

CASE STUDY

PUNGWE B, Zimbabwe, Africa



KEY STATISTICS

Customer: Nyangani Renewable Energy (PVT) Ltd

Net Head: 176 metres

Flow: 3000 litres/sec

Turbine type: Gilkes HCTI Twin Jet Turgo

Number of Turbines: 4

Power (kW): 4204 (Each Turbine)

Dia: 28"

Date of Commissioning: December 2014

Speed: 750rpm

Scope of Supply:

4 x 28" Twin Jet Turgo impulse turbines fitted with hydraulic actuators.

Set of inlet pipework up to the flange of the main inlet valve.

Main inlet valve, double flanged 900mm butterfly valve, weight to close hydraulic actuator to open. Inc bypass system.

4800Kva Synchronous Generator

lube oil unit

Control panel

Hydraulic control module - Head level sensor

Installation & Commissioning

A strong relationship between NRE and Gilkes, provides the basis of the Pungwe B project, following on from the success of the Pungwe A and Duru projects. Although the order was received in the summer months of 2013, the initial preliminary designs started in the spring. Careful front end engineering at the sales stage ensured the project had a good start from the very beginning. A dedicated team set out to have the scheme protection and grid connection arrangements agreed before an order was placed. Great attention to detail gave the project a magnificent start, which it needed due to tight timescales involved.

A project review meeting ensured all departments within Gilkes had an idea of the complexity and involvement required within the project. A dedicated team was set up, with a project engineer, electrical engineer, and an installation engineer all allocated specific roles and given areas of responsibility. A constant communication path between the client and Gilkes, was set up to give everyone involved within the project clear visions on the progress made and work conducted.

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At the stage of factory testing, the client was invited to witness the generator testing. This provided the client with an insight into how the generator worked, and gave them a good basis for the maintenance procedures required. At this stage a meeting confirmed strategic spares needed for the planned maintenance schedule.

The installation team led by an experienced engineer who had extensive knowledge of the area, arrived at site upon confirmation of readiness from the client. Due to the remoteness of the site, accommodation was provided on site, accompanied by welfare facilities. The site teams had a rotation process to ensure a presence on site throughout installation and commissioning.

The commissioning team set out to have three of the four machines commissioned prior to the Christmas break. Due to hard work and organisation the project exceeded expectation, having all four machines commissioned.

'I am just back from a week in Zimbabwe and was very impressed by what I saw. It was especially exciting to see all 4 machines operational and the powerhouse looking finished and tidy. Many thanks to you all for all the hard work in getting to the finishing post ahead of time. I hope you have all found it as interesting a job as we all have and that you have enjoyed doing it.'

Sebastian Hobhouse - Chief Executive - PGI Group Ltd



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