



Dal Hydropower project

Tender Design



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The Dal Hydropower Project is located on the Great Nile in Northern Sudan, immediately upstream of Lake Nubia / Lake Nasser formed by Aswan High Dam in Egypt. The impounding structures comprise concrete-faced rockfill dam structures up to 22 m in height on the left and right sides of the river channel, radial gated spillways and stilling basins on both sides of a mid-river island, and a combined power intake and surface powerhouse structure. The intakes are equipped with low-level gated sediment flushing sluices. The powerhouse accommodates 8 nr. 81 MW Kaplan turbine generating units.

PROJECT

Dal Hydropower Project

PROJECT TYPE

Base-load operation hydropower scheme, capable of peaking operation

LOCATION

River Nile, Northern Sudan

CLIENT

Dams Implementation Unit, Sudan

TIME PERIOD

2012 -

KEY NUMBERS

Installed Capacity: 648 MW | Head: 19.8 m

OUR SERVICES

- Civil, Mechanical and Electrical Tender Design
- Preparation of Tender Documents – in two contract packages comprising Civil and Hydro-mechanical Works, and Electrical and Mechanical Works under FIDIC conditions of contract, including invitation and instructions to tenderers, specifications, tender drawings, bills of quantities, technical schedules and schedules of prices
- Engineer's cost estimate
- Hydraulic model studies – technical supervision and guidance of physical and numerical hydraulic model testing of sediment flushing facilities, power intakes, draft tubes, tailrace and spillways

The same hydropower team was responsible for establishing the viability of the project at prefeasibility stage. This included: assessing potential physical, technical, environmental and social constraints to project development; identifying and developing feasible scheme layouts; and establishing key parameters for the feasibility study, including the range of dam heights and installed capacities.

At feasibility stage, the team further developed the preferred option to outline design level, which involved studies, investigations and engineering design including;

hydrological studies; topographic survey; geological and geophysical site investigation; optimisation of project layout; environmental impact assessment; social impact assessment and resettlement planning; cost estimates; construction planning; reservoir operation and power/energy output studies; economic analyses and procurement of hydraulic model studies.

SCOPE OF WORK

The team is currently providing consultancy services to complete the civil, mechanical and electrical tender design of Dal hydropower project. This includes an elaboration and refinement of the designs prepared by the same hydropower team during the prefeasibility and feasibility stages of the project, and the preparation of tender documents.



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