

Upper Chameliya Hydropower Project (53.85 MW)



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



Background

Upper Chameliya Hydropower Project is Run of the River (RoR) Scheme Hydropower designed to harness electricity from Chameliya River. The proposed project is in Darchula District with the installed capacity of 53.85 MW and annual energy generation of 319.21 GWh. The Project site can be accessed from Dhangadi via a 200 km road with asphalt pavement leading to Gokuleshwar. From Gokuleshwar, existing roadhead for the project site (Makarigad) is connected by a 42 km fair weather road. From Makarigad, the project site is about 30 km on foot. About 29 km of access road is proposed to be constructed from Makarigad.



Sector
Hydropower



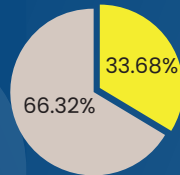
Location
Api Himal Rural Municipality
Sudurpaschim Province



Land Required
21.15 hectares

Salient Feature:

- Run of River type project
- Installed Capacity: 53.85 MW
- Annual energy: 319.21 GWh



Wet Energy: 211.71 GWh
Dry Energy: 107.50 GWh

Features/ Components

- Catchment area at intake site: 193.15 km²
- Net Head: 881.81 m
- Design Discharge: 7.12 m³/s
- Headworks arrangement: 30m long, 7m high concrete gravity weir (crest elevation: 2925 masl), 2 number of under sluice 2.4m x 2m vertical gates, side intake with 2 openings of 3.6m x 2.65m
- Design flood (1 in 100 years): 321 m³/s
- Approach Canal: 2.2m x 2.6m rectangular section, 28m length
- Settling basin: surface, hopper bottom, single-bay of 92m x 18m
- Headrace: 222m long, 1.95m diameter, steel pipe followed by pressurized, D-shaped tunnel of 3m diameter and length 5588 m, with 3m diameter, 350m long adit
- Surge Shaft: restricted orifice type, 6m diameter and 24.5m high
- Penstock/Pressure shaft: 1.5m diameter, 1218m long penstock pipe followed by 1.5m diameter 654m long pressure shaft, 10-39mm thick
- Powerhouse: surface, 40m x 15.24m x 23.53m
- Turbine: 2 units of vertical axis Pelton turbine of rated head 881.81m and rated discharge 3.56 m³/s
- 132 kV transmission line spanning 32 km and connecting to the Balanch 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

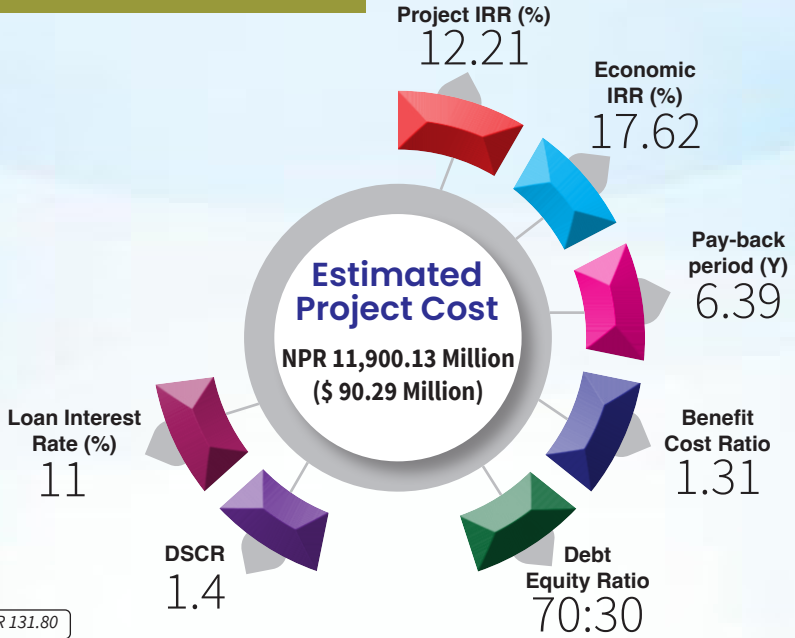


Revenue generation for central, provincial, and local governments



Job creation during construction and operation

Financial Indicators



Note: 1 USD = NPR 131.80

*Based on final report of October 2023

Project Implementation Modality



Public Private Partnership
(PPP model)

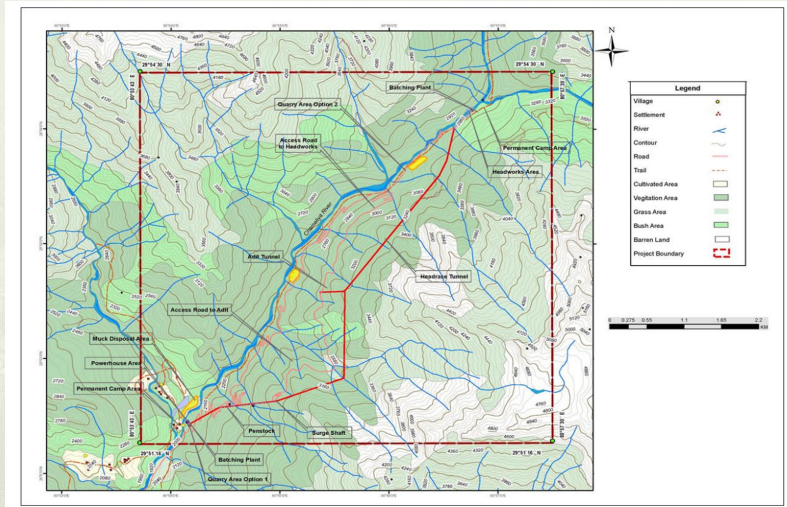
Build Own Operate Transfer
(BOOT)

Project Implementation Timeline



Additional Information

Currently, the project site is not accessible by road. Out of 29 km access road to be constructed for the project, 11.823 km access road runs from Makarigad to powerhouse. It then connects the powerhouse area to headworks site via 11.348 km road, and an additional 5.868 km of road branches out to the surge tank and adit area.



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

