

Minutes of the 87th Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects held on 23-24th September, 2015 at Teesta Meeting Hall, 1st Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 110003.

The 87th Meeting of the Expert Appraisal Committee (EAC) for River Valley and Hydroelectric Projects was held during 23-24th September, 2015 at Teesta Meeting Hall, 1st Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 110003. The meeting was chaired by Shri Alok Perti, Chairman. Dr. S. Sathyakumar, Dr. A. Lingaraju, and Sh. P. K. Chaudhury, Members could not attend the meeting. The list of EAC members and officials/consultants associated with various projects and who attended the meeting is at Appendix.

The following Agenda items were taken-up in that order for discussions:

1st day (23.09.2015)

Agenda Item No.1: Welcome by Chairman and confirmation of Minutes of the 86th EAC held on 24-25th August, 2015. The minutes of 86th EAC meeting was confirmed subject to following amendments:

Agenda Item 2.5 :Mago Chu HEP (96 MW) project in District Tawang of Arunachal Pradesh by M/s. SEW Mago Chu Power Corporation Ltd. - for Reconsideration of Environmental Clearance.

Additional condition as Para (iv) at the end of the minutes to be added as below:

“Response of the project proponent on the various issues raised by SANDRP in their representations submitted to the Ministry to be submitted and considered by EAC. The EC to be granted based on the outcome of consideration by the EAC”

Agenda Item 2.6 : Nyukcharong Chu HEP (96 MW) project in District Tawang of Arunachal Pradesh by M/s. SEW Nyukcharong Chu Power Corporation Ltd. - for Reconsideration of Environmental Clearance.

Additional condition as Para (iv) at the end of the minutes to be added as below:

“Response of the project proponent on the various issues raised by SANDRP in their representations submitted to the Ministry to be submitted and considered by EAC. The EC to be granted based on the outcome of consideration by the EAC”

Agenda Item 2.7 : New Melling HEP (90 MW) project in District Tawang of Arunachal Pradesh by M/s. SEW Mago Chu Power Corporation Ltd. - for Reconsideration of Environmental Clearance.

Additional condition as Para (iv) at the end of the minutes to be added as below:

“Response of the project proponent on the various issues raised by SANDRP in their representations submitted to the Ministry to be submitted and considered by EAC. The EC to be granted based on the outcome of consideration by the EAC”

Agenda Item No 2.1: Veerabhadreshwara Lift Irrigation Scheme near Chikkur Tanda in Mudhol Taluk Bagalkot District, Karnataka by M/s Karnataka Neeravari Nigam Limited

1.0 Veerabhadreshwara Lift Irrigation Scheme envisages diversion of 2.5 TMC of water from the Ghataprabha River near Chikkur Thanda Village, Mudhol Taluk in Bagalkot District (Karnataka), to provide irrigation to 17,377 ha of land. This is likely to benefit 34 villages during Kharif season (June - September). The project also propose to fill 10 Minor Irrigation Tanks within the command area. The estimated project cost is reported to be Rs. 544 crores. The total land requirement is about 125 ha. It has been informed by the M/s KNNL that no submergence is involved.

2.0 The command area of the project is more than 10,000 Ha and thus, the project is treated as Category ‘A’. Hence, the proposed project is submitted to this Ministry for consideration by the EAC.

3.0 The annual rainfall in Mudhol and Ramadurga Taluk is 486.0 mm and the proposed villages lies in rain shadow area. Thus there is a need to extend irrigation facilities to these areas for the benefit and upliftment of the farmers and to address the regional imbalance. 2.5 TMC of water is proposed to drawn through an intake canal for a length of 100 m on Ghataprabha River near old Chikkur Thanda village in Mudhol Taluk which is 21 Km away from Mudhol town. Thereafter, the water is proposed to pumped to Delivery Chamber through MS Raising main of 17.6 Km length. The project has two major gravity canals viz., Hosakoti Canal of 13 Km length to irrigate 5900 ha of command area and Sallahalli Canal of 20 Km length to irrigate 11477 ha. The cropping pattern adopted for the proposed scheme during Khariff season is Hybrid Maize, Groundnut, Hybrid Jowar and Bajra,.

4.0 The project proponent clarified that the total yield of Ghataprabha river is 32.6 TMC (75% dependability) and even after utilization of upstream projects (8 TMC), net available yield at proposed lifting point is 24.6 TMC. Out of which, 2.5 TMC is proposed to divert for the project purpose.

5.0 The M/s KNNL informed that they are not making any barrier like barrage/ dam and adequate flow will be maintained therefore, release of E-flow does not apply.

6.0 After deliberations, EAC recommended the project for ToR clearance with the following additional conditions:-

- (i) Details of likely employment generation due to proposed project.
- (ii) Details of existing upstream & downstream projects with their water utilization are to be studied and provided in the EIA report.
- (iii) Biodiversity study to be conducted by a suitable institute as per OM of MoEF dated 28.5.2013.

(iv) Environmental Public Consultation shall be conducted at Bagalkot and Belgaum districts.

Agenda Item No. 2.2: North Koel Project, Tehsil Kandi District Garhwa, Jharkhand by M/s. Water resources Department, Government of Jharkhand -- for consideration of TOR.

The project proponent made a detailed presentation on North Koel Project located in Latehar District, Jharkhand. The project is proposed for installation of gates on Mandal Dam (District Latehar) and remaining work of canal network(District Garhwa, Palamau, Gaya, Aurangabad) and Mohammabdganj barrage (district Palamau) which were constructed before 1994. The Mandal dam falls in Palamu Tiger Reserve. The sight was visited by National Tiger Conservation Authority and recommended 4 m height reduction in F.R.L. The total culturable command area with this revision is 87480 ha. With the recommendations of NTCA for height reduction, the project envisages installation of Gates (11mx15m) on Mandal dam which will be 63.86 m in height (F.R.L.). Almost 90% of the components of the barrage and canals have been completed and are functional.

The estimated cost of the project is 1289.50 crores. About 0.82 MAF of water will be shared after completion of the project between Bihar and Jharkhand. The proposal will submerge around 17 villages partially which are settled in the upstream of dam. Also, after this reduction in height, around 4253.68 ha core area of Palamau Tiger Reserve will be submerged.

After detailed deliberations, the EAC observed that since the proposed project has been constructed prior to 1994 hence the construction made till date does not fall in violation case. The dam construction was started around 40 years back to provide water for irrigation in the region which has faced 10 major famines in this century.

The committee directed the project proponent to place before the committee the complete background of the project. The extent of work already executed and the status of applications made by the project proponent to seek forest clearance and NOC from National Tiger Conservation Authority or any such body which regulates such wild life sanctuaries. The project proponent further should clearly indicate the additional activity now required to be done for which they are seeking Environment Clearance. In addition the Project Proponent has to submit the NOC from concerned departments of the state governments of Bihar and Jharkhand on sharing of waters of North Koel River for the project.

Agenda Item No 2.3: Basaveshwara (Kempawada) Lift Irrigation Scheme near Ainapur village in Athani Taluk Belgaum District, Karnataka by M/s Karnataka Neeravari Nigam Limited.

1.0 Basaveshwara (Kempawada) Lift Irrigation Scheme envisages diversion of 4 TMC of water from the Krishna River near Ainapur Village, Athani Taluk in Belgaum District (Karnataka), to provide irrigation to 27,462 ha of land. This is likely to benefit 22 villages during Kharif season (June - September). The estimated project cost is reported to be Rs.1120 crores. The total land requirement is about 420 ha. It has been informed by the M/s KNNL that no submergence is involved.

2.0 The command area of the project is more than 10,000 ha and thus, the project is treated as Category 'A'. Hence, the proposed project is submitted to this Ministry for consideration by the EAC.

3.0 The annual rainfall in Athani Taluk is 687.0 mm and the proposed villages lies in rain shadow area. Thus there is a need to extend irrigation facilities to these areas for the benefit and upliftment of the farmers and to address the regional imbalance. 4 TMC of water is proposed to drawn through an intake canal for a length of 1.25 Km on Krishna River near Ainapura village in Athani Taluk which is 20 Km away from Athani town. Thereafter, the water is proposed to pumped to Delivery Chamber through Raising main of 15.9 Km length. The project has two major gravity canals viz., South Canal of 3.68 Km length to irrigate 1313 ha of command area and North Canal of 59.92 Km length to irrigate 26149 ha. The cropping pattern adopted for the proposed scheme during Khariff season is Local Jower, Hybrid Maize, Groundnut, Hybrid Jowar and Bajra,.

4.0 The project proponent clarified that by virtue of inter-basin transfer of 80 TMC of water (from Godavari to Krishna Basin), the State of Karnataka has been allocated 23 TMC of water. Out of which, the present project has been carved-out to utilize 4 TMC of water.

5.0 The M/s KNNL informed that they are not making any barrier like barrage/ dam and adequate flow will be maintained therefore, release of E-flow does not apply.

6.0 After deliberations, EAC recommended the project for ToR clearance with the following additional conditions:-

- (i) Details of likely employment generation due to proposed project.
- (ii) Details of existing upstream & downstream projects with their water utilization are to be studied and provided in the EIA report.
- (iii) Biodiversity study to be conducted by a suitable institute as per OM of MoEF dated 28.5.2013.
- (iv) Water allocation agreement between Karnataka and Andhra Pradesh is to be provided/ submitted while submitting EIA/EMP reports.
- (v) Environmental Public Consultation shall be conducted at Belgaum district.

Agenda Item No 2.4: Khairbandhan Barrage Project is located near villge Anlabeni in Karanjia Revenue Sub-Division of Mayurbhanj District in the state of Odisha -- for consideration of TOR.

1.0 The project is planned across Khairibhadan river in Baitarani basin in the district of Mayurbhanj with a catchment area of 588 Sqkm . There is no inter-state dispute for the project. Earlier the proposal was submitted to the state authority considering the project as "B" category. As the Similipal National Park Boundary is coming at 9.46 Km from the project site, the state authority resubmitted the proposal to Central agency (MOEF &CC, Govt Of India) as a category 'A' project.

2.0 The project proponent made a detailed presentation on the project. It was noted that the project is having no Interstate ramification. The catchment area of the project at proposed site is

588.00 Sq. km. The project envisages irrigation supply to 6950 Ha. of C.C.A during khariff. At present, there is no other sources of irrigation in this chronically draught prone area inhabited mostly by backward, weaker & tribal population. One under sluice gate of size 12mx8m will be provided on right side of the barrage to decrease the siltation in the pond. The left & right main canals are proposed to take off from the barrage with cultural command area of 4000 Ha. & 2950 Ha. respectively. 75% dependable yield for the project is found to be 41359.2 ham against the water requirement for Irrigation purpose is 9111.968 Ham and drinking water of 1.5 Ham per Month.

3.0 It was informed that the estimated cost of the project based on Odisha schedule of rate, (SR-2013) is Rs. 183.86 crores, with B.C. ratio 1.695. On construction of the project, 9 ha. of village forest will come under the pondage area and canal alignment of which 1 Ha of Village forest is coming under submergence. There is no displacement of any habitat due to this project, only 30.15 Ha of private land and 24.12 Ha of Government land is getting submerged.

4.0 It was informed that on completion of the Project, it will provide irrigation to 37 Nos of villages in 3 nos. of blocks, i.e., Jasipur, Raruan & Sukruli. Number of the beneficiaries of the project is 22,949 out of which 17,292 nos. (75.3%) belong to S.T. and 1286 nos. (5.6%) belong to S.C. community. Hence the project after completion shall benefit 80.9% of S.T. and S.C. community of 37 nos. of villages in the backward district of Mayurbhanj. The intensity of irrigation of the three beneficiary blocks is presently 23.6% which will be enhanced to 38.5% after completion of the project. The Project after completion will increase the annual agricultural produce from pre-project quantity of 6,000MT to 40,450MT. This will enhance the net benefit from production by Rs. 39.63 crores per annum.

5.0 It was informed that for the upliftment of the S.T. and S.C. population in a backward district and to fulfill the Govt. manifesto of minimum 35% irrigation in each block of the state it is necessary to take up this project.

6.0 After detailed deliberations, the EAC recommended for scoping clearance for the project with the following additional TORs to be followed in the EIA study.

- i. Project Proponent has to submit the clearance/NOC from Department concerned of the Odisha State Government for utilization of their land which will be submerged due to construction of barrage.
- ii. Information on the 10-daily flow basis for the 90% & 75% dependable year the flow intercepted at the barrage, the environmental flow and other flow releases at downstream of the barrage and spillway shall be included in the EIA report.
- iii. Hydrological studies/data as approved by CWC shall be utilized in the preparation of EIA/EMP report. Actual hydrological annual yield may also be given in the report.
- iv. Hydrological studies/data as approved by CWC shall be utilized in the preparation of EIA/EMP report. Actual hydrological annual yield may also be given in the report.
- v. Public Hearings needs to be conducted as per the provisions of EIA Notification, 2006.
- vi. As boundary of Similipal National Park is at a distance of 9.46KM project site National wildlife clearance is to be obtained for the project.
- vii. Provision of release of E-flow to be made at 20% of lean season, 25% of non-monsoon non-lean season and minimum 30% in monsoon season.

- viii. Biodiversity study to be conducted by a suitable institute as per OM of MoEF dated 28.5.2013.

Agenda Item No 2.5: Dardu HEP (49 MW) in Papumpare Distt. Of Arunachal Pradesh by M/s KVK-ECI Hydro Energy Pvt. Ltd. Revision in the Capacity and Extension of the validity of TOR

Dardu Hydroelectric Project, located on Pare river in Papum Pare district of Arunachal Pradesh. Scoping Clearance for Dardu HEP (60 MW) was accorded by Ministry of Environment & Forests, Government of India vide letter No. J-12011/20/2012-IA-I dated October 18, 2012. Due to environment flow provisions, the capacity got revised to 49 MW, therefore TOR for revised capacity with extension of validity by another year was accorded vide MoEF&CC letter No. J-12011/20/2014-IA.I dated February 12, 2015, which is valid till October 17, 2015.

Developer submitted that they have made substantial progress in the survey and investigation and DPR is being finalized. EIA EMP studies are also in advance stage and shall be completed soon. There is no change in any of the project parameters and only extension is sought to complete the investigation and studies. Developer requested one-year extension to complete all the activities including Public hearing and submission of the final report for appraisal.

EAC noted that name of the company has changed to KVK Dardu Hydro Energy Pvt. Ltd. and asked the project proponent to explain. Developer explained that Government of Arunachal Pradesh originally allotted these projects to KVK Energy, who have formed an SPV/separate company to execute this project in the name of KVK Dardu Hydro Energy Pvt. Ltd. Later Mytrah Energy (India) Ltd and associated companies have invested in KVK Dardu Hydro Energy Pvt. Ltd. Developer also requested that for the purpose of this project all correspondence will be made in the name of KVK Dardu Hydro Energy Pvt. Ltd. EAC asked developer to submit the evidence of ownership of this company to MoEF&CC at the earliest.

EAC recommended the extension of scoping clearance by one year subject to submission of evidence of ownership of KVK Dardu Hydro Energy Pvt. Ltd.

Par HEP (52 MW) in Papumpare Distt. Of Arunachal Pradesh by M/s KVK-ECI Hydro Energy Pvt. Ltd. Revision in the Capacity and Extension of the validity of TOR

The project has been considered as a special agenda item with the permission of the Chairman.

Par Hydroelectric Project, located on Pare river in Papum Pare district of Arunachal Pradesh. Scoping Clearance for Par HEP (60 MW) was accorded by Ministry of Environment & Forests, Government of India vide letter No. J-12011/18/2012-IA-I dated October 17, 2012. Due to environment flow provisions, the capacity got revised to 52 MW, therefore TOR for revised capacity with extension of validity by another year was accorded vide MoEF&CC letter No. J-12011/28/2014-IA.I dated February 12, 2015, which is valid till October 16, 2015.

Developer submitted that they have completed the DPR, got it approved by AHEC, IIT Roorkee and obtained Techno-economic Clearance from State Government. They have

completed EIA EMP studies and submitted the draft reports to State Pollution Control Board for Public Hearing. Date of Public Hearing meeting is fixed as October 14, 2015 and announced in newspapers. As the TOR is lapsing on October 16, 2015, there will not be enough time after Public Hearing to update the reports and submit the final copies to MoEF&CC for appraisal. There is no change in any of the project parameters and only extension is sought to complete Public Hearing.

EAC noted that name of the company has changed to KVK Par Power Pvt. Ltd. and asked the project proponent to explain. Developer explained that Government of Arunachal Pradesh originally allotted these projects to KVK Energy, who have formed an SPV/separate company to execute this project in the name of KVK Par Power Pvt. Ltd. Later Mytrah Energy (India) Ltd and associated companies have invested in KVK Par Power Pvt. Ltd. Developer also requested that for the purpose of this project all correspondence will made in the name of KVK Par Power Pvt. Ltd. EAC asked developer to submit the evidence of ownership of this company to MoEF&CC at the earliest.

EAC recommended the extension of scoping clearance by one year subject to submission of evidence of ownership of KVK Par Power Pvt. Ltd.

Turu HEP (60 MW) in Papumpare Distt. Of Arunachal Pradesh by M/s KVK-ECI Hydro Energy Pvt. Ltd. Revision in the Capacity and Extension of the validity of TOR

The project has been considered as a special agenda item with the permission of the Chairman.

Turu Hydroelectric Project, located on Pare river in Papum Pare district of Arunachal Pradesh. Scoping Clearance for Turu HEP (66 MW) was accorded by Ministry of Environment & Forests, Government of India vide letter No. J-12011/19/2012-IA-I dated October 18, 2012. Due to environment flow provisions, the capacity got revised to 60 MW, therefore TOR for revised capacity with extension of validity by another year was accorded vide MoEF&CC letter No. J-12011/25/2014-IA.I dated February 12, 2015, which is valid till October 17, 2015.

Developer submitted that they have made substantial progress in the survey and investigation and DPR has been prepared and submitted to IIT Roorkee for review. EIA EMP studies are also in advance stage and shall be completed soon. There is no change in any of the project parameters and only extension is sought to complete the investigation and studies. Developer requested one-year extension to complete all the activities including Public hearing and submission of the final report for appraisal.

EAC noted that name of the company has changed to Turu Hydro Energy Pvt. Ltd. and asked the project proponent to explain. Developer explained that Government of Arunachal Pradesh originally allotted these projects to KVK Energy, who have formed an SPV/separate company to execute this project in the name of Turu Hydro Energy Pvt. Ltd. Later Mytrah Energy (India) Ltd and associated companies have invested in Turu Hydro Energy Pvt. Ltd. Developer also requested that for the purpose of this project all correspondence will made in the name of Turu Hydro Energy Pvt. Ltd. EAC asked developer to submit the evidence of ownership of this company to MoEF&CC at the earliest.

EAC recommended the extension of scoping clearance by one year subject to submission of evidence of ownership of Turu Hydro Energy Pvt. Ltd.

Agenda Item No.2.6: Kynshi Stage-II Hydro Power Project on River Kynshi in Nongpyrda Village in West Khasi Hills District, Meghalaya by M/s Jaypee Meghalaya Power Limited.

The project was given scoping clearance with ToR on 4th October, 2011. However, the Project Proponent informed that during a discussion with State Government Officials, it has been desired to shift the Dam site location due to geological aspects- mainly Uranium Ore in vicinity. The new location of the Dam is now about 4 km downstream of the confluence of Kynshi and Wahblei Rivers while earlier it was only 400 m d/s of the confluence. With this revised layout the project has been divided into two namely Kynshi-II 400 MW and Kynshi intermediate 40 MW project which is upstream of Kynshi-II. Kynshi intermediate scheme shall be at FRL 310 m. The Dam top of Kynshi Stage-II has been lowered to EL 196 m from EL 243 and the FRL has been reduced to EL 193 m from EL 204 m. MDDL has also reduced from 288 m to 180 m. This has reduced the requirement of forest land from 2169 ha to 695 ha and the submergence area has been reduced from 1867 ha to 522 ha. Consequently the installed capacity gets reduced from 450 MW to 400 MW. Dam height has been reduced from 91 m to 75 m and length of HRT has been reduced to 12 km from 27.0 km. It was noted that 2 km distance has been maintained between the TRT of Kynshi-I and the tip of reservoir of Kynshi intermediate and TRT of Kynshi intermediate and tip of the reservoir Kynshi-II.

The project was reviewed in the 56th EAC meeting held in November 2012 and EAC had asked for various information. The project proponent during the EAC meeting presented the information on the following aspects:

- X-section at the revised dam location.
- Detailed water availability studies and Design flood (PMF) & Diversion flood approved by CWC / CEA.
- Considering the approved water availability series, power optimisation studies have been carried out.
- L- section showing the details in respect of bed level of River Kynshi from the confluence of Wahblei and Kynshi to sufficiently downstream of TRT outfall i.e. upto RD 17496.62 m.
- Impact of Kynshi-II HEP on fish species migrating from Bangladesh, is proposed to be studied under “Impact Prediction” as a part of the CEIA Study.
- Detailed Project Report (DPR) shall be prepared after the entire field investigation and related studies including EIA/EMP studies have been completed.
- Updated Form-1 duly incorporating the corrections as advised by EAC has been submitted.
- A Contour Map showing Plan of Muck disposal sites with L-sections showing the distances & levels with reference to water edge corresponding to HFL, were also submitted.

Based on the power potential study as per the approved flow series, the installed capacity works out to 300 MW. For utilization of Environmental Flow, a power plant of 25 MW will be installed. The total power generation works out to (300 + 25) 325 MW.

The land requirement for the project will be 695 ha. The details are given as below:

Project Component	Area (ha)
Reservoir at FRL 193.0m	521.53
Dam & Appurtenant works	10.00
HRT including adits	8.39
Surge shaft including adits	1.00
Pressure shaft including adits	2.0
Power House including adits	30.00
Switch yard including cable tunnel	10.00
Tail race	1.00
Dumping yard	15.00
Borrow areas/quarry	25.00
Road	43.50
Colony	25.00
Miscellaneous	2.58
Total	695

The EAC during its 56th EAC meeting felt that since the Uranium deposits are just in the vicinity and above the submergence area, although, at present Uranium is not being extracted from these deposits but in case, in future it is decided to mine these deposits, the project may hamper the extraction. Further, crossing of submergence over the Uranium deposits could be a health hazard also. It was decided that as a precaution, the Ministry may seek comments from the Ministry of Atomic Energy. The possibility of Uranium deposits getting a through flow path once the reservoir gets impounded needs examination. Subsequently, the project developers interacted with Uranium Corporation of India Limited (UCIL) through State government of Meghalaya in this matter.

As suggested by UCIL, M/s J. P. Power agreed to shift Hydro Power Project further 3.4 km away from the Wahkyn Uranium deposit, UCIL vide letter No. UCIL/Adv/KPM/Wahkyn/2014, dated 29 Dec 2014 has agreed to clear the proposal subject to the following:

- Diversion of nalas to accommodate smooth and safe mining operations in the area in future.

- Suitable grouting and lining along the reservoir bank to prevent any possible seepage of nalas/crevices etc into the pit.
- Requirements of UCIL to be complied with.
- Request to finalize the DPR of the project after incorporating the recommendations of the UCIL for submission to the CEA for grant of TEC.
- Steps to be taken to obtain the clearance from the MoEF by completing the EIA/EMP reports already undertaken as per the Terms of reference (TOR) of the EAC.
- As proposed by UCIL, necessary grouting for seepage control shall be done.
- Channelization of streams wherever considered necessary for Uranium ore extraction within the reservoir area shall be done.
- In DPR of the project, details of the recommendations of the UCIL shall be incorporated.

After detailed deliberations, it was decided that the decision on approval of ToR shall be taken only after seeking the views of Ministry of Atomic Energy in the matter.

The Ministry of Environment, Forest & Climate Change will seek clarification from Department of Atomic Energy. The TOR will be considered only after the receipt of the views of Department of Atomic Energy.

Agenda Item No 2.7: Karcham Wangtoo HEP (1000 MW) project in Kinnaur District of Himachal Pradesh by M/s Jaiprakash Power Ventures Ltd – Transfer of Karcham Wangtoo project pursuant to sanction of scheme of agreement by the High Court regarding environmental clearance (EC)

The project proponent did not attend the meeting. Therefore, the EAC deferred the project.

Agenda Item No 2.8: Jeera Irrigation Project in Odisha by M/s Water Resources Department, Government of Odisha – For Environment Clearance.

The project proponent made a detailed presentation on the project. This is a medium irrigation project which will provide irrigation facility to 6000 ha of G.C.A and 4800 ha of CCA with annual irrigation of 5840 ha in drought prone area of Bargarh district of Odisha.

The catchment area intercepted at the proposed Dam site is 124.90 Sq.Km. The 75% dependable yield has been computed to be 4679.40 Ham. By fixing the FRL at 207.50m the gross storage of the Project comes to 2742.10Ham. As per calculation of silt load by Khosla's formula, the dead storage level comes to 202 m. The length of Left Main Canal is 13.25Km and that of Right Main Canal is 7.25Km.

The inhabitants of the proposed command area are mostly tribal and depends upon agriculture. As there is no irrigation facility at present, the crop production suffers a lot due to erratic rainfall. The Project on completion will provide irrigation to 4320Ha of land in Khariff season and 1520Ha in Rabi Season, thereby improving the socio economic condition of the people of the area.

The annual benefit due to agriculture after the project would be Rs.3313.21 lakhs. The man days to be generated due to creation of this project would be 17,64,416 man days. There is no displacement of any families due to this project. Only 505.43 Ha of private land without any population will be submerged and only 5.391 Ha Forest land is getting affected. Government of Odisha submitted to MoEF &CC that Chhattisgarh is within 10 Km of the proposed project area. Therefore, the project was considered by EAC at that time as per EIA Notification, 2006 (General Conditions apply).

The project proponent had intimated that the assignment for preparation of the Detailed Project Report (DPR), the R&R Plan and Environment Clearance of Jeera Irrigation Project had been entrusted to National Institute of Technology, Rourkela (NIT, Rourkela) during June 2009. The Detailed Project Report has been accepted in principle by CWC and application of TOR for prior Environment Clearance was submitted by Project Proponent during May 2010. Subsequently the ToR was granted on 30.09.2010 with a prescribed validity period of 2 years with stipulation to obtain necessary accreditation for the consultant who will be assigned with the job of preparing the EIA/EMP report of the project. As NIT, Rourkela who had been entrusted earlier with combined assignment of preparing the DPR, R&R Plan and the Environment Clearance of the project, was not an accredited Consultants, therefore, M/s Ramky Enviro Engineers Ltd., Hyderabad (REEL) was entrusted to undertake the assignment of preparing the EIA/EMP report of Jeera Irrigation Project. The Consultants, REEL had completed the preparation of the report in November, 2011 and the same was submitted to MOEF&CC by the project proponent during January, 2012. It was also clarified that during this period of preparation of the EIA/EMP report, REEL was NABET accredited Consultants.

This project was considered in the 70th EAC meeting for River Valley and HEP held on 10-11th December, 2013 at MoEF&CC, New Delhi. While considering the project, the EAC noted that the validity of the TOR for the project had expired and public hearing was held one day after expiry of the Validity of TOR and the NABET accredited Consultants had not renewed its validity period. Therefore, EAC advised Water Resources Department, Government of Odisha to submit application seeking extension of the validity of TOR so as to enable reconsideration of the proposal by the EAC.

The Project Proponent submitted the application for extension of validity of TOR on 21.07.2015 and the project was listed for consideration on extension of TOR in the 86th meeting of EAC held on 24th and 25th August 2015. The Project Proponent made a detailed presentation thereon for reconsideration of extension of validity of TOR for one year beyond the presently stipulated validity period of 4 years for River valley and HEP Projects., along with justification for shifting of the PH meeting by one day after expiry of the TOR.

In compliance to the conduction of Public Hearing Meeting after the expiry of the initial validity period the TOR the Project Proponent had submitted additional clarification stating that the PH meeting for the project as held on 01.10.2012 i.e. only 1 day after the scheduled validity period of the TOR accorded against the project ending on 30.09.2012. As 30.09.2012 was a Sunday and the day preceding that was holiday in that locality, the PH meeting was shifted by the State Pollution Control Board by 1 day beyond 30.09.2012. Hence, the PH meeting was conducted on 01.10.2012. Based on this justification, the project proponent pleaded that

technically no lapse has been made on part of Government of Odisha to conduct the PH in the next day.

The EAC had noted in its 86th meeting that the request made by the Project proponent was reasonable and genuine, agreed for extension of validity of TOR up to 30.09.2015 based on the justification provided by the project proponent. Thereafter the project proponent mentioned that EIA/EMP report has already been modified and the compliance report is already made available to the members. After due consideration of the request made by the project proponent, the EAC allowed them to make a presentation of the EIA/EMP of the project and the following points have been discussed.

As per the latest norms 30% of the average flow of the river during monsoon season and minimum of 20% of the average flow during lean season need to be discharged into the river downstream of the proposed intervening structure. The project proponent clarified that after accounting for 20% of riparian rights, which in the instant case becomes de facto release to the downstream, the average stream flow during monsoon season is 43% as against the ecological flow requirement of 30% during monsoon period. It is suggested that this aspect need to be established by reservoir stimulation study and yield hydrology appraised to CWC and compliance to the justification should constitute a part of the EIA/EMP report.

Regarding the Command Area Development (CAD) planning , it was clarified that as per the standard practice and CWC guidelines, 10% of Command area has been surveyed in detail for planning and estimating the CAD net work and this has been projected over the entire cultural command area to create necessary provision in the DPR against CAD activities. It was also intimated that the complete planning and execution of the CAD plan will be taken up by Command Area Development Authority (CADA) Odisha and a provision amounting to Rs.58.2 lakhs will be augmented in due course at the time of implementation of the Project.

Regarding muck utilization / disposal details the project proponent explained that the muck in the Head works will be mostly generated from Earth Dam base stripping and foundation excavation of spillway and total muck to be disposed of was in the order of 2.35 lakh m³.

On the management aspects of the fish species, the project proponent had explained that the fish species are predominantly cyprinids, whose need for migration for breeding and feeding is met in early monsoon. Adequate spill in the flood spells would meet their requirement. The requirement of flushing release to the downstream was exhibited through hydrographs. It was explained that through hydrographs of flood events that spills in the monsoon months for the 76% dependable year, mimic the natural flow pattern.

After detailed deliberations, the Committee observed the following:

- (i) Extension for the validity of TOR up-to 30.09.2015 based on the justification presented by the project proponent.
- (ii) As the Jeera River is not perennial, the environmental flow release of 30% in monsoon and 20% in the lean season proposed in the project appears to be adequate.
- (iii) Fishery Management Plan may be relooked keeping in view of the native species available in the river. A scientific institute / academic institution may be involved in the preparation of management plan.

- (iv) Detailed command area / catchment area plan has to be prepared and explained in EIA/EMP report.
- (v) Muck utilization/disposal details along with plan have to be prepared and submitted.
- (vi) As the project is located very close to Sambalpur and Bargarh township, provision for water sports / eco-tourism needs to be envisaged and necessary budgetary provision will have to be made in the EIA & EMP report. Though, Govt. of Odisha agreed to make a provision of Rs.700 lakh for the same, this has to be reflected properly in the EIA/EMP report. The; project authority may consult Chief, Water Sporting Council of India in this connection.
- (vii) Committee observed that Govt. of Odisha has prepared the modified EIA/EMP report in-house. However, a list of experts/ personnel/institutions who have rendered consultancy initially in the project has to be furnished and mentioned in the EIA/EMP report.

In response to the above observations, the project proponent furnished necessary compliance and uploaded the modified EIA/EMP report on 14.09.2015 along with request to reconsider the proposal for environmental clearance against Jeera Irrigation Project by the EAC. After verification of the compliance and report furnished by the project proponent the same was listed as agenda item in the 87th EAC meeting dated 23/ 24.09.2015.

The project proponent made a detailed presentation in a specific manner to the observation/ comments made in the 86th meeting. On the environmental flow aspect, a consolidated water accounts statement as per reservoir stimulation study appraised by the CWC has been presented establishing the average river flow of 43% downstream of the dam. The fishery management plan has been relooked keeping in view of native species available in the river with the assistance of the Principal Scientist from Central Institute of Fresh Water and Aqua Culture, CIFA, Bhubaneswar. The provision of Rs.109.00 lakhs has been made for the purpose which appears to be adequate. Some anomalies have been pointed out in the write up in respect to the proper nomenclature convention of zoological names of the species. The project proponent was advised to make the typological rectification and upload the updated pertinent Sub-Section of the report.

The management Plan with respect to Catchment Area Treatment Plan as well as the Command Area Development Activities, which have also been appraised in the 86th meeting of the EAC, are now incorporated in the modified EIA/EMP report. The provision of Rs.189.00 lakhs has been kept for undertaking the biological as well as engineering measures under the Catchment Area Treatment Plan. Similarly, for CAD and OFD (Command Area Development and On Farmed Development) activities the budgetary provision of Rs.58.52 lakhs has been earmarked.

In order to dispose the muck Remnant after necessary utilization, the Govt. land patch has been identified. The project proponent has submitted the location plan showing the identified land at a distance of 1.8 km of downstream of the dam and also the same has been incorporated in the EIA/EMP Report.

Govt. of Odisha has agreed in the 86th meeting to keep the provision of Water Sports / Eco-Tourism amounting to Rs.700.00 lakhs in the environmental management cost of the

estimated project. The project proponent has envisaged 3 water Sports activities namely Para Sailing, Water Skiing and Water Scooters in the preliminary conceptualized stage in consultation with Tourism Department of the State Govt. It is seen that the budgetary provision worked in detail, and broad data along with the scheme and the Sports activities in consonance with State Tourism guideline, has been incorporated by the project proponent in the modified EIA/EMP report.

The cost estimate of the Environment Management Plan after incorporating all the modifications stands as below:

Sl. No.	EMP Components	Amount (in Rupees)
1	Rehabilitation And Resettlement Plan	19,10,17,000
2	Catchment Area Treatment Plan	1,89,000
3	Restoration Plan For Quarry Sites	100,00,000
4	Muck Disposal plan	50,00,000
5	Greenbelt Development	65.26,000
6	Fisheries management	109,00,000
7	Energy Conservation Management Plan	20,00,000
8	Public Health Care Plan	214,00,000
9	Biodiversity Conservation & wild life management Plan	45,00,000
10	Cost estimate for Sanitary Facilities (Sewage treatment plants along with sewage system up to disposal system) for Labour Camps	15,00,000
11	Cost estimate for Solid waste management	41,00,000
12	Cost estimate for environmental measures of road construction	70,00,000
13	CAD and OFD Activities	58,52,000
14	Water Sports Activities	700,00,000
Total		33,99,84,000

Regarding Consultant disclosure aspect, the project proponent has furnished that during the appraisal of the project in the 86th EAC meeting held in August 2015, they have learnt that the accreditation has not been renewed for river valley projects by the respective Consultants. Therefore, his services were discontinued and hence subsequent modifications incorporated by the project proponent into the EIA/EMP report has been done in house by seeking assistance from reputed experts/personnel/ institutions and accredited environmental consultants such as Visiontek Consultancy Services Pvt. Ltd.

Present Status of the Project

The Detailed Project Report of the project has already obtained in principle clearance from Central Water Commission (CWC). The project has also got the clearance from ISM directorate of CWC. The R&R clearance has also been obtained by the project proponent from Ministry of Tribal affairs (MOTA). The project has a forest land involvement of 5.391 ha for its canal distribution system and for the submergence of reservoir. The project proponent mentioned that equivalent non forest land for compensatory afforestation has already been identified and verified. The E-filing has also been completed for the forest diversion proposal. Necessary DGPS survey for compensatory afforestation land and other appurtenant works for preparation of forest diversion Proposal are in progress.

After detailed examination and discussing adequately the compliance, the committee observations, the EAC recommended for environmental clearance for the project subject to submission of the following information:

- i. Finalization of the Forest Diversion Proposal/ FC Clearance.
- ii. Submission of Bio-diversity chapter of EIA/EMP report after rectification by a Biological Expert / Botany expert.

The meeting ended with vote of thanks to Chair.

List of Participants

2.1 & 2.3 M/s. Karnataka Neeravari Nigam Ltd.

1. Sh. K.E. Nulakund, EE(North)Zone, Belgaum, Karnataka
2. Sh. Shiuanand. M. Bambal, EIA Consultant
3. Sh. Madhu Kumar.C, EIA Coordinator
4. Sh. Santhosh Kumar, T.M

2.2 M/s. WRD Jharkhand Ltd.

1. Capt.(Retd) H.K. Sharma
2. Sh. Sumit Verma
3. Sh. R.K. Khanna
4. Sh. Ganesh Ram

2.4 M/s. Chief Engineer PPF & I, Bhubaneswar

1. Sh. Bibhudatta Panda, EE (c), D.O.W.R, Govt. of Odisha
2. Sh. K.R. Acharya, Chief Engr, PPF & I, DOWR, Odisha
3. Sh. Niranjana Panda, S.E.I.W.D, New Delhi (DOWR) Odisha
4. Sh. Ashutosh Das
5. Sh. P. Kumar Ranjan

2.5 M/s. KVK-ECI Hydro Energy Pvt. Ltd.

1. Sh. Arun Bhaskar, Director, RSET
2. Sh. Ravinder Bhatia, Director, RSET
3. Sh. Vinod Batta, Vice President, SNC-Lavelia
4. Sh. Shankar Narayan, Vice President, KuKECI Hydro

2.6 M/s. Jaypee Meghalaya Power Limited.

1. Sh. P.K. Alagh, Sr. V.P, JMPL
2. Sh. Sachin Singla, Sr. Group Engg, JMPL
3. Dr. Aman Sharma, WAPCOS
4. Sh. S.M. Dixit, WAPCOS
5. Sh. Ashok Kumar, JMPL
6. Sh. Rajendra Singh, JMPL

2.8 M/s. Water Resources Department, Government of Odisha.

1. Sh. K.R. Acharya, C.E, PPF & I, Odisha, Bhubaneswar
2. Sh. Ashutosh Das, Deputy Director (Planning), DOWR, Odisha
3. Sh. Niranjana Panda, S.E, IWD, Cell (DOWR) New Delhi
4. Sh. Bibhudatta Panda, EE (CC), IWD Cell, DOWR, New Delhi
5. Sh. P. Kumar Ranjan, Visiointek Consultancy