.

Another unique feature of the project was the ability to excavate all the material without resorting to drilling and blasting. A provision of 50% extra ripping is incorporated for materials with difficult to extremely difficult dig-ability classifications. The coal extraction with a surface miner and the omission of drilling and blasting activities increases the safety implications of the project. An additional benefit of reducing the requirement for drilling and blasting activities is lower operating costs and less infrastructure required.

Minxcon provided project critical information to the power plant feasibility study ensuring continued communication, information sharing, project coordination and integration throughout the duration of the project.