

SITE INSPECTION REPORT FROM E M C

Sub:

Site inspection of 19.8 MW Keezharkuthu SHEP held on 17.11.2018 for clearance from State Forest Department under FC Act 2006.

Ref: G.O (MS) No.23/2014/PD dated 21.07.2014 & MoM of High Power Committee meeting chaired by Chief Secretary on 8.5.2018, Date of joint inspection from CCF Kottayam -ref No.C5- 5392/2016 from CCF, High range Circle, Kottayam dated 26.10.18 & GO(RT)No.188/2018/PD dtd. 29.10.18 .

Joint inspection team who visited the site;

Mr. Gopakumaran Nair, Joint Secretary to Government (Power Department)
Mr. M.K.Parameswaran Nair (Technical Committee Member to Govt. on SHP)
Mr. Jeepak Misra (I.F.S, Chief Conservator of Forests, Kottayam)
Mr. Unnikrishnan (Divisional Forest Officer, Kothamangalam)
Mr. G.Anil, Joint Director - EMC
Mr. Dineshkumar, Energy Technologist - EMC
Mr. Ajit S, Asst.Executive Engineer (KSEBL)
Mr. Onkar Singh, Managing Director (Keezharkuthu Power Private Limited)
Mr. Jasbir Singh, Joint Managing Director (Keezharkuthu Power Private Limited)
Dr. Shaji P.K. (Environmental Specialist, Agriculture & Eco systems Management Centre, Trivandrum who prepared the EIA report of the project for the allottee.)

Government vide GO (MS) No.23/2014/PD dated 21.07.2014 have allotted 15 MW Keezharkuthu Small Hydro Electric Scheme to a consortium led by M/s. General Mechanical Works Pvt Ltd. and M/s. GMW Engineers Pvt. Ltd. The allottee needs to form a SPV to implement and run the power plant as per the tender condition. The lead member of the allottee consortium had submitted a request for approval of the SPV formed already under the name – Keezharkuthu Power Private Ltd (KPPL) - for the implementation and running the plant with registered office at MCP Associate Building, Opp. St. Peters College, Korenchery PO, Kochi Vide GO (Rt) No.37/2015/PD dated 11.2.2015 Government approved the SPV - Keezharkuthu Power Private Ltd.

M/s Keezharkuthu Power Private Ltd had submitted the TEFR for the Keezharkuthu SHP with an enhanced capacity of 19.8MW (6.6 x 3) by revising the DPR prepared by KSEB by incorporating a modification in the water conductor system by proposing a tunnel in place of the channel/ penstock thus reducing the forest area required for the scheme from ~ 17Hc to 3.5 Hc and the Technical Committee constituted by the government had approved the TEFR with the modification with an enhanced capacity of 19.8 MW and the same was approved by the Government.

Salient features of the project:

Capacity – (3x6.6MW)	19.8MW
Annual Generation	65 Million Unit

Max. discharge – 5.5 cumecs	penstock dia – 1.6m
Gross head – 460M	In the Keezhar (tributary of Kambar & sub tributary of Kaliyar which joins with Moovallupuzha.
Diversion of water	Not envisaged
Forest clearance	Required

M/s Keezharkuthu Power P Ltd had applied to Forest Dept. through web portal for the State Forest clearance of Keezharkuthu SHEP proposed at Kanjikuzhy Village, Idukki District for forwarding it to MO&EF for clearance.

Government approved the DPR with an enhanced capacity of 19.8MW after the same was vetted by a Technical Committee constituted by the Govt. Though the forest land required for the project was considerably reduced from the original KSEB report by introducing a tunnel, the proposal for diverting 3.4Hc forest land was rejected by Forest Department since the study was not proper. The allottee then made a detailed EIA study through M/s Agriculture & Ecosystem Group. As per this study, the forest area required is reduced to 2.87Ha and application was resubmitted on 30.6.2018. This matter was taken up in the High Power Committee Chaired by the Chief Secretary and a decision was taken to conduct a joint site inspection by Power Department, Forest Department, KSEB & EMC.

During the site inspection, M/s KPPI who conducted the EIA study informed that the forest land requirement was reduced from 3.4 to 2.87 during construction period of two years with forest land requirement to 0.98 Ha during the operation period. The proposal is to return the land required for the temporary road and facilities during construction amounting to 1.89 Ha of forest land after construction.

The allottee informed that the private land required for the project is ~1.5 Ha and another 2.87 Ha private land is to be acquired for compensatory afforestation. The transmission line from the power house which is in private land is proposed through existing roads.

The allottee further informed that no routine operations are required at the ungated weir which is proposed in forest land. All the other power plant operations are in the non-forest land. The total number of trees to be felled is only 364 (56 species)

The members of the joint site visit observed that based on the EIA study the allottee had made sincere efforts in minimising the forest land requirement and the proposal needs a relook from the side Forest Department.

The Committee observed that considering the meandering nature of the proposed road with cutting on one side and filling on the other side, the effective width

requirement would be more than that anticipated. M/s KSEB representative suggested for rope way for conveying construction materials to the weir site during construction period to reduce the land requirement for the proposed road up to the weir site which would increase the forest cover.

The allottee further informed that the entire extent of land for approach kucha road (0.45 Ha) would be handed over back to Forest Department for afforestation and the impact would be limited to construction period only.

The allottee further informed that a 1 m diameter discharge pipe is proposed to be embedded in the body of the weir at river bed for releasing ecological flow downstream during the lean summer season when power generation is not envisaged. The power generation is envisaged only during the two monsoon months and during that period about 44% of water will overflow through the weir downstream thus keeping the riverine ecology intact. MNRE specifies a minimum lean flow of 10% of the average discharge of three lean months. The tail water will join the same river below the power house since no inter basin diversion is envisaged. The small pondage created in the upstream side of the weir would be advantageous for the wild life for drinking water in lean months which may reduce the frequency of wild animals coming to the inhabited areas. M/s KPPL informed that the tunnel/surge muck will be taken in covered trucks and disposed outside the forest land in designated land with appropriate slope protection/stabilisation including afforestation. The road to the surge/penstock route from the power house side has been avoided to minimise loss of forest. Alternately penstock is proposed to be conveyed and erected through winches along the penstock route. The penstocks will be embedded in trenches and backfilled/stabilised/slope protected with soil of appropriate depth and planted with trees. This will allow the free movement of wild life without any hindrance and impacts, and impacts, if any will be limited to the construction period only.

As the power house site is proposed in private land, no impacts are anticipated to forestry and wild life.

The allottee informed that all the impacts have been duly addressed in the EIA report. The EIA report has suggested mitigatory measures including compensatory afforestation in 2.87 Ha of forest land, although 0.98 Ha is required to be diverted permanently. KPPL assured to carry out Environmental Management & Monitoring Plan as outlined in the EIA report scrupulously so as to contain the impact within the carrying capacity of the ecosystem.

The CCF observed that the main impact from the project is expected from the 1 km road proposed to the weir site. Although the suggestion of returning the road site to Forest Department for afforestation is appreciated, it is practically impossible for regeneration. Further the cutting and filling will destabilise the terrain leading to further earth slides, erosion and uprooting of trees, thereby affecting the ecology and wild life.

in this stretch. Further he informed that no major repair works will be allowed in the existing Kottakavila- Kaithappara mud road.

The representative from KSEB Ltd., suggested to the allottee to consider avoiding the construction of the long stretch of road up to the weir site and use temporary Ropeway with steel towers at required intervals for transport of muck from weir, tunnel/surge site to outside the forest and to take construction materials/concrete to the project sites. The ropeway could be dismantled after construction.

The allottee accepted the suggestion of Ropeway for construction stage enabling minimal disturbance to forest and wild life. They also assured to give a declaration to the effect that that no major repair works will be sought in the existing Kottakavila- Kaithappara mud road during construction, as desired by the CCF.

The CCF noted the suggestion of ropeway and advised the allottee to firm up their proposal and submit the same for inclusion in the site inspection report.

The EMC representative informed that according to the recent notification SHP projects up to a capacity of 25MW is considered as "White Industry" which does not even need clearance from Pollution Control Board. As such there is no ban on establishment of White Category of Industries in ESA villages. As per directions in point No. 9(a) of the notification, mining, quarrying and sand mining are prohibited. However, as per No.9.(c) building and construction projects of area up to 25 Ac or building construction less than 20,000 sq.m is permitted, thus implying even mining & quarrying activities for projects up to this range of 25 MW and below. (Ref: F. No. 1-4/2012 - RE (Pt.), Government of India Ministry of Environment and Forests). Further, the project will come back to Government after the BOOT period of 30 years from the date of the Implementation Agreement as per the allotment norm.

The Joint Secretary (Power) suggested to consolidate the remarks of all and submit and apprise the same to the Chief Secretary for further proceeding.

