

**Alternative Studies of Alignment with the respect To  
Kasol Hydro Power Project (5.00MW)**

Kasol Small Hydro Power project (SHEP) has been proposed to be developed with the best combination of discharge and head. The project has been proposed on the right bank of the Grahan Nallah. Reconnaissance survey was carried out on the left bank also but following disadvantages were noted on the Left Bank:-

1. Topography of the left bank is not suitable for the water conduction system. Slopes are fragile and unstable for construction of open channel.
2. Head race channel, if constructed on the left bank, shall be much longer due to the topographic setup of the project area.
3. On the left bank, alignment of the power house was coming on a very steeply inclined slope of the hill and geology of the powerhouse itself was not very good.
4. With comparative locations of Forebay & Powerhouse, the length of the water conductor would increase at least 1.8 times the length of the water conducting system on the Right Bank, thus implying additional cost of construction.
5. Topographic set-up on the right bank of the setup permits construction of channels and Forebay for conveyance of water. The length of the channel works out to be 0.9km up to the proposed forebay location. The quality of rocks on which the channel would be laid appears to be sound with minimum number of geological surprise.
6. Adequate space on the right bank is available immediately downstream of the proposed diversion weir location for sitting the intake, the desilting tank and a very good location is available for construction of inlet & outlet portals of the headrace tunnel.

Survey was carried out on the right bank and two alternatives other than proposed alignment was noted :-

**ALTERNATE-1**

This involves placing of diversion structure on the right bank of the stream at an EL  $\pm$  1810mtr. Then the water will be conveyed through tunnel around 2000mtr. In the length up to Forebay. A surface penstock and a surface powerhouse has been proposed at an EL  $\pm$  1605mtr.

For Kasol Hydro Project

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### **Feature Considered**

- 1) All project compartments are laid on the right bank of Grahan Nallah.
- 2) Total forest land required is 2.96hec.
- 3) Total trees \_\_\_\_\_ & \_\_\_\_\_ saplings are involved in this alignment.

### **ALTERNATE 2-**

This involves placing of diversion structure on the right bank of stream at an EL  $\pm$  1810mtr. Then the water will be conveyed through an open channel of around 2200mtr. In the length upto Forebay. A surface penstock and a surface Powerhouse has been proposed at EL $\pm$  1946mtr.

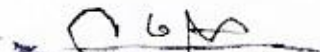
### **Feature Considered**

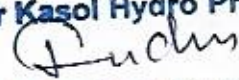
- i) All project components are laid on the right bank of Grahan Nallah.
- ii) Total forest land required is 2.15hect.
- iii) Total trees \_\_\_\_\_ & \_\_\_\_\_ saplings are involved in this alignment.

**In the view of above, Alternate 1 is suitable due to the following reasons-**

- a) The entire alignment on the right bank.
- b) Forest land required to the tune of 1.49 hect.
- c) Minimum No. of trees is coming under the whole scheme.

**Keeping in view the above alternatives, the Alternate-1 is most suitable and environment friendly and has to be finally adopted.**

  
Forest Range Officer  
Kasol Forest Range

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Authorised Signatory