

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

Birahi Ganga Hydro Electric Project (BGHEP) is a “greenfield” 3 x 2.4MW run-of-the-river hydroelectric project proposed for development in Chamoli District in the state of Uttarakhand (formerly Uttaranchal)¹ in India. The proposed project site is located near Birahi Village on National Highway 58, about 200 kilometers from Rishikesh. The BGHEP will utilize the waters of Birahi Ganga, a tributary of the Alaknanda River, to generate electricity which will be exported to the integrated single Indian grid at 66 kV via the Chamoli sub-station, located approximately 9.1 km from the project site.

The project will have a design head of 54.50m, and a design discharge of 17.435 cumecs (m³/sec) in penstock and 5.81 cumecs in each branch pipe. A boulder type weir of approximately 52m will be constructed across the river, on which three (3) 2400 kW capacity horizontal francis turbines will be sited that will generate approximately 39.78GWh of electricity (net) per annum. The power house is proposed to be sited on the north-east bank of the Birahi Ganga. The catchment under the project zone is 300 km² and the catchment area of the diversion site is 261 km². The annual rainfall registered in the area is 1359.4 mm/year.

The Uttarakhand Power Corporation Limited (UPCL) is a generation agency of Uttarakhand, which is connected to the integrated single Indian grid. The BGHEP has signed a Power Purchase Agreement with UPCL for the sale and transmission of the power generated to the northern regional grid in February 2003. Later, on November 30, 2010, the BGHEP signed a new PPA with the UPCL to cover the sale and transmission of power generated from the 7.2MW project.

Contribution to Sustainable Development

The region surrounding the proposed project site is one of the most economically underdeveloped areas in India. The BGHEP will contribute strongly to the sustainable development of the region and surrounding areas in the following ways:

- The electricity to be generated displaces grid-sourced electricity that is dominated by non-renewable fossil fuel resources.
- The generation of electricity by the project will not result in the emission of greenhouse gases to the atmosphere.
- The project will result in minimal disruption to the local environment during and after construction as it is a run-of-river hydro scheme that does not require the building of a reservoir.
- The project will not compromise access to the river resources by downstream river users, as it is a run-of-river scheme which will not alter natural flows.
- The project activity is not expected to impact on native fish migration patterns, as no significant change in the velocities of water currents is expected and hence there will be no change in the ambient conditions for aquatic fauna. Additionally, at the time of migration during the summer months, river flows are high making negotiation of weirs simple. This preserves fish resources for upstream and downstream users, as well as for future populations.
- Power shortages are common in the area surrounding the project as the current system is unable to meet the load requirements, particularly in the winter season when the power requirements of the region increase appreciably. As the generated power feeds into the nearest substation, the project will increase the availability and reliability of power supply to the villages connected to the grid through this substation.
- Local villages partially depend on firewood for their daily energy needs, which can lead to adverse ecological impacts, such as forest degradation, soil erosion and reduction in soil

¹ The Uttaranchal Alteration of Name Bill, 2006 enacted by Parliament in the fifty-seventh year of Republic of India

fertility. Increased availability and reliability of power supply from this project to the villages will reduce the need for firewood.

- The project developer proposes to undertake plantation forestry in the area to enhance the area's environmental, social and economic development further.
- The development of the project will improve access to the area through the construction of new roads.
- The project will create local employment, intensively in the construction phase and on continuing basis to a lesser extent during the operation of the plant.

A.2. Location of project activity

A.2.1. Host Party

India

A.2.2. Region/State/Province etc.

Region : Northern Region of India (Lower Himalayas)
 State : Uttarakhand
 Province (District) : Chamoli

A.2.3. City/Town/Community etc.

City / District : Chamoli
 Community (Village) : Birahi

A.2.4. Physical/Geographical location

The proposed location of the project activity is in the Birahi Village in the Chamoli district of Uttarakhand (Figure A1).

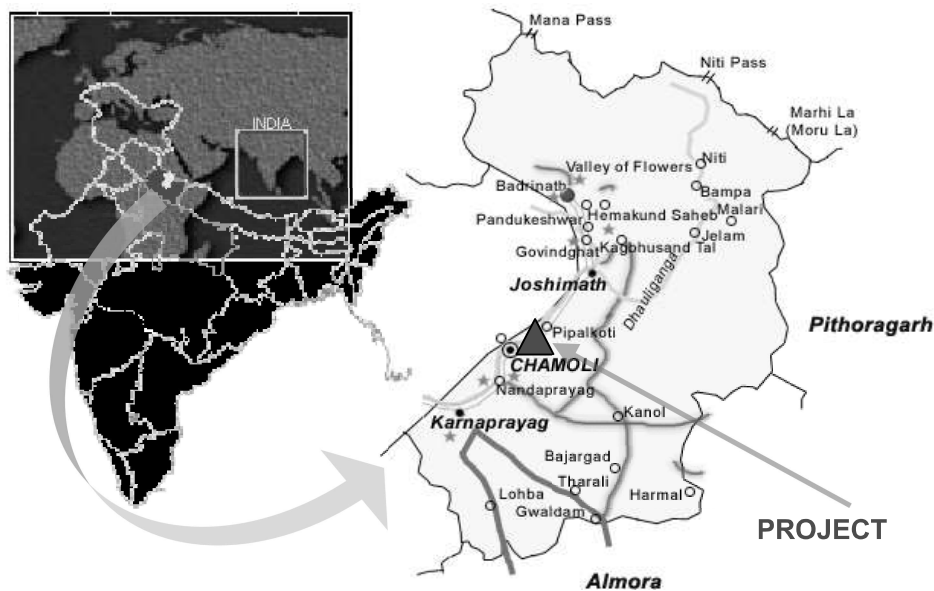


Figure A1: Location Map of the Project

The project site is located on the river Birahi approximately 2km eastward of the confluence of the Alaknanda and Birahi river(s), about 200 km from Rishikesh on National Highway 58. The project site is upstream (eastwardly) of Birahi village, which is 6 km from Chamoli town. The approach road to the project site starts from the bridge built on the Birahi River just at the confluence of the two rivers. The road is about 10 feet wide and is not reliable due to bad maintenance.

Geographical coordinates of Chamoli the nearest major town: