

Minutes of the 93rd Meeting of the Expert Appraisal Committee (EAC) for River Valley and Hydroelectric Projects held on 2nd May, 2016 at Indus Meeting Hall, Ground Floor, Jal Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 110003.

The 93rd Meeting of the EAC for River Valley and Hydroelectric Projects (RV &HEPs) was held on 2nd May, 2016 at Indus Meeting Hall, Ground Floor, Jal Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 110003. The meeting was chaired by Shri Alok Perti, Chairman, RV &HEPs. 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:

Agenda Item No.1: Welcome by Chairman and confirmation of Minutes of the 92nd Meeting of EAC held on 28th -29th March, 2016. Thereafter, following agenda items were taken-up:

Agenda Item No 2.1: Nandprayag-Langasu HEP (100 MW) on Alaknanda River in Dist. Chamoli, Uttarakhand by M/s UJVN Limited- for consideration of Environmental Clearance.

1. The Nandprayag-Langasu HEP (100 MW) is proposed in the middle reach of the Alaknanda Basin to meet the requirement of power shortage in the Northern region in general and in the country as whole. The project has been conceptualized as a Run-of-the-River (RoR) scheme with 162 m wide gated barrage comprising of one under sluice (11.6 m wide) and 7 barrage bays of 18m width each with 10.3m height above the river bed and utilising a design discharge of 268.46 cumecs of Alaknanda river for power generation. The Project Site is located on NH-58 (New Delhi-Badrinath) almost midway between Karanprayag and Nandprayag in district Chamoli of Uttarakhand State and is about 190 Kms from the nearest railhead Rishikesh. The nearest airfield Jolly Grant is about 210 km from the barrage site. The barrage site is approachable from NH-58 (Delhi-Badrinath Road) upto Nandprayag and thereafter by Nandprayag – Devikhal – Gopeshwar district road.
2. During the presentation, Project Proponent (PP) informed that Hon'ble Supreme Court vide orders dated 12-08-2014 and dated 12.10.2015 clarified that ban imposed on Hydroelectric Power Projects (HEPs) was applicable to 24 HEPs mentioned in the report of Wildlife Institute of India, Dehradun (WII). Further as Nand Prayag Langasu HEP is not listed in the said 24 project, this project may be considered for Environment Clearance.
3. It was informed that Terms of Reference (ToR) for the project was issued in October 2010 for 2 years. Repeated communications were made with MoEF & CC for extension of TOR from October 2012 onwards upto December 2016 by the Project Proponent, but no communication was received from MoEF & CC. Therefore, in

anticipation of the extension of the ToR, UJVNL allowed continuing the EIA/EMP studies on the basis of earlier issued TOR and Public hearing was also conducted on 21.12.2015. The EIA/EMP reports were submitted in MoEF & CC in October 2015 for consideration prior to expiry of 5 years term from the date of issue of TOR.

4. EAC intimated that the TOR of the Project was issued in October 2010 and expired in October 2012. Extension of ToR has yet not been granted by MoEF & CC. Even after consideration of maximum extendable time limit of 5 years, the proposal can't be considered as Public hearing has been convened after expiry of 5 years term.
5. The project proponent clarified that extensive flood of 2013 led to unavoidable delay. Further, Hon'ble Supreme Court order dated August 2013 directed not to issue any clearance for hydro projects. This led to unavoidable delay as no work could be done during this period. Under these circumstances, the two years' time should be exempted and extension be granted upto December 2016. EAC clarified that it cannot recommend for time extension over and above 5 years terms irrespective of the circumstances, however issuance of fresh ToR may be considered subject to utilisation of data upto 3 years old.
6. Project proponent further requested to consider the public hearing and allow exemption from fresh public hearing in view of the different reasons mentioned earlier.

EAC after detailed deliberation recommended for issuance a fresh TOR with the following additional studies:

- i. The EIA/EMP studies for additional requirement as depicted in the model ToR of MoEF&CC effective from April 2015 shall be carried out.
- ii. Skill mapping of project affected families shall be carried out and suitable provisions shall be made in R&R plan.
- iii. Minimum e-flow discharge release as MoEF & CC has mentioned in its affidavit 05.11.2015, 06.01.2016 and as amended in 14.01.2016 or as decided by Hon'ble Supreme Court may be considered.
- iv. The project proponent may be allowed to use earlier data not older than three (3) years.

EAC recommended for issuance of fresh TOR with above terms and conditions. The request for exemption from public hearing may be placed before the EAC once the EIA/EMP is prepared afresh. Depending upon the nature of changes noticed in the EIA/EMP a view may be taken by the EAC on the matter.

Agenda Item No 2.2: Berkheda Medium Irrigation Project in District Dhar, Madhya Pradesh by Water Resources Division Manawar, M.P. - for consideration of ToR.

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

Agenda Item No 2.3: Bedti-Varada River Link project in Raichur District, Karnataka by M/s Karnataka Neeravari Nigam Ltd (KNNL) - for consideration of ToR.

The project proponent made a detailed presentation. The project envisages diversion of surplus waters from west flowing rivers of Karnataka to drought hit regions on the eastern side of the Western Ghats. Bedti-Varada link project is aimed at diverting 242 M.cum (8.55 TMC) of surplus waters of Bedti basin to water short Tungabhadra sub-basin to be utilized under Tungabhadra Project command. Bedti River originates in Dharwad district and flows towards west side for about 171 km to join Arabian Sea. The total catchment area of Bedti river is 3878 sq.km. The water balance studies carried out by NWDA indicate that while the Bedti basin is surplus to the order 2428 M.cum (85.79 TMC) at 75% dependability. The Tungabhadra basin is deficit to the tune of 303 M.cum (10.70 TMC) at 75% dependability. The intensity of Irrigation is very less in the Tungabhadra Left Bank Canal presumably due to insufficient water. Keeping in view the objectives of national perspective and in the light of the proposals made by the other organizations for transfer of surplus water of Bedti River could be diverted to Tungabhadra sub-basin.

2. The Pattandahalla stream and Shalmalahalla stream which are tributaries of Bedti river were identified as possible storage sites for transfer of surplus waters from Bedti river. The diverted water will be carried through Varada river to Tungabhadra for use in left bank canal command. If required it can be utilized for domestic and industrial purpose to enroute villages and towns and these options will be considered while preparing the DPR based on the requirements.

3. The proposal comprises two dams viz., Pattanadahalla on Pattanadahalla stream and Shalamalahalla on Shalamalahalla stream. Reservoirs are proposed to be connected by an 8.5 km long conveyance system including 2.2 km long tunnel. The water diverted from pattanadahalla reservoir will be let into a stream at the exit of the conveyance system. Leading to Shalamalahalla reservoir. The combined surpluses of Pattanadahalla and Shalamalahalla are proposed to be diverted from Shalamalahalla reservoir and let into a stream leading to Varada River at the end of 14.83 km long conveyance system which includes 6.8 km long tunnel. The diverted water will be lifted by 123.7 m in three stages before letting into Varada River. The requirement of power for lifting the water works out to 61.10 MW.

4. The annual irrigation proposed under the link is 60,200 ha under left bank canal command of Tungabhadra irrigation project in the drought prone Raichur district of Karnataka. The diversion through the link is proposed in a period of 214 days from June to December. The canal is designed for carrying peak demands in the month of August. Two power houses with an installed capacity of 1.8 MW each are proposed at the toe of Pattanadahalla and Shalamalahalla dams. These power houses utilise the water released towards downstream requirement during the period from June to October for power generation.

5. According to the EIA Notification, 2006 and its subsequent amendments dated 25.06.2014, the proposed command area of the project is >10,000 Ha and attracts general conditions. Hence, the proposed project is categorized as 'A' which requires Environmental Clearance from MoEF, Govt. of India. The salient features of the project are as follows;

Name of the project	Bedti-Varada River Link project to provide irrigation facilities for water deficit areas of Tungabhadra Left Bank Canal, Raichur District, Karnataka
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Type of project	Irrigation & Hydro power generation
River	Bedti River
Location of Reservoirs	Pattanadahalla reservoir – 74 ⁰ 41'40"E, 14 ⁰ 40'5"N Shalmalahalla reservoir - 74 ⁰ 48'32"E, 14 ⁰ 42'48"N
Water Utilization	8.5 TMC (242 Mcum) during June - October
Command Area	60200 Ha of existing Tungabhadra Left Bank Canal
Power generation	1.8 Mw x 2 = 3.6 MW
Annual Avg. Rainfall in the catchment	Pattanadahalla reservoir – 2926 mm Shalmalahalla reservoir - 2688 mm
Cost of the Project	240.27 Crores
Total Land requirement	1073 Ha
Submergence	Pattanadahalla reservoir – 185 Ha (154 forest, 24 cultivable, 16 non agriculture use) Shalmalahalla reservoir - 820 Ha (642 forest, 106 cultivable, 72 non agriculture use) Hulgol Village, Sirsi Taluk, Uttara Kannada District (178 Households)
Forest Land	796 ha
Protected Areas within 10 Km	1. Shalmala Riparian Ecosystem Conservation Reserve notified under section 36A of the Wildlife (Protection) Act, 1972 is part of the proposed Shalmalahalla Reservoir. 2. Bedti Conservation Reserve notified under section 36A of the Wildlife (Protection) Act, 1972 is at a distance (aerial) of 8.9 km from the proposed Shalmalahalla Reservoir.
Power requirement	61 MW, Source - MESCOM
B.C Ratio	1.55

After detailed deliberations, EAC observed the following and decided to reconsider the proposal after submission of following information:

1. The hydrology details of Tungabhadra river, Varada river along with Bedti River to accommodate additional 8.55 TMC of water.
2. Impact of adding additional 8.55 TMC of water to Varada river on river morphology and downstream structures already planned / constructed on Varada and Tungabhadra river.
3. Presently, Tungabhadra Left Bank Canal is facing a deficit of 29.42 TMC of water. Substantiate such huge volume of deficit with suitable study reports.

4. The project proponent presented the pre-feasibility report prepared by NWDA in 1995 and hence it is advised to finalize the technical aspects of the project (DPR) to ascertain the project specific ToRs by EAC.

Agenda Item No 2.4: Jameri HEP (60 MW) in West Kameng District of Arunachal Pradesh by M/s KSK Jameri Hydro Power Private Limited - for consideration of ToR.

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

Agenda Point 2.5: Pancheshwar Multipurpose Project in Uttarakhand by M/s Pancheshwar Development Authority-for consideration of ToR.

The project proponent made a detailed presentation on the project and informed that the project was appraised for ToR in 83rd meeting held on 24-25 April, 2015.

2. The Pancheshwar Multipurpose Project (PMP) is envisaged on river Mahakali (known as Sarada in India) where the river forms the international boundary between India and Nepal, dividing the Far Western Development Region of Nepal from the Uttarakhand State in India.

3. It is a bi-national scheme, primarily aimed at energy production. In addition, project aims at to enhance food grain production in both the countries by providing additional irrigation resulting from augmentation of dry season flows. Due to moderation of flood peak at reservoir(s), incidental flood control benefits for both the countries are also envisaged from the project.

4. The project would comprise of a rock-fill dam with central clay core of 315 m height from the deepest foundation level. It shall have two underground powerhouses, one on each bank of Mahakali River with the total installed capacity of nearly 5600 MW. The power plant at main dam will be operated as the peaking station to meet energy demand in India and Nepal. A re-regulating dam at Rupaligad, 25 km downstream, is proposed to even out powerhouse releases into continuous river flows and irrigation demands in the downstream

5. The project proponent presented the response to issues raised in the 83rd EAC meeting held on 24-25 April, 2015:

- The project is being promoted by Pancheshwar Development Authority (PDA) constituted under Article-10 of the Mahakali Treaty between India and Nepal. The Pancheshwar Development Authority is the project proponent, a joint entity of India and Nepal.
- It has been clarified by National Ganga River Basin Authority (NGRBA) vide their letter no Z-14012/3/2015-FM(Part-2)/828-31 dated 18th March 2016 that the location of Pancheshwar Multipurpose Project does not fall under the eco-sensitive zone.

- NMCG has further informed that the ban on environmental clearance to Hydro Power Projects in Uttarakhand was applicable only to the projects in Bhagirathi and Alaknanda River Basins. Whereas, the Pancheshwar Multipurpose Project is located in Sarada River Basin. As such the ban is not pertaining to it.
- EAC recommended that an Integrated EIA study covering Indian and Nepal portion be presented for obtaining Environmental Clearance.

After the detailed deliberations, the EAC noted that under the present dispensation there is no provision for giving TORs for part of any project. Since this is a special case where a project is proposed to be implemented by a joint establishment agreed to by India and Nepal the matter needs a special consideration. In order to ensure that studies on preparation of EIA/EMP are not delayed the EAC recommends that TOR for the portion of project falling in India subject to the following conditions:

- i. A joint mechanism be set-up for considering the assessment of environmental impact of the full project. While considering the full project by the proposed joint mechanism a need arises to modify the TORs the same may be consider by the EAC for modification of TORs. The EIA/EMP prepared for the full project by the Project Proponent should be placed before the entity established through the joint mechanism mentioned earlier for examination and for recommendation to be given to the Ministries of Environment in both countries for acceptance.
- ii. The EIA/EMP studies as depicted in the model ToR of MoEF&CC effective from April 2015 shall be carried out.
- iii. Skill mapping of project affected families shall be carried out and suitable provisions shall be made in R&R plan.
- iv. Minimum e-flow discharge of 20%, 25% and 30% should be planned for Lean season, Non-lean season and monsoon.

Agenda Point 2.6: Lower Orr Dam under Ken-Betwa Link Project-Phase-II, Water Resources Department, Govt. Of Madhya Pradesh and M/s National Water Development Agency for reconsideration of EC.

The project proponent made a detailed presentation on the project and informed the Expert Appraisal Committee for River Valley and Hydroelectric Projects that project was appraised in 91st meeting held on 8-9 February, 2016. It was clarified that the Lower Orr is an independent project of Govt. of M.P and is not related to Ken-Betwa link project, however, as and when Ken-Betwa link project materializes, the Lower Orr project shall become an integral part of Ken-Betwa Link Project Phase-II.

2. It was noted that the project is proposed across Orr River which is a tributary to Betwa River near the village Didauni on the border of Shivpuri & Ashok Nagar Districts in Madhya Pradesh. The main objective of the Lower Orr project is to provide irrigation and domestic water supply to water deficit areas of Shivpuri and Datia Districts of Madhya Pradesh. The proposed dam site is located at a distance of about 6 km

from Chanderi - Pichhore Road. The total catchment area of Orr river upto Lower Orr dam is 1843 Sq. km. The 75% & 50% dependable annual yield of the sub-basin upto the proposed dam site has been assessed as 362.53 MCM and 501.15 MCM respectively.

3. The project envisages construction of a composite dam. In the proposed composite dam, the concrete dam portion is 487 m long with 247 m long spillway & 240 m long Non Overflow blocks. The earthen portion of dam is 1731 m long with a maximum height of 45 m. A 91.260 Km long main canal has been proposed on the left bank of river. The FRL of the Lower Orr project is kept as 380 m. The total submergence area is about 2723.70 ha. It is proposed to provide irrigation facility to 67,570 ha in Shivpuri and Datia Districts with 150% irrigation intensity utilizing 329.67 MCM. Beside 6 MCM water will be provided for drinking water supply to the enroute villages and towns in the vicinity of the canal. About 1.65 lakh people will get drinking water facility.

3. The total land requirement for proposed project is 3730 ha. The total land coming under submergence area and canal network is 2723.70 ha and 1006 ha respectively.

4. The flows for various dependable years like 50%, 75 % and 90% are 501.15 MCM, 361.965 MCM and 263.98 MCM respectively. A provision of 6 MCM of water has been kept for providing drinking water to enroute villages and towns of Lower Orr canal off taking from proposed Lower Orr dam.

5. The project proponent made a detailed presentation in response to issues raised during the 91st EAC meeting. The key issues raised covered were:

- A detailed Livelihood Plan has been prepared as a part of SIA Report and is outlined as Chapter-6 of Volume-II covering Social impact Assessment Report. As a part of the plan, training to one member from each PAF is envisaged
- Skill mapping shall be done during the implementation of Livelihood Plan
- It was confirmed that as a part of SIA report, R&R plan has been prepared as per Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. The approval for R&R plan shall be taken at the time of implementation from the State Government, who are also the implementing agency.
- Fisheries reported from the study area are mainly carps, cat fishes, murrels and trace fishes, which belongs to 12 families, 16 genera and 22 species. The fish communities occurring in the area are broadly categorized in to four groups. Among them murrels are the dominant group which constitute 52% followed by carps (28%), cat fishes (7 %) and miscellaneous /trash fishes (13%).
- As a part of the study, the recommended Environmental Flows for Lower Orr Project are given below:

Month	Average Monthly discharge for 75% Dependable Year (Mm ³)
June	6.422
July	24.180
August	9.633
September	1.157
October	1.179
November	0.956
December	0.449
January	0.635
February	0.260
March	0.026
April	0.001
May	0.000
Total	44.898

- An amount of Rs. 8.09 crores earmarked for Environmental Management Plan includes:
 - a) Rs. 2.50 crores for fish hatcheries;
 - b) Rs. 2.20 crores for fishing boats, fish nets, training, etc.
 - c) Rs. 2.75 crores for fish transport and post harvest facilities; and
 - d) Rs. 64 lakhs for other aspects

Thus, it was clarified that a detailed Fisheries Management Plan covering fish hatcheries, fishing boats, fish nets, training, fish transport and post harvest facilities has been prepared.

- The Lower Orr dam is an independent project of state government of Madhya Pradesh proposed on a tributary of Betwa and decided to include under Ken-Betwa link project, Phase-II. There will not be any adverse impact of this project on Ken-Betwa link project and vice-versa. The recommendation of EIA study for Ken Betwa Link Project pertaining to Lower Orr Project shall be adhere to.
- It is requested that the Environmental Clearance (EC) for the project may kindly be accorded as per the approved TOR for which final EIA & EMP report has already been submitted and appraised in the 91st EAC meeting held on 8-9 February, 2016. For additional command area considering the pressurized irrigation, the case will be processed separately.
- EIA Report has been prepared as per the approved ToR and EIA report for additional command area shall be prepared separately and then public hearing through SPCB shall be conducted.

After detailed deliberations, the EAC recommended the project for grant of Environmental Clearance as per the ToR approved for Lower Orr Project.

Agenda Item No 2.7: Chenab River Basin Study in Himachal Pradesh by M/s R.S Envirolink Technologies Pvt. Ltd - for consideration of Draft Final Report.

The draft final report of Chenab River Basin Study was discussed in detail during 91st EAC meeting held during February 2016. EAC in its meeting made certain observations, which have been incorporated in the report and accordingly final report to be submitted to MoEF & CC for further consideration. It was indicated by representative of CWC that as the rivers of Indus Basin are covered under Indus Water Treaty with Pakistan, MoEF & CC may get the views of Indus Commission of India on the report.

2. Accordingly, a copy of Chenab RBS has been sent to all the members of EAC. The Consultant in 93rd EAC made detailed presentation incorporating comments/suggestions of EAC observations. Detailed discussion on final recommendation of basin study was deferred to the next meeting as members of EAC, with expertise on Biodiversity, Fisheries, Forestry etc. were not present in the meeting. The matter has been deferred to next EAC meeting.

Agenda Item No 2.8: Beas River Basin Study in Himachal Pradesh- for consideration of reduction in time frame.

The matter of reduction of time frame for Beas basin study was discussed in details by the EAC. The Consultant informed that the work order for the study was awarded by Ministry of Environment, Forest & Climate Change (MoEF&CC) in February, 2016. The work for the study has already been started by the Consultant. The original time frame as per the work order is to submit an interim report in 4 months, draft final report in 8 months and final report in 16 months. Study is to be concluded in 24 months time after review, approvals and acceptance.

After detailed deliberation, EAC has recommended the following:

- a)** The study should involve collection of three season primary baseline data for terrestrial and aquatic ecology.
- b)** The Study should be completed in 15 months period from the date of award of Work Order.
- c)** The interim report and draft report should be submitted in 4 months and 8 months respectively from the date of issue of work order and draft final report should be submitted in 15 months from the date of work order.

**93rd MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY
AND HYDROELECTRIC POWER PROJECT**

DATE & TIME : 2nd May, 2016, 10.30 AM
VENUE : INDUS MEETING HALL, JAL WING, GROUND FLOOR,
 INDIRA PARYAVARAN BHAWAN, NEW DELHI

EAC members

ATTENDANCE SHEET

Sl. No	Name of Member	Contact No / Email
1.	Shri Alok Perti, Chairman	9868120880
2.	Sh. Vinay Kumar, Central Water Commission Sewa Bhawan New Delhi-110066	9868123768
3.	Dr. Vijay Kumar Ministry of Earth Sciences New Delhi-110003	vijay.kumar66@nic.in vijay.moes@gmail.com
4.	Shri Manoj Kumar Gangeya Member Secretary, MOEF&CC	9405801777
5.	Dr. C.Palpandi, Dy. Director. MoEF&CC	8220725672