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**Location** Alaknanda River, Himalaya

**Type of Project** Initial assessment

**Client** DHI India

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### **Description**

A study of the proposed Alakananda Hydropower Project at Badrinath was conducted for GMR Energy Limited by DHI India and DHI Denmark. The main objective of the study was to compute and analyse the availability of water resources for the purpose of development of a run-off river hydropower scheme on the Alakananda River.

Being a Himalayan river a significant proportion of the flow in the Alakananda River is origin from snow and glacier melt, and the river carries a high sediment load.

The scope of work includes:

- Hydrological (rainfall-runoff) modelling including the snow-melt runoff component based. With almost no storage the feasibility of the hydropower scheme depends on a stable run-off of melt water. It is feared that global warming will reduce the size of the Himalayan glaciers hence also climate scenarios were modelled.
- A siltation study was carried out. With a high sediment load and almost no storage the reservoir will fill up rapidly, hence the scope of the modelling was to investigate the ability of the scheme to pass the sediment supplied from upstream to the downstream reach through proper operation of the bottom outlets.

In addition to the above DHI India investigated various watershed protection options and risk of landslide.