



Super Budhigandaki Hydroelectric Project (34.93 MW)



Government of Nepal
Ministry of Energy, Water Resources and Irrigation
Department of Electricity Development



Background

The Super BudhiGandaki project is a Run of River Scheme Hydropower designed to harness the potential of Budhiganadki river. The project is in Gorkha district with an installed capacity of 34.93 MW and total annual energy generation of 182.88 GWh. The project area is not connected to the road except for the trail road. The nearest road network to the project area is Machhakhola (via Arughat Bazar) in Gorkha district. The journey from Kathmandu-Dhading-Benighat-Arughat Bazar is about 127 km. The project site can be reached from Arughat Bazar via a 30 km earthen road to Machhakhola, and about 3 days walk to Lho Village (project site).



Sector:
Hydropower



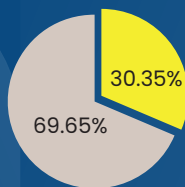
Location:
Chum Nubri Rural Municipality,
Gorkha district



Land Required:
11.75 hectares
(private: 3.5 ha,
conservation area: 8.07 ha)

Salient Feature:

- Scheme: Run of River (RoR)
- Installed Capacity: 34.93 MW
- Annual Energy: 182.88 GWh



■ Wet Energy: 127.36 GWh
■ Dry Energy: 55.52 GWh

Features/Components

- Catchment area at intake site: 365.44 km²
- Net head: 355.50 m
- Design Discharge: 11.4 m³/s
- Headworks arrangement: boulder rip-rap type wier (crest elevation: 3021 masl), 2 bays of under sluice 3m x 2m vertical gates, side intake with 2 openings of 6m x 1.5m
- Design flood (1 in 100 years): 117.7 m³/s
- Approach culvert: 1.7m x 1.7m rectangular section of length 32m
- Settling basin: surface, hopper bottom, 2 bays of 64m x 8m each
- Headrace tunnel: Pressurized, D-shaped, 3.2m diameter and length 4738m, 360 meters long Adit tunnel
- Surge Shaft: Restricted orifice type, 6m diameter and 40m high
- Pressure shaft: 2m diameter, 526 m long, 10-37mm thick
- Powerhouse: underground, 97m x 15.2m x 27m
- Turbine: 3 units of vertical Axis Pelton turbine of rated head 355.50m and rated discharge 3.8 m³/s
- 132 kV transmission line spanning 16.3 km + 51.1 km (sharing with Tom Dogar) and connecting to the Gumda substation

Project Outcome



Increased electricity generation capacity



Contribution to sustainable development and environmental conservation



Enhanced regional connectivity and access to remote areas



Water resource management

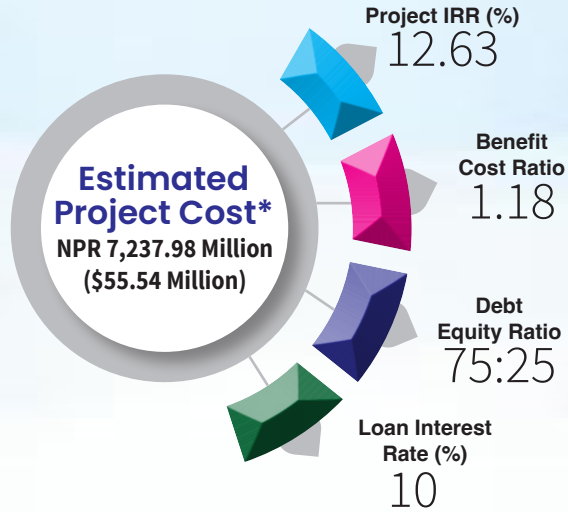


Revenue generation for central, provincial, and local governments



Job creation during construction and operation

Financial Indicators



Note: 1 USD = NPR 130.31

*Based on draft report of January 2024

Project Implementation Modality



Public Private Partnership
(PPP model)

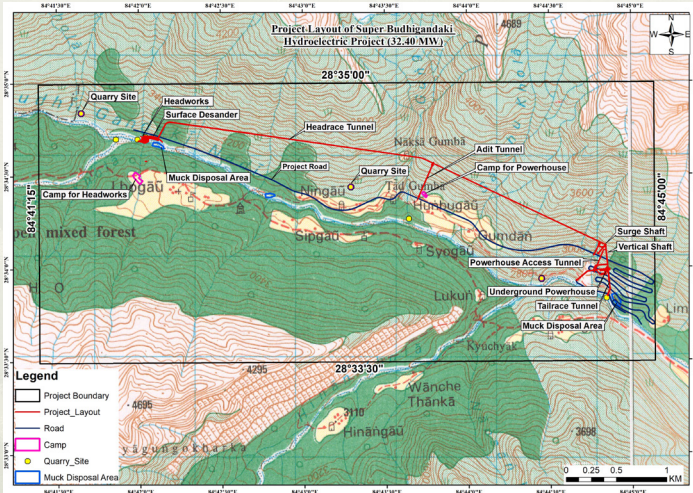
Build Own
Operate Transfer
(**BOOT**)

Project Implementation Timeline



Additional Information

Currently, the project area is accessible only through a trail road, with the nearest road network situated at Machhakhola in the Gorkha district. However, construction activities are underway to improve accessibility. Nepal Army is undertaking the construction of an access road to the Nepal-China border connecting both the powerhouse and headworks area of the project.



Pic 1: Project Layout

Relevant Agencies

- Ministry of Energy, Water Resources and Irrigation (MoEWRI)
- Department of Electricity Development

About the Agency

Department of Electricity Development (DOED), Government of Nepal

The Department of Electricity Development (DOED), part of Nepal's Ministry of Energy, Water Resources, and Irrigation, envisions facilitating efficient and sustainable hydropower projects to meet the nation's growing energy demands, thereby contributing to economic growth and energy security. Its mission involves promoting private sector involvement and local investment in large, medium, and small hydropower projects, fostering an environment conducive to hydropower development, and ensuring efficient water resource utilization. The agency's objectives include incentivizing private sector participation, developing implementable hydropower projects to address energy needs, conducting feasibility studies and environmental assessments, and enhancing the overall capacity and efficiency of Nepal's electricity sector. The DOED aims to achieve these goals by promoting PPPs, adhering to environmental and social standards, and ensuring equitable electricity distribution.

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