

Tom Dogar (Budhigandaki) Hydroelectric Project (40.20 MW)



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



Background

The Tom Dogar (Budhigandaki) Hydroelectric Project is a run-of-the-river (RoR) scheme Hydropower Project. The proposed project is in Gorkha district with an installed capacity of 40.20 MW and annual energy generation of 233.316 GWh. The closest road network to the project area is in Dovan bazaar, accessible via Arughat Bazar, Gorkha district which is 127 km away from Kathmandu. Currently, the project site is accessible via foot trail from Dovan bazaar.



Sector:
Hydropower



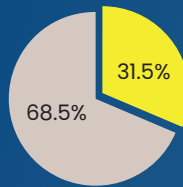
Location:
Tsum Nubri Rural
Municipality, Gorkha District



Land Required:
14.88 hectares

Salient Feature:

- Scheme: Run-of-the-River (RoR)
- Power generation: 40.20 MW
- Total Energy: 233.32 GWh



Wet Energy: 159.83 GWh
Dry Energy: 73.49 GWh

Features/ Components

- Catchment area at intake site: 2109.56 km²
- Net head: 87.03 m
- Design Discharge: 53.30 m³/s
- Headworks arrangement: 35m long, 6.5m high concrete gravity weir (crest elevation: 1922 masl), 2 bays of under sluice 4m x 4m vertical gates, side intake with 6 openings of 3.35m x 3m
- Design flood (1 in 100 years): 574.9 m³/s
- Settling basin: surface, hopper bottom, 3 bays of 100m x 19m each
- Headrace: 130m long, 4.3m diameter, steel pipe followed by pressurized, D-shaped tunnel of 5.8m diameter and length 1825m
- Surge Shaft: simple cylindrical type, 10m diameter and 31.7m high
- Pressure shaft: 4m diameter, 130m long, 10-31mm thick
- Powerhouse: underground, 38m x 15m x 23.5m
- Turbine: 3 units of vertical axis Francis turbine of rated head 87.03m and rated discharge 17.77 m³/s
- 132 kV transmission line spanning 51.1 km 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

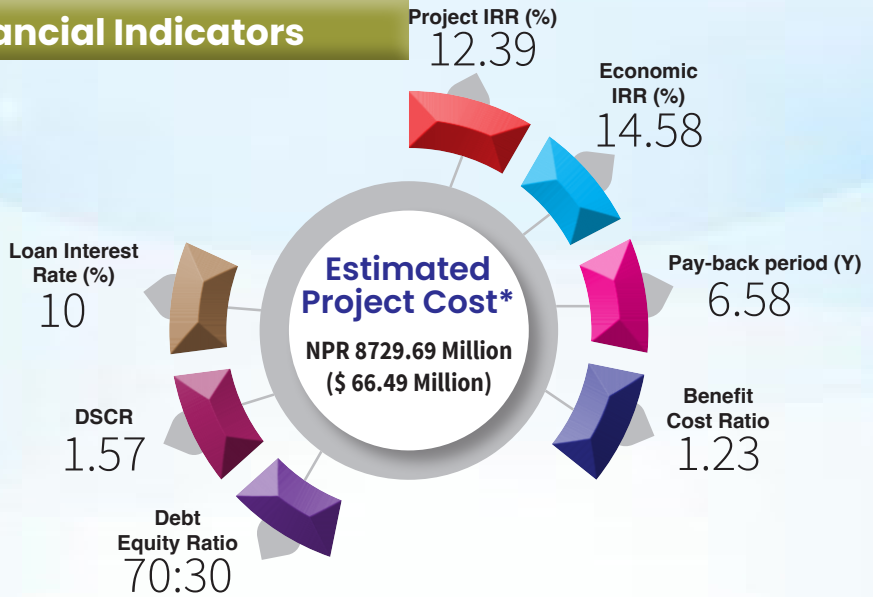


Revenue generation for central, provincial, and local governments



Job creation during construction and operation

Financial Indicators



Note: 1 USD = NPR 131.30

*Based on draft report of March 2024

Project Implementation Modality



Public Private Partnership
(PPP model)

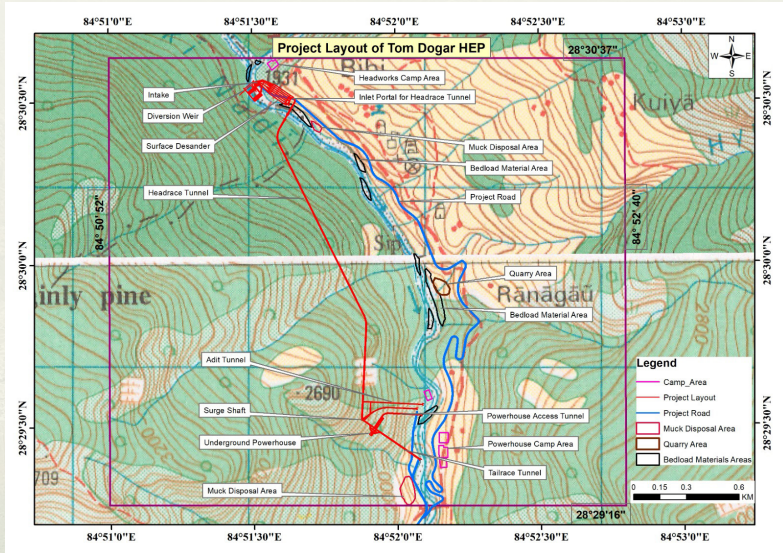
Build Own Operate Transfer
(BOOT)

Project Implementation Timeline



Additional Information

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 (DoED)

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.

Website: <http://www.doed.gov.np/>
Email: info@doed.gov.np
Tel: +977-1-4534119

QR