

04.03.2019

Report on completion of survey and Investigation works

SURVEY PERMISSION LETTER: Attached

NAME OF THE PROJECT: 3x6.6 MW Keezharkuthu Small Hydro Electric Project.

Introduction: M/S Keezharkuthu Power Pvt Ltd. has proposed to set-up a mini hydel scheme of 3x6.6 MW capacity across the river Kambar, a tributary of river Kaliyar in Muvathupuzha basin. The three rivers viz, Kothamangala river or Kothayaar, Kaliyar and Thodupuzha Aaru which merge to form a single river named as Muvattupuzha river.

Topographical survey : Topographical survey for formulating the small hydroelectric project have been carried out after getting the permission for survey from the Forest Dept. for intake, water conductor system and power house. The contour map and block level plans have been prepared for formulating the layout and fixing the main components of the scheme.

The survey have also been carried out along the river course to ascertain the presence of agriculture land or any other permanent structure coming within the area and also to ascertain the ground levels of the land.

The proposed project: The development of mini hydel across the Kambar stream of river Kaliyar comprises of construction of a small diversion weir of 5m height across the stream, using 460 m available gross head, carrying the water through tunnel, buried or encased steel pipe (penstock) to power house to generate 19.8 MW electric power. The project is conceived as a run of the river project and is proposed to use the gross head of 460 m. The scheme is using seasonal monsoon discharge of the river.

Weir :

Latitude : 9° 54' 37" N

Longitude: 76° 52' 58" E

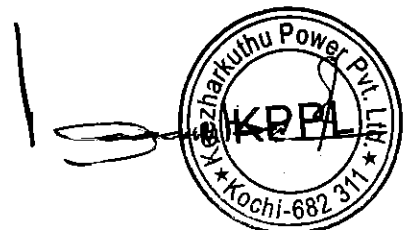
Power house

Latitude : 9° 53' 19" N

Longitude: 76° 52' 53" E

Water conductor System: Tunnel & Penstock: 1600 & 1400m (approx.) respectively.

Area calculation and all components coordinates: We have enclosed the complete co-ordinates for each component of the power plant



Property Survey: No displacement of village/ local population in the project area is involved due to project construction. The land identification for the project area is completed,

Survey Investigation: We have enclosed our observations.

Geological observations of the area during the survey: We have enclosed our observations.

Ecological observations during survey: We have enclosed our observations.

Compensatory Afforestation Land: Non-forest land adjacent to the existing RF Area near Kaithapara is being identified which will be suitable to the Forest Dept.

We hereby also gives undertaking to bear the cost of raising and maintenance of compensatory afforestation as well as Cost of Protection and Regeneration of safety zone etc. As per norms of "Forest Conservation Act – 1980 and its amendment" and the scheme prepared by Department of Forest, Govt. of Kerala in respect of diversion of forest land required for construction of 19.8 MW Keezharkuthu Power Private Limited in Idukki District of Kerala

Conclusion and Recommendation:

1. It is concluded that the proposed weir construction activities and tunnel, penstock and power house will have the least impact on the existing environment / socio-economic features of the area.
2. As such, there is no danger to the life and sustainability of wild animals.
3. The forest land diversion is very low at 2.42 ha and with tunnel in the scheme very few trees has to be cut.
4. Out of the 2.42 ha of forest land required for the project, it is imposed to hand over 1.89 ha of forest land back to the Forest dept. and hence the net requirement will only be 0.98 ha. As such, there will be a net increase of 1.89 ha in the forest cover in that area.
5. The power house, tail race and switch yard are coming in the private land.

Encl: survey file.