



KEY STATS

Customer: Cedar Energy Ltd

Number of Turbines: 1

Power: 3081 kW

Net Head: 120 m

Flow: 3200 l/s

Runner Dia: 31"

Speed: 600 rpm

SCOPE OF SUPPLY

Gilkes HCTI Twin Jet Turgo Impulse Turbine with associated pipework

Main Inlet Butterfly Valve (DN1000 PN16)

4345kVA, 6600v, 600rpm, 50Hz Synchronous Generator & Fly Wheel

Lube Oil Unit

Control & Switching Panel

110v DC Battery Panel

Neutral Earthing Panel

3.5 MVA, 6600v - 33000v Transformer

Governor

Hydraulic Control Module

Head Level Sensor

Installation & Commissioning

Mulosa Small Hydro Project

The Mulosa small hydro project in the Mulanje District of Southern Malawi was first identified by Cedar Energy Ltd in 2019. Cedar Energy was founded to fund the development, construction, and operation of small scale-hydro projects in Malawi.

Cedar Energy approached Gilkes for the supply of the M&E equipment for the project based on Gilkes experience and history in Africa. Having recently completed projects in Southern Africa we had the relevant know how and expertise to offer a package designed specifically for the project with consideration for the remote location and site characteristics.

Provided with the head and flow data from the client our engineering team selected a twin jet Turgo turbine as the most optimum solution for the scheme. This is based on many factors, including annual rain fall, site access, ease of operation and maintenance and the condition of the water. Rivers in Africa tend to be heavily silt laden and the Turgo is operational on silt laden water over long periods with minimum wear making it ideally suited for many of the small hydro projects in Africa.

CASE STUDY

Mulosa River, Mulanje District, Malawi

Grid Connection

Having worked with Escom (Power & Distribution Company of Malawi) on previous projects in Malawi, Gilkes engineers had a good understanding of their requirements, working closely with the transmission team to commission the grid connection. The strong relationship between both companies provided a clear understanding of how each other work. The site is purely grid connected providing much needed, reliable power to the main grid.

Although the simplicity of the Turgo impulse operation translates to minimal service and maintenance requirements, making it particularly suited to remote locations, the Mulosa scheme is a manned site. Gilkes engineers trained the site operators during the commissioning phase of the project and can offer remote support as and when required.

Delivering during a global pandemic

From order placement the project had a tight delivery time of 6 months to allow power generation to start at the beginning of the rainy season. The tight lead time was further tested with the arrival of the Global Covid19 pandemic. In the face of a global pandemic, and against multiple logistical complications involving delayed deliveries, both the civil and electrical teams were able to coordinate both time line and construction.

The whole project team, including the Gilkes engineers willingly stayed on the project site through the duration of the install and commissioning stages to ensuring that all working hours were spent in delivery of the project, rather than the commuting to and from the project site. The 3MW Mulosa River project was brought to successful commissioning in February 2021.



"I would like to write to you and extend both my personal and professional thanks to the Gilkes Team for the tremendous effort made in bringing the 3MW Muloza Project to successful commissioning on Wednesday the 24th of February 2021.

*Cedar Energy hopes to continue to develop further small hydro electric plants across Malawi and will return to Gilkes knowing the quality of relationship and support we have received." **James Roditi, Director, Cedar Energy Ltd***

CASE STUDY

Mulosa River, Mulanje Region, Malawi

