

MINUTES OF THE 32nd MEETING OF THE EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 12th AUGUST, 2022

The 32nd Meeting of the EAC (River Valley and Hydroelectric Projects) organized by the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi was held on 12th August, 2022 through video conference under the Chairmanship of Dr. K. Gopakumar. The list of Members participated in the meeting is at **Annexure**.

Agenda Item No. 32.1:

Confirmation of the Minutes of the 31st EAC meeting

The Minutes of the 31st EAC (River Valley and Hydroelectric Projects) meeting held on 29th July, 2022 were confirmed.

Agenda Item No. 32.2:

Shongtong-Karcham (402 MW) Hydroelectric Power Project in District Kinnaur of Himachal Pradesh by M/s Shongtong Karchham Hydro Electric Project, HPPCL – Amendment in Environmental Clearance (EC) - reg.

[Proposal No. IA/HP/RIV/276332/2022; F. No. J-12011/58/2007-IA-I (R)]

32.2.1 The project proponent vide email dated 9th August, 2022 has informed that they will not attend the meeting due unavoidable circumstances and requested to reschedule their case in next EAC meeting.

The EAC therefore **deferred** the proposal.

Agenda Item No. 32.3:

Kurha Vadhoda Islampur Lift Irrigation Scheme UPSA Sinchan Yojna with CCA 32372 Ha at Village Rigaon, Tehsil Muktainagar District Jalgaon (Maharashtra) by M/s Tapi Irrigation Development Corporation, Jalgaon, Maharashtra - Site Visit Report - reg.

[IA/MH/RIV/255427/2022; F. No. J-12011/05/2021-IA. I(R)]

*The EAC noted that the proposal has already considered by the EAC in its meeting held on 29th July, 2022. Wherein, the EAC **recommended** the proposal for grant of Standard ToR with public consultation (without public hearing) for conducting EIA study for conducting EIA study to the project for Kurha Vadhoda Islampur Lift Irrigation Scheme UPSA Sinchan Yojna with CCA 32372 Ha at Village Rigaon, Tehsil Muktainagar District Jalgaon (Maharashtra) by M/s Tapi Irrigation Development Corporation, Jalgaon, Maharashtra.*

Agenda Item No. 32.4:

Teesta Low Dam – I & II (Combined) Hydro-Electric Project 71 MW (2x30+1x11MW) in an area of 170 ha in Triveni town, Tehsil Rangli Rangliot, District Darjeeling, West Bengal by M/s West Bengal State Electricity Distribution Company Limited – Reconsideration for grant of Terms of Reference - reg.

[Proposal No. IA/WB/RIV/219929/2021; F. No. J-12011/11/2021-IA.I (R)]

The EAC noted that the proposal was considered by the EAC in its meeting held on 29th July, 2022. Wherein the EAC after detailed deliberations on the sub-committee report found the project not suitable for implementation at the proposed site as far as ecological point of view and Environmental Cost Benefit of the project. Accordingly, the project was **not recommended** by the EAC for grant of ToR.

Agenda Item No. 32.5:

Basin Wise Reassessment of Hydroelectric Potential in the Country - Submission of draft report of West Flowing Rivers Basin – reg.

[E-Office No. 150110; F. No. J-12011/25/2018-IA.I(R)]

The Member Secretary informed the Committee that the Hydro Electric Potential Reassessment Division (HEPRD), CEA, MoP has forwarded the draft Report of Reassessment of Hydroelectric Potential of Brahmaputra River Basin for comments of the MoEF&CC.

Based on examination in the Ministry, it has been decided that it would be appropriate to discuss the draft report in the EAC meeting and then finalize the comments as per recommendation of the EAC.

The EAC during examination noted the following:

The first systematic hydroelectric potential Survey of India was undertaken by erstwhile Central Water & Power Commission (CW& PC) during 1953-59. According to this survey, Hydroelectric potential of the country was assessed as about 42 Million kW from a total of about 250 Projects. Subsequently, the studies for Reassessment of Hydroelectric Potential (1978-87) were undertaken by Central Electricity Authority (CEA). As per the Reassessment study completed by Central Electricity Authority (CEA) in 1987, the Hydroelectric Power Potential of the country was estimated as about 84 million KW at 60% load factor (with probable installed capacity of

1,48,701 MW) from a total of 845 nos. projects. The above comprised 592 Hydroelectric Projects (above 25 MW) aggregating to installed capacity of 145320 MW.

Brahmaputra Basin:

The Brahmaputra Basin lies between East Longitudes 82°-0’ to 97°-50’ and North Latitude 22°-10’ to 31°-30’ and is bounded on the North and West by high ranges of Himalayas, on the east by the Patkai range of Purvanchal hills running along Assam-Myanmar border and by the Khasi and Jaintia ranges of Assam hills on the south. The Brahmaputra Basin has been divided into Twelve (12) sub basins namely Lohit, Subansiri, Dibang, Dihang, Dikrong, Kameng, Upper Brahmaputra, Lower Brahmaputra, Kalang (Kopili), Teesta, Tawang and Barak.

Hydroelectric Projects in Brahmaputra Basin having Environmental/ Forest Issues:

In Brahmaputra River System, out of 246 nos. of projects, 26 nos. of projects are under Operation, 9 no. of project is under Construction, 25 no. of project is under Concurred stage. Remaining 185 nos. of projects are under various categories viz. DPR Returned for Re-submission, S&I, PFR and Balance Projects. Out of these 185 no. of projects, 16 nos. of projects are having Environmental & Forest issues, 1 nos. of project dropped due to MOEF&CC free stretch guidelines.

The EAC deliberated on the contents of Chapter 4 - Environmental Aspects in the report and observed following:

S. No.	Content of Chapter 4 - Environmental Aspects	Comments of the EAC
1.	The list of the protected areas in Brahmaputra River Basin and status of their Eco-Sensitive Zone given in Table-4.1	The status of ESZ Notification should be mentioned where it is not given.
2.	ASSESSMENT OF PROJECTS : Based on the proximity of the projects with respect to boundaries of ecologically sensitive areas, the project	The proposed project components (such as power house, dam/barrage , HRT, TRT etc.) distance from ESZ area/Protected areas to be mentioned in Remarks/Recommendation

	wise recommendations in Table 4.2, 4.3, 4.4,4.5, 4.7, 4.8, 4.9, 4.11, 4.15	column or add separate column for project components distance from ESZ/Protected areas.
3.	Details of Fish species in Brahmaputra river basin and its tributaries enlisted in Table-4.22	Details of fish species mentioned in the report are based on old literature review. The same may be re-examined and updated as per the data of CIFRI.

The EAC has also suggested that the said report may be finalized/accepted by CEA considering the aspects related to Cascade development/ longitudinal distance/E-Flow and also keeping in view of prevailing norms and guidelines on Environmental/Ecological Sensitive Zone, National Park/Wildlife Corridor/ landslide Vulnerable zone for planning of HEPs in the river basin.

Agenda Item No. 32.6:

Review meeting for proposal of Three Tier Monitoring Mechanism.

[E-Office No. 149523; F. No. J-11013/40/2020-IA.I(M) Pt.I]

The Member Secretary informed the EAC that Hon’ble National Green Tribunal while hearing the matter under OA No. 175/2018 titled as Jammula Chhoudaraiah vs. Union of India and others tagged along with other three matters on 2nd December, 2021, has directed to determine appropriate methodology for assessment of Environmental Compensation for loss/damage/degradation to environment.

Background:

In these matters, complaints raised by applicants are that “lift irrigation schemes” have been launched, some are executed and even completed during pendency of matter, without complying mandatory provisions of environmental laws relating to Environmental Clearance, consent to establish and consent to operate. The schemes were commissioned without preparation of scheme for scientific treatment of various components of environment like soil, water, air etc. There was no assessment of impact on environment resulting in execution of these projects, not only illegally but causing serious degradation and damage to environment.

The current situation in the present matters is that two projects have already been completed i.e., Purushothapatnam LIS, Pattiseema LIS. The third project i.e., Chintalapudi LIS is more than half complete and still in progress. The last project i.e., KGPR Linking Project is in the process of proposal and yet to commence. All these projects apparently, since relate to irrigation besides other, one of the biggest losses suffered is destruction of huge fertile soil of a very high magnitude including topsoil. Also, there is huge extraction of sand from riverbed and river banks. Huge quantity of topsoil, sand and rocks excavated and due to unscientific management, has been dumped without taking any

requisite precautions, causing damage to environment. Secondly, there is flagrant violation of compliance of mandatory statutory laws with regard to EC by undergoing process provided in EIA 2006, and laws relating to consent from State PCB.

The matter got disposed of vide **order dated 02.12.2021** wherein the Hon'ble Tribunal imposed environmental compensation on all the concerned project authorities and directed to formulate an Oversight Committee comprising of MoEF&CC, CPCB and APPCB, the nodal agency shall be APPCB and CPCB. Further, the MoEF&CC was directed to constitute a specialized Committee to determine appropriate methodology for assessment of Environmental Compensation for loss/damage/degradation to environment. The operative extract is reproduced below:

“MoEF&CC shall constitute a specialized Committee to determine appropriate methodology for assessment of Environmental Compensation for loss/damage/degradation to environment, considering all relevant aspects of the matter including observations made here in above and the principles suggested. The said methodology shall be given statutory status by taking appropriate action by MoEF&CC so that the element of subjectivity in the matter of determination of Environmental Compensation may be eliminated or at least negated and a uniform approach is observed by Statutory Regulators in discharge of their statutory duties.”

Accordingly, the directions of Hon'ble Tribunal were processed in the Ministry and it was decided to include this issue in the agenda of the meeting held on 17.06.2021 to discuss the various methods adopted for calculation of Environmental damage & remediation due to violation of Environmental norms. The matter was discussed in the aforesaid meeting and it was inter-alia decided:

“..... vi. A specialized committee may be formed comprising NEERI, CPCB, an outside violation expert with a member secretary from MoEF&CC to develop appropriate methodology for assessment of Environmental Compensation for loss/damage/degradation to environment as per Hon'ble NGT (Principal Bench) at New Delhi direction dated 02.12.2021 in OA No. 175 Of 2018. The Committee shall work on transforming the methodology into national statutory policy so that the element of subjectivity in the matter of determination of Environmental Compensation/ EDCA may be eliminated or at least negated and a uniform approach is observed by Statutory Regulators as observed by NGT.

vii. Inflation index, Exchange rate, purchasing power parity, site specific conditions shall also be incorporated while developing the formula for environment damage cost assessment.

viii. CPCB shall share case studies regarding environment damage cost assessment with MoEF&CC for further deliberation as part of the new Committee to be constituted for the purpose..... ”

In view of above, following are the relevant aspects/observations suggested by the Hon'ble Tribunal to be considered by the Specialized Committee in order to determine appropriate

methodology for assessment of Environmental Compensation for loss/damage/degradation to environment:

- i. The **objective of environmental compensation** is that not only the loss and damage already caused, is made to recover and restore but also in future, the said violator may not repeat the kind of violation already committed and others also have a fear of not doing the same else similar liability may be enforced upon them. Unless amount of compensation is more than maximum permissible profit arising from violation, the purpose of environmental compensation would always stand defeated.
- ii. When environmental compensation is to be determined, it is not only the cost of material lost or illegally extracted which has to be determined but it is damage to the environment due to *excavation of huge quantity of material including top soil and damaging the area by removing and disposing unscientifically, and cost likely to be incurred in remediation*, which has to be determined. Further *pollution caused to water and air* also to the extent possible, must be remediated and its cost would also form part of environmental compensation. Some damage to environment is irreversible. Execution of projects illegally i.e., without having EC under EIA 2006, without consent to establish and to operate, without clearance from other authorities is another aspect to contribute its share in computation of compensation.
- iii. Determination of **nature of cases** involving violation of environmental laws
- iv. Another relevant aspect is whether damage to environment is *irreversible, permanent* or is capable of wholly or partially restoration/remediation.
- v. Assessment of environmental compensation must, not only conform the requirement of restoration/remediation but should also take care of damage caused to the environment, to the community, if any, and should also be preventive, deterrent and to some extent, must have an element of “being punitive”. The end goal is not only to achieve restoration/remediation or to mitigate damage/loss to environment, but also to discourage people/proponents from indulging in the activities or carrying out their affairs in such a manner so as to cause damage/loss to environment.
- vi. To impose appropriate ‘environmental compensation’ for causing harm to environment, it is significant to understand the kind and nature of **‘Harmness cost’**. This includes risk assessment. The concept of risk assessment will include human health risk assessment and ecological risk assessment.
 - I. For the purpose of *human-health risk assessment*, it comprised of three broad steps, namely, planning and problem formulation; effects and exposure assessment and risk categorization. The first part involves participation of stakeholders and others to get input; in the second aspect health effect of hazardous substances as well as likelihood and level of exposure to the pollutant are examined and the third step involves integration of effects and exposure assessment to determine risk.
 - II. Similarly, *ecological risk assessment* is an approach to determine risk of environmental harm by human activities. Here also we can find answer following three major steps, i.e., problem codification; analysis of exposure and risk characterization.
 - First part encompasses identification of risk and what needs to be protected.

- Second step insists upon crystallization of factors that are exposed, degree to exposure and whether exposure is likely or not to cause adverse ecological effects.
 - Third step is comprised of two components, i.e., risk assessment and risk description.
- vii. The **element of economic benefit to company** resulting from violation is also an important aspect to be considered, otherwise observations of Supreme Court that the amount of environmental compensation must be deterrent, will become obliterated.
- viii. Determination should be a **quantitative estimation**; the amount must be deterrent to polluter/violator and though there is some element of subjectivity but broadly assessment/computation must be founded on objective considerations. Appropriate compensation must be determined to cover not only the aspect of violation of law on the part of polluter/violator but also damage to the environment, its remediation/restoration, loss to the community at large and other relevant factors like deterrence, element of penalty etc.
- ix. **Recommendations by CPCB** have not been given in the form of a binding statutory provision. It is also stated that some crucial relevant aspects requiring application of ‘Polluters Pay’, have not been considered by the CPCB. The CPCB has failed to consider that the purpose of determination/computation/assessment of environmental compensation and levy thereof, involve various factors like
- cost of damage to environment,
 - cost needed for restoration/remediation of damage caused to environment,
 - element of deterrent/provincial,
 - Liability arising for violation of statutory mandatory law relating to environment namely requirement of consent, EC and NOC etc.
- x. Compensation regime must be a **deterrent to violators and incentivize eco-friendly proponents**. No one should get profited by violating environmental laws and community should also not suffer for violation of environmental norms by defaulting proponents.
- xi. Though Tribunal said that determination of environment compensation is a dynamic concept and depends on variables, and also directed **CPCB to issue statutory directions** to all States/UT so that they may evolve appropriate mechanism for assessment, but nothing has been done in this regard till date.
- xii. In the case, where violation is multifarious and multicorned, it is always better to provide a **simple approach** of making assessment for damages particularly, when damage to environment is writ large.

Accordingly, following TOR points have been extracted from the directions passed by the Hon'ble Tribunal in the matter of OA no. 125 of 2017 titled as Shri Jammula Chhoudaraiah vs Union of India and others along with other three tagged matters:

- i. To determine appropriate methodology for assessment of Environmental Compensation for loss/damage/degradation to environment, considering all relevant aspects of the matter including observations made and the principles suggested by Hon'ble National Green

Tribunal, Southern Zone, Chennai, vide order dated 02.12.2021 in the matter of OA no. 125 of 2017 titled as Shri Jammula Chhoudaraiah vs Union of India and others along with other three tagged matters.

- ii. The said methodology shall eliminate or at least negate the element of subjectivity in the matter of determination of Environmental Compensation so that a uniform approach is observed by Statutory Regulators in discharge of their statutory duties.”
- iii. To develop a mechanism that can ascertain that no construction activity has been done on site prior to the grant of EC.
- iv. To determine the nature of cases involving violation of environmental laws.
- v. To determine whether damage to environment is irreversible, permanent or is capable of wholly or partially restoration/remediation.
- vi. To discourage people/proponents from carrying out activities that causes damage/loss to environment by confirming the assessment of environmental compensation being punitive in nature that may be more than the maximum permissible profit arising from violation.
- vii. To impose ‘Harmness cost’ that includes risk assessment. The concept of risk assessment will include human health risk assessment and ecological risk assessment.
- viii. To develop compensation regime that acts as a deterrent to violators and incentivize eco-friendly proponents. No one should get profited by violating environmental laws and community should also not suffer for violation of environmental norms by defaulting proponents.
- ix. damage to environment is massive.
- x. The assessment of Environmental Compensation for loss/damage/degradation to environment shall be given statutory status by taking appropriate action.

The EAC after detailed deliberations was of the view that the aspects covered by the Hon’ble Tribunal are very exhaustive and self-explanatory. The EAC further opined that solely relying upon the data provided by the PP without having any physical verification of project site particularly in the case of river valley projects may encourage the project proponent to deviate from the environmental obligations with respect to Environmental Clearance. So, a line of authentication from the respective State Pollution Control Board may be obtained in a step-wise manner i.e., before submitting the proposal for grant of ToR/Environmental Clearance and at the time of submission of Stage-I Forest Clearance (if applicable) after recommendation of the EAC, that no activities have been started at site other than the activities permitted by the MoEF&CC to facilitate the EIA study. The verification report should not be older than 15 days. It is essential to have a robust mechanism to restrict the activities which are not permissible without prior Environmental Clearance under the provisions of the EIA Notification, 2006, as amended.

ATTENDANCE

Sr. No.	Name & Address	Role	Attendance
1.	Dr. K. Gopakumar	Chairman	P
2.	Dr. Uday Kumar R.Y.	Member	P
3.	Dr. Mukesh Sharma	Member	P
4.	Shri Rajeev Varshney	Member	P
5.	Shri Yogendra Pal Singh	Member Secretary	P

APPROVAL OF THE CHAIRMAN

From: kgopa@iisc.ac.in

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Cc: "Saurabh Upadhyay" <saurabh.upadhyay85@gov.in>, "Sourabh Kumar" <sourabh.9@govcontractor.in>

Sent: Tuesday, September 6, 2022 6:27:46 PM

Subject: Re: Draft MOM of the 32nd EAC meeting held on 12.08.2022 for perusal and comments-reg

Dear Yogendra

Yes I approve the MOM of the 32 nd EAC meeting.

With regards

Gopakumar

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