



# Ngonye Falls Hydroelectric Scheme

## Feasibility Study of run-of-river hydroelectric scheme



The Ngonye Falls are located on the Zambezi River close to the township of Sioma some 345 km upstream of the Victoria Falls and 120 km upstream of Sesheke in the Western Province of Zambia. The Zambezi passes over the main Ngonye Falls followed by a series of rapids in a narrow gorge, falling through a gross head of some 25 m over a river length of 6 km.

The Western Power Company Ltd., an independent power producer in Zambia, engaged our team to undertake a feasibility study for a hydroelectric scheme at Ngonye Falls. The scheme comprises a run-of-river scheme with a gated barrage within the left main channel, diversion intake, headrace canal, forebay, power station and tailrace channel. The scheme will provide energy and power to the national grid through a new 110 km, 220 kV transmission line routed to Sesheke Substation.

PROJECT	PROJECT TYPE	LOCATION	CLIENT	TIME PERIOD	KEY NUMBERS
Ngonye Falls Hydroelectric Scheme	Feasibility Study of run-of-river hydroelectric scheme	Western Province, Zambia	Western Power Company	2012 - 2015	Capacity: 40 – 60 MW   Min/Max Head: 10/22.5 m

## SCOPE OF WORK

The Multiconsult hydropower team are undertaking a feasibility study to assess the hydropower potential at the Ngonye Falls site including geological and geotechnical studies, hydrological analyses and hydrodynamic modelling, power and energy studies, developing a viable scheme layout and preparing associated cost estimates. Key challenges have included developing a viable scheme, taking account of seasonal variations in flow, water levels and available head as well as the flow split between two main channels and several subsidiary channels upstream of the site.

## OUR SERVICES

- Feasibility study
- Preparation of site investigation and survey tender documents
- Supervision of site investigation works
- Geological studies
- Transmission line studies

## DISCIPLINES

- Structural/Hydrology/Hydraulic/Civil Engineering
- Electro-Mechanical Engineering
- Transmission Line Engineering
- Geology/Geotechnical Engineering



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