

## CASE STUDY

# Kupinga, Zimbabwe



### KEY STATISTICS

**Customer:** KRE  
**Turbine Type:** HCTI Twin Jet Turgo  
**Number of Turbines:** 1  
**Power (kW):** 1602  
**Net Head:** 142m  
**Flow:** 1543 l/s  
**Runner Dia:** 25"  
**Speed:** 750 rpm

### SCOPE OF SUPPLY

Gilkes HCTI Twin Jet Turgo Impulse Turbine  
Synchronous Generator including Lube Oil pack and Flywheel  
Set of Inlet Pipework  
Main Inlet Valve & Double Flanged Butterfly Valve  
Hydraulic Actuators  
Control & Switchgear Panel  
Transformer  
Governor  
110v DC Battery Panel  
Installation & Commissioning

Kupinga hydropower station was opened by Zimbabwe Finance & Economic Minister, Mr Patrick Chinamasa in September 2017. The project, commissioned by Old Mutual with its partner Kupinga Renewable Energy has a capacity of 1.6MW, powered by a Gilkes Twin Jet Turgo turbine.

The project is the 9th Turbine installed by Gilkes in Zimbabwe in the last 10 years, providing a total of 30MW of power. The project was an ideal fit for the Turgo Impulse turbine, designed by Gilkes in 1919 to operate at a higher speed and with a higher efficiency across a broad flow range. The Turgo is operational on silt laden water over long periods with minimum wear making it suitable for many of the projects in Zimbabwe.

The Kupinga site had an existing scheme, originally powered by a 1960's Gilkes Turgo. Updating the scheme with the new turbine package has increased the power output by 1,173kW due to the increase in flow availability.

The power station provides a third of the power to Chipinge town and comes at a time when the Government are intensifying efforts to boost electricity generation, providing access to reliable power supply throughout the country unlocking opportunities for rural communities through job creation and empowerment of local people. Although the system is grid connected, it was configured to have the ability to run in island mode if required.

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Having supplied a total of 30 turbines in the country, Gilkes continues a long relationship with its customers in Zimbabwe and a commitment to working in Africa; installing hydro in remote rural areas.

**Andy Eaton, Head of Sales Africa at Gilkes said** " It was a pleasure to work with Old Mutual and everyone concerned with the Kupinga Project. The installation and commissioning team did a fantastic job in completing the project much quicker than anticipated, a testament to the overall organisation and planning of the project. "We look forward to working with them again in the future and see them as ideal partners to work alongside Gilkes and help us continue our long running history of installing small hydropower turbines. "



Shop Floor Assembly



Branchpipe



Local Installation Team



Intake on River (add name???)



Powerhouse & Transmission Lines