Minutes of the 80th Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects constituted under the provisions of EIA Notification 2006, held on 11th -12th December, 2014 at Brahmaputra Meeting Hall, 1st Floor, Vayu Wing, , Indira Paryavaran Bhawan, Jor Bagh, Aliganj, New Delhi110003

The 80th Meeting of the Expert Appraisal Committee (EAC) for River Valley and Hydropower Projects was held during 11th -12th December, 2014 at Brahamaputra Meeting Hall, 1st Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh, Aliganj, New Delhi110003. The meeting was chaired by Shri Alok Perti, Chairman. Dr. Vijay Kumar & Dr. S. Sathya Kumar, member could not attend the EAC 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 (11.12.2014)

1. **Agenda Item No.1 :** Welcome by Chairman and Confirmation of Minutes of the 79th EAC Meeting held on 13th-14th November, 2014. The Minutes of 79th EAC meeting was confirmed as was circulated. Thereafter, following agenda items were taken up:

Agenda Item No. 2.1 Savanur Integrated Micro Irrigation Project at Kalasur Village, Savanur Taluk, Haveri District, Karnataka- For consideration of ToR

The project proponent made a detailed presentation on the project. The proposed Savanur Integrated Micro Irrigation Project is proposed by considering Varada river as source. The water lifting location is Kalasur Barrage built across the Varada river which is a tributary of Tungabadhra. The proposed Lift Irrigation Scheme is at a distance of 57.50 km upstream of the confluence of the Varada with the Tungabhadra river. The proposed project shall provide drip irrigation to 15,500 Ha of agriculture land covering 30 villages of Savanur Taluk in Haveri District of Karnataka during Khariff season as well as filling up of 11 Minor Irrigation (MI) tanks and also supply drinking water to deficient areas in the region. The project has been accorded administrative approval for utilization of 1.5 TMC of water vide Govt of Karnataka order no. WRD 12 MMB 2013 dated 30.10.2013.

The proposed project is intended to irrigate dry lands in villages of Savanur Taluk of Haveri district. The villages coming under this scheme are poverty stricken and drought prone area. The agriculture is the primary economic activity and only source of livelihood for the people. The people of the region have no other employment opportunities except agriculture. Hence providing irrigation and stabilizing the agricultural production, provides a much needed relief to the people.

Crops such as Jowar, Cotton, Groundnut, Sunflower, Pulses and Chilly are proposed to be cultivated under the scheme in the Command Area. The Bankapura Peacock Conservation Area notified under Wildlife (Protection) Act, 1972 is located at a distance of 3.6 km from the boundary of the command area. Hence the proposed project is categorised as 'A'.

The proposed project requires 33.5 Ha of land for construction activities. However, no forest land is required and no submergence will occur as the water will be lifted from existing barrage and only the jackwell will be constructed for drawal of water from the barrage (Kalasur Barrage). The Rising Main, Main Delivery Chambers and electrical works are the other components of the project to be executed. The existing vented barrage was constructed by Minor Irrigation Department, Govt of Karnataka in 2011 which will be used for the proposed project. The proposed project cost is estimated to be Rs. 690 Crores. The total power required for the project is about 10 MW, which will be sourced from HESCOM.

About 1.5 TMC (42.45 Mcm) of water will be drawn from the upstream of existing Kalasur Barrage near Kalasuru village in Haveri district from Varada river. Out of 1.5 TMC (42.45 Mcm) of water, 1) 1.35 TMC (38.20 Mcm) will be used for drip irrigation, 2) 0.091 TMC (2.57 Mcm) for filling up of 11 MI tanks and 3) 0.059 TMC (1.6 Mcm) will be used for drinking water purposes. The 75% monthly dependable flow is considered for the proposed project and the benefit-cost ratio of the project is calculated as 1.44 and is techno-economically feasible.

The Water so drawn from Jackwell will be delivered to 4 Main Delivery Chambers and further it will be pumped to 16 Blocks by using PVC/HDPE pipe distribution networks, then to sub block/outlet units. Each outlet unit having an extent of 10ha, which in turn connected by network of drip irrigation system on farms. The Drip Irrigation system operates on daily basis, in total 16 hrs and 16 shifts are possible in a day. For every shift / section 0.63 ha area will be irrigated under each outlet unit of 10 ha. The discharge of outlet is 5.48 lps. It is also proposed to form 62 Water User Associations with one Federal body to take care of the Operation and Maintenance of the system. The entire project will involve

use of Supervisory Control and Data Acquisition System(SCADA) with Variable Frequency Drives (VFD) for pumps. This will increase the efficiency of electric consumption and optimization of the operation of the scheme.

The proposed project will have following benefits;

1. By adopting drip irrigation , there will be considerable saving in water and the water use efficiency of the proposed project will be around 86%.
2. The proposed project is in line with the State Water Policy which promotes drip and sprinkler irrigation to improve water use efficiency.
3. There will be considerable reduction in area of land acquisition as it will be buried piped system. Zero displacement of families and R&R are another good features of the project.
4. No tree cutting and no forest land is required for the project.
5. Filling of MI tanks not only improves the ground water table but, also provides drinking water to villagers, cattles etc.
6. Totally 9500 families will be directly benefitted (47500 Population).

The EAC recommended the TOR clearance for the project, with the following additional issues to be covered in the EIA study:

- The Project Proponent has to submit the clearance/NOC from Minor Irrigation, Department, Government of Karnataka for utilization of existing barrage and stored water for the irrigation purpose. The drawl of water for irrigation should not be in conflict with drinking water requirement.
- As per OM dated 20.08.2014 of the Ministry, the project proponent shall have to submit NOC from Chief Wildlife Warden/approval of NBWL as the case may be.
- Bio-diversity study shall be carried out by an Institute as per list published by MoEF&CC.
- Release of minimum e-flow is to be ensured as per prevailing norms of 20%, 25% and 30% during three seasons and release should be through unregulated means. A site specific study is to be carried out for assessment of e-flow.

Agenda Item No. 2.2 Lower Tapi Project in Jalgaon District of Maharashtra- For consideration of Environment Clearance

The Consultants and Project Proponents presented the proposal regarding Environment Clearance of Lower Tapi Project in 80th Meeting of Expert Appraisal

Committee for River Valley and Hydroelectric Power Projects on Dated 11/12/2014 as follows:

A. Project Description

Tapi Irrigation Development Corporation (TIDC), Jalgaon Irrigation Project Circle, Hatnur Canal Division, Chopda proposes to lift and utilize the water of Tapi River for irrigation, drinking and industrial purpose under Lower Tapi Project by constructing a Gated Weir (Barrage) across river Tapi. The project is designed to irrigate four talukas namely Amalner, Dharangaon, Parola and Chopda of Jalgaon District and two talukas namely Dhulia and Shindkheda of Dhule District. Total Irrigable command area (ICA) is 25657 ha having Culturable command area (CCA) 32072 ha and Gross command area (GCA) of 40091 ha respectively. This includes 11 Nos of existing Lift Irrigation Schemes covering 8,284 ha command area. These schemes were sanctioned by NABARD and lying in the vicinity of the proposed site. The availability of water for these schemes was very uncertain. Therefore, it was decided to stabilize these schemes through assured water supply under the proposed Lower Tapi Project.

Salient Features of Lower Tapi Poject

Name of Project	**Lower Tapi Project**
A) River Basin details	
River Basin	Tapi
State	Maharashtra
District	Jalgaon
Taluka	Amalner
Village near by	Padalse
Latitude	21^0 11'15" N
Longitude	75^o 00 '30" E
B) Project Area Reference	
Toposheets	46(O/4, K/11, K/12, K/15, K/16)
C) Access to the Project	
Nearest Village	Padalse
Rail head	Amalner, 18 Km
Nearest Air port	Aurangabad- 240Km
International Airport	Mumbai- 415 km
Irrigation ha	
Gross Command area (GCA)	40,091 Ha
Culturalable Command Area (CCA)	32,072 Ha
Irrigable Command Area (ICA)	25,657 Ha
Area under irrigation	
Details of irrigable command area	
Command Area under Tal-	9867 Ha

Amalner	
Command Area in Tal- Dharangaon & Parola	2800 Ha
Command Area under Tal- Chopda	4706 Ha
For stabilizing Command Area under 11 Nos Existing L.I. Schemes	8284 Ha
Total	**25657 Ha**
D. Proposed Water Utilization from Project	
Irrigation Requirement	184.36 Mcum (6.51 TMC)
Drinking water supply for Jalgaon and Dhule District for existing schemes and future provision- (12.724+25.896) Mcum	38.62 Mcum (1.49 TMC)
Industrial water supply for Jalgaon and Dhule Dist.	28.15 Mcum (0.99 TMC)
Storage losses	47.00 Mcum (1.66 TMC)
Total Utilisation	294.52 Mcum (1.66 TMC)
E. Spillway	
Type	Broad crested gated spillway in colgrout masonry
Peak designed flood (Inglis flood 12665 A)	50881 Cumecs
Height over crest for design flood	16.76 m
Length of spillway	535.65 m(Ch. 650.85 to 1186.50 m)
Foundation level R.L.	127.00 to 130.00 m
Invert bucket R.L.	128.50 m
Maximum height of ogee	12.24 m
Total qty of masonry	0.2425 Mcum
Total qty of concrete	0.205 Mcum
Type of gate	Radial gates
Size and Nos of gate	23 Nos (18.30x16.76 m)
Width and No of piers	21 Nos of 4.75 m & 3 Nos of 5.00 m
F. Controlling Levels	
a. T B L	159.85 m
b.MDDL	139.24 m (Crest level is considered as MDDL)
c. HFL	157.70 m
d. FRL	152.38 m
e. Crest Level	139.24 m
f. River bed R.L.	132.00 m
g. Free Board	5.32 m
G. Capacity	
Full/ Live Storage	262.58 Mcum
Minimum Draw Down Level Storage	12.97 Mcum

Total area under Submergence	3737 ha including nalla and river
Village affected	6 villages fully and 5 villages partially

B. Compliance of observation raised by EAC during 14.02.2014 in EAC meeting:

Observation 1: Wildlife and avifauna section is very sketchy and no methodology for study not mentioned. Sample sites are to be shown on map. No sources of secondary information have been mentioned. Species like Tiger have been indicated to be present in the area. This needs to be ascertained since Tiger's presence indicates a high value of the area from bio-diversity conservation angle. The list of avifauna is very deficient with only 17 species listed. The data is to be for 3 seasons.

Reply 1: Ecology Study for three seasons was conducted. The list of Flora and Fauna found in the **Forest Division (Dhule)** was collected from the **Working Plan of the division** for reference. The details of phytosociological sampling locations are shown as below:

Code	Name of Study Site	Area (km^2)	Distance from Dam
Site-1	Mahadev Dondvade (Dense Jungle)	110.12	16 Km (NE)
Site-2	Dam Site	5.45	-
Site-3	Budruk Reserved Forest	66.24	22 KM (S)
Site-4	Rajvad Reserved Forest	72.05	27 KM (SW)
Site-5	Palasdad Reserved Forest	33.28	20 KM (SW)

The reference of Tiger was mentioned in the earlier report as per wild life survey carried out in 2005 by forest Department for entire Jalgaon Division. As per the survey carried out during the study period and discussion held with the villagers and forest guards, no such animal was reported to be present in either study area or nearby forest areas.

The common birds that could be observed during the study period were Common Myna, House crow, Koel, Indian robin, sparrow. There are 33 species in the list of avifauna.

Observation 2: The existing status of the report is rather poor as a number of issues on geological aspects are being neglected. The proposed command area has not been clearly given. It is understood that many existing lift irrigation schemes are not functioning in Maharashtra. There are number of complaints from local committees which seem to be serious considering huge expenditure on earlier irrigation projects in Maharashtra. Hence, the entire study should be carried-out afresh.

Reply 2: The geological aspects in details have now been incorporated in modified DPR and submitted to CWC on dated 08/02/2013. The total command area is 25,657 ha.

Observation 3: The project will affect 11 villages (6 villages fully and 5 villages partially), and a very large number of families will be displaced. There should be a detailed study on social impact of the project. As per NRRP 2007, "whenever it is desired to undertake a new project or expansion of an existing project, which involves involuntary displacement of four hundred or more families en masse in plain areas, or two hundred or more families en masse in tribal or hilly areas, DDP blocks or areas mentioned in the Schedule V or Schedule VI to the Constitution, the appropriate government shall ensure that a Social Impact Assessment (SIA) study is carried out in the proposed affected areas in such manner as may be prescribed". Therefore, a Social Impact Assessment (SIA) is mandatory for Lower Tapi Lift Irrigation Scheme as it will cause en masse displacement of inhabitants.

Reply 3: Detailed Study of Social Impact Assessment was done based on project affected area, project area, periphery area by Department of School of Environment & Earth Sciences, North Maharashtra University Jalgaon (M.S) and details have been furnished in the Report.

Observation 4: Regarding the Rehabilitation & Resettlement plan, it is suggested that the project proponents should not restrict themselves only to the R & R Plan of the Government of Maharashtra, 1986 and 1999 (as mentioned in Chapter 7, page 120 of the report submitted), rather they should consult the NRRP 2007, and make provision to have the best of both national and state government policies.

Reply 4: As per the Social Impact Assessment study done in the area, regarding R & R plan project proponent is not restricting to Maharashtra Act -1999. Project Proponent will select best policies of Maharashtra R & R Act- 1999 & NRRP - 2007. Now for R & R activities it is mandatory to implement New Act of Right to fair

compensation and transparency in Land Acquisition, Rehabilitation & Resettlement Act - 2013. And compensation and package will be worked out accordingly.

Observation 5: In the revised check list on Page-5, explain: "Financial return at the end of 10th year after completion is 0.213". Vide Page-9 Item-D, the return from irrigated area is shown to be about 6 times of the return before irrigation. This should be based on higher crop productivity. Project proponent (PP) to give some information on the irrigated area productivity of some crops assumed for project design, its corroboration from any other existing irrigation projects in Maharashtra for the same crops and the corresponding unirrigated area productivity.

Reply 5: The productivity of most of the crops considered before & after irrigations are same. But, increase in area of perennial crops like Banana & Sugarcane from 0.2% to 3% & 0.25% to 3% respectively, resulted in increase of income. Also increase in area of two seasonal crops like L.S. Cotton & T.S. Chilies altogether from 1.55% to 14% resulted in increase of income. As per approved cropping pattern area of cash crop increased. Thus the income increases. Details of before and after irrigation cropping pattern which are approved by Agriculture Commissioner Government of Maharashtra and also Deputy Commissioner (Crops), Ministry of Agriculture, Government of India.

Observation 6: It is seen from Pages-9, 10 that 50% irrigation development will be accomplished in the last two years of the 10-year project completion period and the remaining 50% would have been completed during the first 8 years. In the same way, the PP to give a year-wise phasing of the activities under CAD and OFD works, which have been standardized by the MoWR, GOI. In other words, expand the information base of Items-1, 2 and 4 under C on Page-8 (by including field drains, land consolidation and field rectangularization, land development, conjunctive use of surface and groundwater, rotational water distribution system, details of lining of the water conveyance system if flow irrigation is to be adopted using the lifted water, introduction of water saving pressurized irrigation, etc.) Tables given on Page-14, should accompany a comparison with the corresponding information at the planning stage of the D/S projects to know the performance of the earlier projects and how that has been utilized in the planning of the new project. Therefore, the information sought under the second bullet may please be collected and shared with the EAC.

Reply 6: Year wise phasing of CAD & OFD works:

- Project proponent proposing the water distributing system with closed conduit only.
- It can be complete in last phase of project.
- Micro irrigation beyond outlet has to be executed by farmers themselves. The outlet will be designed in such a manner that the farmers will get equitable and requisite water in minimum cost.

Performance of the L.I.S. Schemes on D/S of Lower Tapi Project

Sr. No.	Name of Project	Total Utilization (Mcum)	Irrigation Potential	Year Wise Irrigation (Ha)		
				Year	Direct Irrigation (Ha.)	Indirect Irrigation(through wells)(Ha.)
1	Sulwade Barrage- Dist.- Dhule	84.54	8552	2011-12	689	5952
				2012-13	1000	5950
2	Sarangkheda- Dist.- Nandurbar	92.19	11519	2011-12	847	7034
				2012-13	1320	7040
3	Prakasha- Dist.- Nandurba	65.28	10307	2011-12	1545	5367
				2012-13	1460	5700
				2013-14	1500	5700

Observation 7: By citing tabular information of Page-16, a case has been made for not providing canal system but only outlet, if there is no response from the farmers in adopting lift irrigation. But from the same information, it is found that while flow irrigation in the past had steadily increased from 13% (in 1991-92) to 24% (in 1995-96), with an interim high of 27% (in 1994-95); the lift irrigation had been fluctuating between 73% and 87%, with an overall downward trend from 87% (in 1991-92) to 76% (in 1995-96). Hence, it may be more prudent to provide for all structural facilities required for practicing flow irrigation. Providing

outlet only will lead to unscientific and inefficient use of the precious lifted water at a high cost that must be avoided.

Reply 7: All the water distribution system is to be provided with closed conduit up to outlet i.e. for new area & area under co-operative LIS also. There is a little response from farmer for private L.I.S i.e. for lifting the water directly from the reservoir. Hence renovation of existing co-operative L.I.S. and Government aided L.I.S Schemes are now proposed instead. The scenario described was limited only for the Hatnur Project. As far as the geographical conditions of this project are not favorable for flow irrigation. Only lift is possible to fetch the water.

Observation 8: Lift irrigation itself is more expensive than the gravity irrigation (reflected in the approximate per hectare project cost of Rs. 5.00 lakhs/ha of GCA; Rs. 6.00 lakhs/ha of CCA and Rs. 7.5 lakhs/ha of ICA on Page-4). Use of expensive lifted water by letting it flow over the land unguided is not at all justified. The design concept of the project seem to be at least 50 years old and does not take into consideration either the hue and cry all over the world on fresh water crises or the development in irrigation technology and irrigation water management in the last 50 years.

Reply 8: The command of this project cannot fetched by gravity system and it is on higher level. All the water distribution is proposed by closed conduit only. So as to reduce transit losses and increasing efficient. All system will be executed with latest technology available. The micro system will be developed by cultivators themselves.

Advantages and Benefits of Drip Irrigation System

- Water Efficiency
- Ease of installation
- Reduced Pest problem and weed growth
- Versatility
- Root Zone
- Economy

Observation 9: The Consultant has not given their accreditation certificate by NABET in the EIA report. TOR compliance certificate was also not given in the EIA report. Thus, the requirement, as per MOEF Circular no. J-11013/41/2006-IA (II)

(I) dated 4.8.2009 has not been found to have complied. The consultant, who was replying to all the questions of EAC members, has also not been given under discloser section which is not in line with QCI/NABET guideline. This may be explained.

Reply 9: NABET Certificate has been attached.

Observation 10: The committee thus, observed that the information is incomplete. The project in its present form is not a complete lift irrigation scheme and is a scheme of only lifting water with some outlet provisions. The Committee did not find any attempt by the project authority to ensure that the lifted water is distributed efficiently and equitable among the targeted beneficiaries, without causing any secondary problems in the area proposed to be commanded by the lifted water. Therefore, the committee suggested that all requisite documents complete in manner incorporating above information may be submitted for further consideration of the project.

Reply 10: A detailed design of closed conduit for trial block is submitted to MoEF. Project authorities are well aware of costly lifted water to be utilized judiciously with due care. Closed conduit system is proposed. A residual pressure at outlet head will help the cultivators to run micro irrigated system. This system will be developed with latest technology available.

C. Compliance of Points raised By SANDRP

Point 1: The Project work of lower tapi project started on ground as early as April 1999. This has been corroborated from the field, after taking with WRD engineers and most importantly, this has been stated in the white Paper on irrigation Projects brought out by the Maharashtra Government in December 2012.

Reply 1:

Investigations of this project started in 1966. Preliminary Investigation (P.I.) note for Padalse site was submitted to Govt. being more ideal same was approved vide Investigation & Planning (I.P.) department in 1976 subject to some remarks. Accordingly Preliminary Investigation Report (P.I.R.) was submitted to the Chief engineer, Irrigation Department Aurangabad vide S.E. I.P.I. Circle, Aurangabad in 1985. The site was inspected by the Chief engineer, Irrigation Department aurangabad in 1986 and some modifications in the design were suggested. Also Project has been study in various angles for rehabilitation point of view. Finally Government of Maharashtra accorded administrative approval in 1997. The project started in April, 1999. It has been held up from 2001 to 2010 for wants of

sufficient funds .According to (MoEF) 1994 only Major Irrigation Project was included for obtaining environmental clearance. But as per amended notification in 2006 of River Valley Projects culturable command area of the project more than ten thousands hectares, such project requires Environmental clearance and public hearing. Though the project authority has been carried out work on environmental aspects.

Point 2: As per the Engineers who have worked on the project and the white paper worked completed currently is:

- 60% earthen work for the dam completed
- 35% spillway work completed
- Saddle dam completed
- Gates under implementation
- Of the 51 villages to be affected, rehabilitation work only for one village near completion.

Reply 2:

1. The Lower Tapi Project is under construction project started in April 1999.
2. The status of project is as above, except there are 17 villages are affected instead of 51.
3. As Per availability of water entire project is considered in two stages. The first stage of project is consist of 11 villages to be affected.
4. The project is held up since 2001 to 2010 due to want of fund.
5. At present total 04 No of villages rehabilitation work is in progress and will be completed upto December 2014.
6. As per the construction stages of dam, remaining Villages rehabilitation will be completed step by step before completion of the project.

Point 3: Amount spent: 226.44 Crores have been spent already till 31st March 2012, of which 138.81 Crores have been spent on Construction activities.

Reply 3 : The Project has got originally administrative approval of Rs. 142.64 crores (as per DSR 95-96). The latest (third revised) administrative approval is accorded of Rs. 1127.74 crores in September 2009. (As per DSR 2008-09). As per

availability of funds above mentioned expenditure incurred upto 31st March, 2012 is Rs. 138.81 crores on construction of dam out of 226.44 crores. As per the availability of funds the above expenditure is on Construction work, Rehabilitation work, land acquisition & other allied works as per the completion of different activities at different stages.

Point 4: Reason for delay in work: The Government of Maharashtra thinks that the only reason for delay in work on this project is "Lack of Funds". It does not even site environmental Clearance as one of the reasons, understanding the ZERO importance of environmental governance for this project and its officials.

Reply 4:

1. The Project may be delay due to land acquisition, Rehabilitation & lack of sufficient funds.

2. The Construction work is almost held up in between 2001 to 2010 for wants of funds only.

3. This project has got in principle clearance of Central Water Commission (CWC) in year 2011, before that TOR (Terms of Reference) for the same is granted by Expert Appraisal Committee of Ministry of Environment & Forest (MoEF) in year June 2010. Accordingly as per the condition of Central Water Commission (CWC), for TAC clearance of any project, environmental clearance is required. At present project was proposed for EAC meeting in 2012 for environmental clearance which is in progress. The project authority which is all ready involved in the activity of getting ToR in year June, 2010 and submitted final EIA report to and final EC meeting was conducted in December, 2012. So there is no any delay for environmental clearance.

Point 5: White Paper says 51 villages will be affected, whereas, even the MODIFIED Form I on the MoEF website says that only 17 villages will be affected!

Reply 5: As per Administrative Approval of Project there are total 17 villages affected instead of 51. As per availability of water, project is constructed in two stages. For stage-1 total 11 villages are affected (6 fully & 5 partially).

Point 6: The project does not even have clearance from the TAC.

Reply 6: The project has accorded in principle clearance by Central Water Commission (CWC) in year Oct, 2011. At presents for Technically Advisory

Committee (TAC) clearance. From CWC New Delhi, the Detailed Project Report (DPR) was submitted in Feb, 2012 as per CWC guide lines 2010. Finally the TAC Clearance work is in progress under compliances.

Point 7: 63rd EAC directed to carry out SIA. No SIA is a part if uploaded documents.

Reply 7: As per the 63rd EAC meeting, Project Authority is carried out the SIA (Social Impact Assessment) as per NRRP 2007 guidelines by School of Environmental & Earth Science North Maharashtra University, Jalgaon. Same was submitted to MoEF by Letter No. 28/2014 dated 14.02.2014.

Point 8: Vijay Pandhare, Recently retired chief engineers and Whistle blower from water resources Department (Design, Training, Research and Quality Control), Maharashtra Engineering Training Academy (META), has raised serious issues about the safety aspects of Lower Tapi Dam and Construcion work. Shri Pandhare was Executive Engineer, Quality Control in Dhule on Lower Tapi Irrigation Project in 2001. He has sent a report about extremely bad quality of work on Lower Tapi Irrigation Project, but the report was stifled through corrupt officials. In his letter to Water Resource Engineers on 21.09.12 (attached, it is in Marathi and this is a literal translation), he writes:

"if the dam breaks, there are 3 dams below it which will also break and 25-30 villages downstream these will be washed away. Who will be responsible for this? Irrigation Department not concerned about this. When I submitted the report, I was transferred 400 kms away from Tapi Project by Secretary, Water Resource Department."

Reply 8: The construction of dam was started in April, 1999. During the year 2001 at the initial construction stage of dam Shri. Vijay Pandhare as Executive Engineer, Quality control division (WRD) Government of Maharashtra has raised quality control remarks regarding the colgrout masonry. The detailed enquiry in respect of quality of construction of this dam is made by Govt. of Maharashtra by appointing Superintending Engineer, Quality Control Circle, Pune in 2001. This enquiry is completed and the report is submitted to Govt. of Maharashtra. As per the report of inquiry, it is revealed that there are no any findings seen in complaint about quality of work. Superintending Engineer, Quality Control wing has already issued Green Card & O.K. Card for the further construction of dam. The quality control tests are taken periodically during construction, and the work was found as per requisite quality. The floods near about 3000 TMC was passed over the constructed portion of dam from 2001 to up till now. In of dam year 2006 near

about eleven lakh cusecs huge flood passed away over the constructed portion. But there is no any damages are seen and the structure is safely with stand. Chief Engineer, Tapi Irrigation Development Corporation, Jalgaon has already published the notice in Year 2001, about the safety of dam. Hence there is no question regarding the Safety of dam.

D. Violation

The work on project started in April 1999 & continued till year 2001.However; due to lack of funds the work was held from year 2001 to year 2010. The work again started from year 2010 onwards**.** Hence the work was started without the Environment Clearance. This is, as per MoEF&CC, a case of violation. Now the work of the project will start only after Environment Clearance is obtained.

EAC, after lots of deliberations, recommended that the project may be granted EC. However, the MoEF&CC, before granting EC, shall initiate necessary action due to the violation in the project as per relevant OMs in this regard.

Agenda Item No. 2.3 Dugar HEP (449 MW) located in Pangi Valley, Chamba District of Himachal Pradesh – For Capacity enhancement - & change in project domain levels.

Dugar Hydro Power Ltd (DHPL) had obtained First Stage Scoping Clearance for the capacity of 380 MW from Ministry of Environment and Forests vide letter no J-21011/43/2012-IA-I dated 31st December 2012. DHPL had sought for Revision in Terms of Reference of Ministry of Environment and Forests (MoEF) due enhancement in its capacity from 380 MW to 449 MW and change in domain levels.

The capacity of the project has been increased from 380 MW to 449 MW by Central Electricity Authority. The domain level of the Project has been changed from earlier FRL 2105m and TWL 2006m to FRL 2114m and TWL 2015m. The Reservoir Submergence has been increased from 160 ha to 190 ha and the project features have been optimized to minimize the overall forest land requirement from 330 ha to 269 ha. The capacity of the project has been changed mainly on the account of the Environment Flow mandated by Ministry of Environment and Forests. The capacity of the main power house project remains unchanged which is 380 MW. However the capacity of auxiliary units of 69 MW has been made to cater the mandatory Environmental Flow as prescribed by MoEF.

The project is about 12-13 km from Killar town, Head Quarters of Pangi valley, Chamba district. The project can be accessed by all-weather Killar-Kishtwar road running on right bank of the river. The dam site is near Killar, about 4 km upstream from SansariNala (border of Himachal Pradesh and Jammu & Kashmir). Diversion of water is envisaged for a design discharge of 459 m^3/s through two intakes, and 8.10 m diameter pressure shaft on the left bank. A gross head of 99 m is available at the power station, which shall be utilized to generate 380 MW (4 x 95 MW) of power and Auxiliary power house of 69 MW will be constructed in the same cavern to harness the energy of environment release. Auxiliary Power house will release the water close to the dam body.The salient features of the project is mentioned below-

- A dam of 128 m height from the deepest foundation level
- Underground power house having installation of 4 units of 95 MW each
- Auxiliary power house installation of 2 units of 34.5 MW each turbine near Dam body
- Tail race tunnel with 8.1 m finished diameter and 400 m long

The comparison of the new layout and old layout is mentioned below-

Parameter	Unit	Old Layout	New Layout
Capacity- Main	MW	380	380
Capacity- Auxiliary	MW	10	69
FRL	m	2105	2114
TWL	m	2006	2015
Gross Head	m	99	99
Dam Height	m	124	128
Submergence Area including River bed	ha	160	190
Total Forest Land	ha	290	257
Total Private Land	ha	40	12
Total Land Requirement	ha	330	269

DHPL opined to tap the necessary Environmental flow as mandated by MoEF as per the Power potential study approved by Central Electricity Authority. The Project is adhering to the Mandatory environmental flow of 20% in lean season (Dec, Jan, Feb, Mar), 20-30% in non-lean- non monsoon season (Oct, Nov,

April, May) and 30% in Monsoon season (June, July, August, September). This environmental release of 170 cumecs in Monsoon season, 14.26 cumecs in Lean season and 33.57 cumecs of non-lean-non monsoon season shall be utilized to cater the proposed Auxilliaryunits of 69 MW to be built near the Dam body itself. The detail of the environmental flow to be used for Auxiliary units is mentioned below.

Season	Avg. inflow (90% dependable year)	As per HP Govt. Policy (15% of lean season)	% of Inflow as per MoEFToR (Dec-12)	Actual Released as per PPS approved by CEA	Environment release as per Planned capacity
	(cumec)	(cumec)	%	%	(cumec)
Monsoon (June to September)	568.66	10.71	30%	30%	170.36
Lean (December to March)	71.4	10.71	20%	20%	14.2
Non-Monsoon Non-Lean (October, November , April, May)	134.37	10.71	20%-30%	25%	33.57

Based on the detailed deliberations during the meeting, EAC observed as under:

- Attempt to be made to provide longitudinal connectivity, if found feasible from design point of view. E-flows releases during lean, Monsoon and Non-monsoon, Non-lean period of appropriate quantity are to be ensured by project authorities.

- EAC accepted the project proponent's request for change in domain levels and its associated changes in project features for the **same capacity and extended the ToR validity for a period of one year i.e. up-to 31st December 2015,** as the shifting of dam axis was necessitated on account of geological considerations.

- EAC, while did not agree to utilize water allocated towards e-flow for power generation, it was suggested that studies for uninterrupted e-flow without passing the same through hydro plant, with proper provision for energy dissipation should be undertaken.

- E-flow release shall be on a continuous basis i.e. during 24 hours a day throughout the year and should be released through unregulated means at least during lean & non-lean non-monsoon seasons.

Agenda Item No. 2.4 Talong HEP (225 MW) East Kameng District in Arunachal Pradesh by M/s. GMR Energy Pvt. Ltd. – For Environment Clearance

The Talong – Londa Hydro Power Project is being developed by GMR Londa Hydropower Private Limited as a run of the river scheme on Kameng river; project is situated in East Kameng district of Arunachal Pradesh. Project was appraised by EAC during its 77th meeting held in September 2014. EAC has made certain observations and required some additional studies to be completed before the final appraisal. The Developer has completed the studies and submitted a comprehensive report replying to all the queries of EAC. These were discussed and presented by the project developer and their Consultants. Point-wise response to EAC observations along with the discussions held in EAC is given below:

Observation

Longitudinal connectivity has to be explored and provided for ensuring non disruptive biota movement & sediment transportation in the river. This is to be suitably incorporated in the civil design of the Dam or alternative measures for conservation, development and management of aquatic fauna should be suitably incorporated in case structural measures are found to be techno-economically infeasible.

Response

Developer responded that as a first alternative, we have explored the possibility of longitudinal connectivity of Kameng River in detail. However, no feasible engineering solution is available due to configuration of the project. Proposed dam is 108.5 m high (from deepest foundation level) and reservoir is 12.80 Km long along the river. Dam structure upto the edge of plunge pool will take about 250 m of the river length. Power house is planned on the left bank at the toe of the dam and tail water discharge will be within the plunge pool. Due to long submergence which also extends along Pachuk River and other small tributaries; longitudinal connectivity is not found feasible.

Therefore, as a second alternative, conservation, development and management of aquatic fauna will be given priority as per the relevant components of environment management plan as envisaged in EMP. Fisheries Conservation and Management Plan has been extended and budget revised to Rs. 1.02 crore, as suggested by EAC to take care of reservoir biota. For downstream reach, adequate environment flow provisions, as per the detailed environment flow assessment study and recommendations of EAC, shall be made and implemented.

EAC further discussed the provision in the civil design for release of environmental flow and insisted on exploring longitudinal connectivity for the release of environment flow. Developer submitted that due to head availability environment flow can be utilized for power generation by dam body/dam toe turbine of 6.3 MW and flow will be released immediately at the end of plunge pool.

After detailed discussion, EAC recommended that to ensure longitudinal connectivity, environment flow should be released immediately downstream from a suitable unregulated arrangement in the dam body and should not pass through turbine. Developer has to provide a suitable longitudinal connectivity.

Observation: Environment flow release in lean season should be minimum 20% of the average flow of four leanest months corresponding pertaining to 90% dependable year based on CWC approved series. For remaining 8 months; one turbine should be running all the time to ensure environment flow release in the river. Project proponent said that they would propose a dam-body/ dam toe power house of adequate capacity for this purpose and come back to the EAC.

Response-Environment flow release provisions shall be made in line with detailed e-flow study and suggestions of EAC/MoEF i.e. 20% average flow of four leanest months corresponding to 90% dependable year. As was proposed in the EIA study, developer proposed to install a 6.3 MW turbine at the toe of the dam to utilize the 10.55 cumec of discharge, which will be released as minimum environmental flow.

In line with the earlier discussion, EAC recommended that dam toe turbine should not be installed for the release of the environment flow. Environment flow release should be through un-regulated opening/ gate and through longitudinal connectivity.

Observation: For environment flow release during lean season through a dam body turbine, the matter will be discussed after CEA's approval to the proposal is obtained as this would involve change in installed capacity.

Response-Developer explained that they have worked out the feasibility of an additional 6.3 MW dam toe turbine to harness the available head and 10.55 cumec of minimum environment flow to be released throughout the year. In this regard, they have submitted a detailed proposal to CEA for examination and approval. With this additional turbine, total installed capacity of project will increase from 225 MW to 231.3 MW (225+6.3).

EAC again opined that dam toe turbine should not be installed which has been proposed to utilize release of environment flow.

Observation: Budget for Fisheries development to be increased to at least to one crore INR.

Response-Developer confirmed that they have revised the budget for fisheries conservations and management from early proposed figure of Rs. 65.00 lakh to Rs. 1.02 crore. A detailed break up of budget was also discussed.

Observation: R&R Plan should consider budget for annuity policy for a period of 20 years to be proportionately increased with the price index with 2014 as the base year.

Response- The Developer confirmed that budget for annuity policy has been proportionately increased for 20 years; this resulted in increase in R&R budget from Rs. 4043 Lac to Rs. 4513 Lacs.

Observation: Muck disposal site should be at least 30 m away from the high flood line of the river at all locations. Retaining wall of adequate height is to be proposed for retaining muck with proper slope. A reclamation plan may also be submitted.

Response- Developer confirmed that all the muck disposal sites are planned 30 m away from the high flood line of the Kameng river. Concrete retaining walls of adequate heights have been proposed and reclamation plan has also been prepared and submitted along with updated Muck Disposal Plan.

Observation: Camera traps to be installed at various locations representing the different habitat types and elevation categories of the study area for a period of about 3 weeks each in October and November and results of faunal inventory submitted. GPS locations of camera trapping sites and the efforts made (no. of camera trapping nights/ sampling site) to be provided.

Response- A Wildlife monitoring study was undertaken as per the direction of EAC & report submitted. Wildlife monitoring with the help of camera traps was carried out for the period of 6 weeks starting from 8th Oct,14; covering 9 different locations in the study area. Six camera traps of models BTC 6 & I6 were used. The study showed that majority of the area in the vicinity of Talong Londa HE Project is subjected to jhum cultivation and there is lot of human interference seen even in the forested slopes. This is evident from the images captured by Camera Traps; which captured either Mithun – local domesticated animal, or humans passing through forests. It was only at one location the movement of Leopard cat was captured by the camera. Prevalent jhumming and high biotic interference might be the cause of very low sighting of wild mammals in the area.

EAC was satisfied with the study output and found it in line with the findings from primary and secondary data discussed in EIA report.

Observation: Lean season e-flow & other season e-flow to be worked out both in terms of percentage and absolute quantum based on site specific study.

Response- A detailed environment flow study was carried out including the simulation modeling for environment flow release in three different seasons viz. monsoon, lean and other months i.e. pre and post monsoon period. 8 cross sections were taken for flow modeling from dam axis till chainage1154m. As the plunge pool is extended up to a distance of about 230m from the dam axis and Pachi river meets from left bank at a distance of 950m from dam axis; 720 m of river stretch from edge of plunge pool to confluence of Pachi is considered critical and have the risk of running dry during non-peaking period in lean season. During peaking hours, tail water will be release within plunge pool area and there will be substantial water in the critical stretch. Peaking and non-peaking hour generation capability was studied for 90% dependable year flow pattern and flow modelling was also carried out for the scenario when at least one turbine is running during non-peaking hours.

Monsoon period (June to September) and two 10-daily period of October; there will be 6 hours of peaking generation and 18 hours of non-peaking

generation. This will be changed to 3 hours of peaking and 21 hours of non-peaking generation during November. Peaking discharge is considered equivalent to design discharge of 349.23 cumec and minimum one machine will be running during non-peaking hours. Therefore, during 6 months period (June – November) at least one turbine will be running 24-hours ensuring water is available immediate downstream of plunge pool. Minimum flow during this period will be 116.41 cumec, which is 36.5% of average monsoon flow as per 90% dependable year discharge data. As this flow will adequately meet monsoon flow requirement no augmentation is needed. This flow (116.41 cumec) will also be maintained during two months of non monsoon non lean period (October and November) and is about 92% of other months average flow of 125.92 cumec based on 90% DY discharge data.

In the remaining 6 months (December-May), flow will be available in the downstream stretch only during peaking power generation say for 2.66 to 6 hours daily. Pachi river meets on left bank at about 720 m downstream of plunge pool. Therefore, release should be made from Talong Londa HEP to reduce the impact on this critical stretch for aquatic life for remaining non peaking hours. Results of simulation for lean season releases show that the discharge of 5.275 cumec (10% of lean season average) is giving depth of more than 82 cm at all the cross sections. The flow velocity is in range of 0.42 to 1.457 meter/secand this is sufficient to meet habitat requirement in lean season.

During post monsoon period of December and pre-monsoon period of May, release should be higher in lieu of higher discharges available in the river during this period. Average discharge during May and December in 90% DY are of the order of 80 cumec as compared to 52 cumec average discharge during four leanest months. Keeping in view that minimum 1 m depth needs to be maintained during pre and post monsoon period, it is recommended to keep the minimum release during this period as 10.55 cumec, which is 20% of the average of lean season discharge. This would give an average depth of 1.36 m and average flow width of 15.24 m. This release should be maintained not only during December and May but also during entire four months lean period from January to April.

EAC deliberated the matter in detail with respect to provision of environment flow in critical stretch during different season and concluded that as at least one turbine will be running during four monsoon months and two pre and post monsoon months releasing 116.41 cumec, (36.5% of average monsoon flow as per 90% dependable year flow data) and providing an average depth of 3.73 m

and top width of 31.29 m; it is adequate provision for monsoon as well two other months – one pre monsoon and one post monsoon. Lean season environment flow provision are also found to be adequate as 20% of average lean season discharge based on 90% dependable year data. For remaining two months, a provision of 10.55 cumec of discharge is giving adequate average depth of 1.36m and top width of 15.24m; therefore found to be adequate.

After further deliberations, EAC recommended the Talong Londa HEP for granting environment clearance with the following conditions and observations:

- A provision for suitable longitudinal connectivity is to be explored for release of environment flow, biota movement and sediment transportation. Minimum environment flow of 10.55 cumec should be released through un-regulated way.
- Dam toe/dam body turbine to utilize this e-flow or part of it should not be considered. During non-monsoon & non-lean and monsoon season minimum release shall be 20% & 30% respectively of average flow corresponding to 90% Dependable year.
- E-flow release shall be on a continuous basis i.e. during 24 hours a day throughout the year and should be released through unregulated means at least during lean & non-lean non-monsoon seasons.

Agenda Item No. 2.5 Morand-Ganjal Irrigation Project, in Hoshangabad District of Madhya Pradesh by M/s. Narmada Valley Development Corporation – For consideration of extension of validity of ToR.

The project proponent presented the case for extension of validity of ToR for one year. The ToR for this project was issued vide MoEF letter No. J-12011/43/2011-IA-I Dt. 17.10.2012 with two years validity period. The project proponent mentioned that the draft EIA/EMP report was prepared and submitted to M P pollution control board incorporating R&R policy 2007 and State policy 2008 for conducting Public Hearing.

In the wake of the new Act "The Right to Fair Compensation Transparency in Land Acquisition, R &R Act 2013" Rules are to be made by the Government of Madhya Pradesh in accordance with Clause 109 of the Act and also Multiplication factor for related Rural Area after First Schedule (page 37) of Act is yet to be notified, which is under process. Thereafter, the same will be incorporated in the

EIA/EMP and submitted to MPPCB. Therefore, a one year extension is required to complete all the formalities. The Committee noted that the request made by the project proponent appeared to be genuine and reasonable. A one year extension has been recommended for the ToR i.e. 17th October, 2015.

Agenda Item No. 2.6 Narmada Malwa Gambhir Link Project MP Barwah, Sanwer, Ujjain, Depalpur, Ghatiya, Barnagar – For consideration of TOR

This was discussed during the 80th meeting of Expert Appraisal Committee for River Valley and Hydro Electric Power project schedule which was held on 11th & 12th December, 2014.

The NVDA representative informed that as per MoE&F Notification part-II section 3(II) dated 1.12.2009 SO 3067 (E) page no. 18 under V, it is clearly mentioned that Irrigation projects not involving submergence or inter-state domain shall be appraised by SEIAA as category "B" projects. As such, on line applications for Environment Clearance (EC) of the project has been submitted to M.P. State Environment Impact Assessment Authority, Bhopal vide application no. 02063 on dated 31.10.2014.

In view of above, the EAC noted that the Narmada–Malwa- Gambhi-Link Project will be considered by SEIAA.

Agenda Item No. 2.7 Suntaley Tar HEP(40MW) Project in East Sikkim Distt. Sikkim being developed by M/s Hindustan Power –For consideration of extension of validity of ToR

Suntaley Tar HEP is located in East Sikkim district, Sikkim on Rangpo Chhu. The Committee noted that as per the installed capacity, this should have been a Category 'B" Project and in the purview of SEAC. However, as this HEP is within 10 Km radius of Pangolakha Wildlife Sanctuary, the project was accorded Scoping Clearance by MoEF in December 2012 for 2 years on recommendations of EAC.

The project envisages construction of a 17 m high barrage across river Rangpo Chhu near village Karo to install a 40 MW capacity HEP. Total land requirement is about 39.02 ha. A surface powerhouse is proposed on the right bank of the river with 3 units of 13.33 MW each.

The project proponent informed that the topographical Survey for Project domain allotted for Suntaley Tar HEP has been completed along with Geological Mapping of the Project Area. For the environment impact assessment, baseline data collection work has been completed. However, socio-economic survey is pending as the project layout is being finalized. Meteorological data collection for assessment of Probable Maximum Precipitation (PMP) and estimation of standard project flood by Standard Project Storm (SPS) method has been completed by Indian Meteorological Department (IMD).

As the DPR preparation is under progress and some activities of survey and investigation are pending, the project proponent requested that 2 years of extension of scoping clearance to complete the remaining activities, finalize the DPR and EIA/EMP studies; conducted public hearing and approach MoEF for appraisal may be given. Keeping in view the pending work, EAC recommended one year extension of scoping clearance for Suntaley Tar HEP subject to its conformity with relevant office order of the Ministry.

Agenda Item No. 2.8 Ujh multipurpose project (186 MW) at Burdasi village near Panjtiethi at Deoli Village in State of J&K State Power Development Corporation- For consideration of ToR.

Project background:

Location:

Ujh Multipurpose Project (UMP) is proposed by Jammu and Kashmir State Power Development Corporation (JKSPDC) on River Ujh, one of the main tributary of River Ravi which is the eastern river of the Indus Basin and as per Indus Water Treaty, the eastern rivers are available for unrestricted use of India . Ujh is joined by other four tributaries Suterkhad, Dunarikhad, Bhini and Talyan at a place called Panchtirthi. The dam site of the project is in tehsil Billawar of the district Kathua of J&K. The proposed dam site is about 1.6 km downstream of Panchtirthi. The Powerhouse site is approximately 9.5 km downstream of dam site near a village called Deoli. Powerhouse site is located in tehsil and district Kathua. A Barrage has been proposed d/s of Powerhouse which also lies in tehsil and district Kathua. Two main canals, Right Main Canal (RMC) and Left Main Canal (LMC) will be emanating from barrage along both the banks of the River for irrigation and drinking water purposes. Jasrota Wildlife Sanctuary lies on the bank of River Ujh. Proposed Right Main Canal (RMC) of Ujh Multipurpose project is

about 1 km north of the sanctuary. Canal alignment of RMC avoids the sanctuary and finally the underground alignment is fixed approximately 1 km away from the sanctuary.

The dam site of the project is in the tehsil Billawar; district Kathua of J &K. The proposed dam site is about 1.6 km downstream of Panchtirthi. The location of dam site is 32 º 33′ 48″ and 75º 29′ 16″E. The Powerhouse site is approximately 9.5 km downstream of dam site near a village called Deoli. Powerhouse site is located in tehsil and district Kathua. The coordinates of Power house are 75º 27′58.4″ E and 32º 2′ 38″N. A Barrage has been proposed d/s of Powerhouse which also lies in tehsil and district Kathua and the coordinates of Barrage are 75 º 27′ 31.1″ E and 32º 32′ 1.22″ N.

Capacity

The CCA of RMC is 5595 ha and CCA of LMC is 3053 ha. In addition to that, the RMC will irrigate an additional area of 8095 Hectare in Kharif season and 5989 ha in Rabi season from Samba to Vijaypur in the command area of existing Ravi Tawi Canal. Installed capacity of Ujh Multipurpose Project for generation of power has been proposed as 186 MW (3x 62) + 26 MW (1x24 + 1x2) with total of 212 MW which would enable peaking operation of the powerhouse for about 4 hrs. with a load factor of about 16.7% **.** Annual energy benefit from the project in the 90% dependable year would be 335.48 MU. Provision of 10 cusec of water has been made through each of the canal for drinking purpose.

UMP is a Category 'A' River Valley Project on account of over proposed generation of 212 MW. Jasrota Wildlife Sanctuary located within 10 Km of the proposed project location. Canal alignment of RMC avoids the sanctuary and finally the underground alignment is fixed approximately 1 km away from the sanctuary. Total area required for the Project is about 5000 ha (50 sq.km) of which 4100 ha (41 sq.km) area is coming under the submergence zone of which 242 ha (2.42 sq.kms) is forest land.

Total cost of the Ujh Multipurpose Project at April, 2013 price level works out to be 363567-30 Lakhs while the Gross Cost of the Project is 363073 Lakhs. The construction period of the project is 6 years. In view of its importance to the interests of the Country, the project has been declared as a National Project.

The EAC recommended the ToR Clearance of the project with the following additional issues to be covered in TOR:

1. Bio-diversity study to be conducted by a suitable institute as per OM of MoEF dated 28.05.2013 and subsequent list displayed in its portal.

2. Camera Trap to be used for wildlife survey.
3. Forest and Wildlife clearance to be obtained as per extant procedures.
4. Longitudinal connectivity for biota movement and sediment transportation to be explored. A suitable design is to be provided for this purpose.
5. Environment flow to be as per MOEF's latest norms of @ 20% in lean season, 20-35% in non-lean & non-monsoon and 30% during monsoon season. In addition, site specific study is to be carried out for accurate assessment of Environment Flow and to be submitted.
6. E-flow release shall be through unregulated opening.

Agenda Item No. 2.9 Athrapalli HEP (163 MW) Project in Kerala by M/s Kerala State Electricity Board- For consideration of Environmental Clearance

Sri M. Sivasankar, Chairman & Managing Director, KSE Board Ltd. attended the meeting along with other officials and consultant. CMD, KSE Board Ltd gave a brief presentation on the salient features of the project including the background of the project. It was brought to the notice of committee members that the project has been appraised by five different EAC committee since 1997 and accorded environmental clearance thrice.

EAC had noted that the Environmental Appraisal Committee meeting held on 17.7.2010 had approved the project for environmental clearance subject to re-confirmation of water availability by CWC and the facts on the KFRI report. It was pointed by CMD, KSE Board Ltd that CWC had reconfirmed the water availability of the project as early as 11/2010 based on the flow data up to 2002. It was stated by the EAC that the project was not accorded environmental clearance then since the project was referred to WGEEP and later HLWG. Now HLWG *is of the view Quote " that while the project's importance for meeting the peaking power requirements of the state cannot be disputed, there is still uncertainty about ecological flow available in the riverine stretch, which has a dam at a short distance upstream of the proposed project. Given the increased variability in flow from catchments due to unpredictable monsoon rains, the project may be re-evaluated in terms of generation of energy and if the plant load factor expected in the project makes it viable against the loss of local populations of some species. Based on this revaluation and collection of data on ecological flow, the Government of Kerala, could take forward the proposal if it so desires with the Ministry of Environment & Forests". Unquote*

KSE Board Ltd officials pointed out that the hydrology related to the project has been updated up to 2012. Detailed presentation on the findings of the hydrology assessment was carried out. KSE Board officials stated that the MoE&F stipulation of maintaining the ecological flow of 7.65m^3/sec will be followed in toto. KSE Board Ltd also explained the methodology of assessment of flow of 7.65 m^3/sec was arrived at and later approved by the expert committee deputed to visit the site and the EAC in 2007. It was pointed by EAC that since HLWG has raised the issues related to water availability for the project based on the ecological flow to be maintained by KSE Board Ltd in 2013, the water availability of the project needs the approval of CWC afresh. It was requested by EAC to the representative of CWC & member, EAC to review the hydrology of the project as updated by KSE Board Ltd from 2003 at the earliest. **MoE&F shall request CWC to undertake the exercise based on the data available with KSE Board Ltd in this regard.** The same may well be compared with flow data at CWC gauging station, Arangali. EAC has requested CWC representative to expedite the above exercise within two weeks to place the findings before the next EAC for final approval. KSE Board Ltd was also requested to approach CWC to expedite the matter.

EAC members then requested Dr A. G. Pandurangan, Head, Plant Systematics & Evolutionary Science Division of JNTBGRI to detail on the findings of HLWG with respect to biodiversity associated with the implementation of the project. It was pointed by Dr. A. G. Pandurangan that based on his experience in Western Ghats for the past 32 years he is able to present an accurate picture of the Rare and Endangered Species of the project area. It was informed that JNTBGRI team is still in the process of monitoring the area and its changes. It was emphatically pointed out by the JNTBGRI scientist that only one species i.e. Phaeanthus Malabaricus Bedd under vulnerable category as per IUCN assessment is growing both in Catchment as well as in Submergible area. This species is not strictly local to the project area but distributed in other parts of Western Ghats. However, this species being a rare one identified by IUCN, JNTBGRI had studied its population structure, dynamics and conservation strategies from that area. Therefore, by using the expertise of JNTBGRI the species can be rehabilitated to the adjacent catchment area to ensure its existence with the objective of raising viable populations in the long run. After detailed deliberations, the EAC committee accepted the clarifications provided by the scientist of JNTBGRI with respect to the aspect of biodiversity associated with the implementation of the project.

The project will be reconsidered based on receipt of response on flow availability vis-a vis confirmation on installed capacity and assessment of adequate e-flow release.

Agenda Item No. 2.10 Shirapur Lift Irrigation Scheme in Solapur by Maharashtra Krishna Valley Development Corporation Pune- For Consideration of ToR.

The Project proponent did not attend the meeting. Based on a representation on violation, the Government of Maharashtra has been asked to clarify the position.

Agenda Item No. 2.11 Lohit River Basin Study, enhancement of scope; by WAPCOS

The Lohit River Basin study was initiated at the instance of MoEF while according environment clearance to Demwe Lower and Demwe Upper Hydroelectric Power Projects of M/s Athena Demwe Power Limited. The TOR for the study was communicated by the Ministry on 26th March, 2009, after discussing the same in four EAC meetings held on 16th – 17th July, 2008, 15th – 16th December, 2008, 22nd January, 2009 and 16th – 17th February, 2009. The Interim report and Basin Study Reports study was discussed by EAC in its various meetings. The response to comments of various NGOs were discussed in various EAC meetings. **During the EAC meeting held on 11-12 December 2014., WAPCOS presented the TOR for conducting the Basin Study for hydroelectric projects on the tributaries in the study area. A total of 5 projects are envisaged on the tributaries of Lohit Basin.** The list of projects is given as below:

Name of the project	**Tributary**	**Installed capacity (MW)**
Gimiliang HEP	Dav	99
Raigam HEP	Dalai	96
Tidding- I HEP	Tidding	98
Tidding- II HEP	Tidding	68
Kamlang HEP	Kamlang	21
Total		**382**

The TOR discussed during the meeting is described in the following paragraphs.

The basin study envisages providing optimum support for various natural processes and allowing sustainable activities undertaken by its inhabitants. The same is determined in terms of the following:

- Inventorisation and analysis of the existing resource base and its production, consumption and
- conservation levels.
- Determination of regional ecological fragility/sensitivity based on geo-physical, biological, socio
- economic and cultural attributes.
- Review of existing and planned developments as per various developmental plans.
- Evaluation of impacts on various facets of environment due to existing and planned development.

The study should involve assessment of stress/load due to varied activities covering, e.g. exploitation
of natural resources, industrial development, population growth which lead to varying degree of impacts on various facets of environment.

The basin study should also envisage a broad framework of environmental action plan to mitigate the adverse impacts on environment which should be in the form
of **:**

- Preclusion of an activity
- Infrastructure development
- Modification in the planned activity
- Implementation of set of measures for amelioration of adverse impacts.

2. STUDY AREA

The study area to be covered as a part of the Basin Study is the various tributaries of on which hydroelectric projects are envisaged.
The study area for main Lohit Basin study shall be upto Parsuram Kund. The area downstream of the Parsuram Kund upto Dibrusaikhowa National Park is being covered in the Downstream Impact Assessment Study for Demwe Lower HEP. Hence, to avoid duplication the area downstream of the Parsuram Kund upto Dibrusaikhowa National Park is being excluded from the present study. However, findings of the Downstream Impact Assessment Study for Demwe Lower HEP for the above referred area shall be suitably incorporated in the Basin Study.

3. DATA COLLECTION

The estimation of supportive capacity of the basin should involve the preparation of the existing scenario i.e., the preparation of detailed data base of the basins. This should be accomplished through the steps outlined in following sections.

3.1 Meteorology

The information on various meteorological aspects is to be collected from India Meteorological Department (IMD) for meteorological stations located within the basin area or in vicinity to the Study Area. The information on various aspects such as rainfall, temperature wind, humidity etc. will be collected.

3.2 Water Resources

The information on following aspects should be collected:

- Review of drainage characteristics of the basin, including various surface water bodies like rivers and lakes.
- Data collection and review of past studies/reports/data etc.
- Review of existing water sharing agreements for meeting various need-based existing and future demands viz. municipal, irrigation, power generation and industrial.
- Analysis of all, past assessment of the water availability and assessing the water availability, as per updated data for the system as a whole and at existing ongoing/proposed project locations on annual/monsoon/non-monsoon and monthly basis.
- Estimation of sediment load at various points in the basin based on available secondary data.
- Identification of perennial sources of water and their designated usages**.**

3.3 Water Quality

As a part of the studies, secondary data is to be collected for water quality in the study area. The information shall be collected as below:

- Secondary data to be reviewed to assess the water quality in the study area

- Information on human settlement, sewage generated and mode of collection, conveyance treatment and disposal of sewage
- Water quality monitoring shall be conducted at 10 locations @ (2 locations per project) in the study area
- Frequency of sampling shall be once per month for 12 months.

The various parameters to be monitored include

- pH
- Dissolved Oxygen (DO)
- Electrical conductivity (EC)
- Total Suspended Solids (TSS)
- Total Dissolved Solids (TDS)
- Total Alkalinity
- Total Hardness
- Biochemical Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)
- Nitrates
- Chlorides
- Sulphates
- Phosphates
- Sodium
- Calcium
- Magnesium
- Potassium
- Iron
- Manganese
- Zinc
- Cadmium
- Lead
- Copper
- Mercury
- Total Chromium
- Total Coliform

3.4 Flora

The following data should be collected from various secondary sources for the Study Area:

- Characterization of forest types in the study area and extent of each forest type.
- Information on general vegetation pattern and floral diversity.

- Presence of economically important species in the study area.
- Presence of Rare, Endangered and Threatened floral species as per the categorization Botanical Survey of India's Red Data list in the basin area.
- Presence of endemic floral species found in the study area, if any should be assessed as a part of the study**.**
- Location of wild life sanctuaries, national parks, biosphere reserves if any, in the study area

Field studies shall be conducted for sampling at 10 locations @ (2 locations per project) to collect primary data on terrestrial ecology in the study area. Monitoring shall be conducted for three seasons namely pre-monsoon, monsoon and post-monsoon. The following should be covered as a part of the EIA study.

- Identification of forest type and density, bio-diversity in the study area.
- Preparation of comprehensive checklist of flora (Angiosperms, Gymnosperms, Lichens, Orchids, Pteridophytes, Bryophytes, Fungi, Algae etc.) with Botanical and local names.
- Importance Value Index of the dominant vegetation at various sampling locations.
- Frequency, Abundance and density of each species of Trees, Shrubs and Herbs at representative sampling sites should be estimated.
- Identification and listing of plants of genetically, biologically, economical and medicinal importance.
- Details on presence of Endemics and RET species in the Study Area
- Major forest produce, if any, and dependence of locals on the same in the forests observed in the study area.

3.5 Fauna

The following data be collected from various secondary sources for the study area **:**

- Inventory of Birds (resident, migratory), land animals including mammals, reptiles, amphibians, fishes etc reported & surveyed in the basin area should be prepared.
- Presence of RET faunal species as per the categorization of IUCN Red Data list and as per different schedules of Indian Wildlife Protection Act, 1972 in the Study Area.
- Presence of endemic faunal species found in the basin area, if any should be assessed as a part of the Study.
- Existence of barriers and corridors for wild animals, if any in the basin area should be covered as a part of the study.
- Identification of threats to wildlife in the Study Area.

- Presence of National Park, Sanctuary, Biosphere, Reserve Forest etc. in the Study Area shall be assessed

3.6 Aquatic flora and fauna

The following data should be collected from various secondary sources for various tributaries of river Lohit in the basin area on which HEPs are envisaged:

- Presence of major fish species
- Inventory of migratory fish species & migratory routes of various fish species
- Presence of major breeding and spawning sites.

The field studies should be conducted for sampling at 10 locations to collect primary data on aquatic ecology & fisheries in the study area. The key aspects to be covered include:

- Assessment of biotic resources with special reference to primary productivity, zooplanktons, phytoplanktons, benthos, macrophytes, macro-invertebrates and fishes in the study area.
- Population densities and diversities of phytoplanktons, zooplanktons, benthos, macrophytes, macro-invertebrates and fish shall be estimated. Diversity indices of these ecological groups should also be calculated separately.
- Fish composition
- Migratory route of migratory fishes
- Spawning & breeding grounds of fish species, if any, shall be identified

4. IMPACTS DUE TO HYDROPOWER DEVELOPMENT

The impacts on terrestrial and aquatic ecology should be studied. The scenario to be considered for assessment in the present study should be based on the hydropower projects to be developed on the tributaries of river Lohit on which hydroelectric projects are proposed. The key aspects to be covered are listed as below **:**

- Modification in hydrologic regime due to diversion of water for hydropower generation.
- Depth of water available in river stretches during lean season and its assessment of its adequacy vis-a-vis various fish species.

- Length of river stretches with normal flow due to commissioning of various hydroelectric projects due to diversion of flow for hydropower generation.
- Impacts on discharge in river stretches during monsoon and lean seasons due to diversion of flow for hydropower generation.
- Impacts on water users in terms of water availability and quality
- Impacts on aquatic ecology including riverine fisheries as a result of diversion of flow for hydropower generation.
- Assessment of maintaining minimum releases of water during lean season to sustain riverine ecology, maintain water quality and meet water requirement of downstream users.
- Impact due to loss of forests
- Impact on RET species
- Impacts on economically important plant species.
- Impacts due to increased human interference
- Impacts due to agricultural practices.
- Impacts of cascade development
- Information on river stretch affected and forest area affected by each project
- Assessment of environmental flows covering lean, non-lean non-monsoon and monsoon periods, based on methodology such as BBM and make recommendations for each stretch.
- Modeling study to assess the impact of peaking discharge
- Impact on overall balance of sediment due to construction of a number of projects needs to be included in the report.
- Impact of sand mining, boulder mining, etc
- Impact due to construction of approach roads for the HEPs
- Impacts due to increased human interferences
- Impacts due to agricultural practices.

5. OUTCOMES OF THE STUDY

The key outcomes of the study should be to**:**

- Provide sustainable and optimal ways of hydropower development of Lohit river, keeping in view of the environmental setting of the basin
- Assess requirement of environmental flow during lean season with actual flow, depth and velocity at different level.
- Flow regime
- Flood plain including wetlands
- Aquatic ecology

- River morphology
- Sediment transport/erosion and deposition
- Impact on human activities and livelihood
- Assessment of number of HEPs to be allowed
- Assessment of how much of the total length of the river that may be tunneled inclusive of the tunneling requirement of all the projects that have been planned for development so that the integrity of the river is not grossly undermined
- Criteria for downstream impact study in terms of length of the river downstream to the tail water discharge point, parameters of such a study.
- Criteria for EAC restrict the river reach for hydropower development
- Clear river length of uninterrupted flow between the reservoir tip at FRL of a downstream project and the tail water discharge point of the immediate upstream project
- Scientific procedure to decide on the minimum lean season flow that must be maintained in the downstream of a dam/barrage
- Minimum lean season flow must be ensured by the hydropower developer in various reaches of a long river in relation to the aquatic ecology and downstream water use
- Extent of diurnal flow variation may be considered safe for the aquatic life during peeking operations.
- Minimum distance to be maintained between muck disposal site and river bank
- Possibility of longitudinal connectivity in various projects being covered as a part of the study.
- Possibility of release of ungated unregulated release of Environmental Flows

6. OTHER ASPECTS

The other aspects to be covered shall be as below:

- Source of secondary information used in the report
- Detailed maps of each Sub-Basin shall be provided separately for each parameter such as forest cover, forest type, vegetation, location of sampling sites etc.
- For each forest type altitudinal range in the study area shall be specified.
- Categorization of Projects Operational/Under Construction/ EC, Scoping, Not Allotted Yet

7. TIME SCHEDULE

The time schedule for the study shall be 21 months. The details are given as below:

S. No.	Milestone	Timeframe
1	Field studies for Primary data collection	Within 13 months of the start of the study
2	Submission of Interim Report (to be reviewed by EAC) for mid-course corrections, if any	Within 6 months of the start of the study
3	Submission of Draft Final Report	Within 18 months of the start of the study
4	Review of Draft Final report	During 19th and 20th months from start of the study
5	Submission of Final Report	Within 21 months of the start of the study

EAC also handed over a copy each of the re-presentations received from five organizations listed as below:

- Representation from Manthan Adhyayan Kendra, Badwani, Madhya Pradesh
- Representation from SANDRP, Delhi
- All Tinsukia Students Union, Tinsukia
- Representation from Mr. Neeraj Vagholikar, Kalpriksh
- Representation from Mr. Luit Phukan, Dibrugarh, Assam

WAPCOS was asked that the concerns raised in these representations as a part of the study within the legal framework and reply submitted be addressed in a tabular form.

Based on the above, EAC approved the TOR for conducting Basin Study for hydroelectric projects on tributaries in Lohit Basin including the tributaries with the following additional ToRs:

- Longitudinal connectivity is to be provided for the HEPs for smoothy biota movement, non-disruptive sediment transportation and release of e-flow. This aspect is to be studied in details and ways and means for incorporating in HEP may be suggested.
- E-flow is to be assessed in a holistic and integrated manner adopting most suitable technique/methodology
- Possibility of shutting down HEPs during most water stressed period may be studied and explored

Agenda Item No. 2.12 Mumari Dam under Bhatsa Project Tal-Shahpur Distt. Thane, Maharashtra-For consideration of ToR

The Proposed Mumari Dam is situated on Mumari River which is a tributary of Bhatsa River near Village Sarangpuri Taluka - Shahapur Dist- Thane. The proposed Mumari dam site is near village Mumari Pada, a pada of Sarangpuri village, about 10.5 km upstream of village Sarangpuri

Mumari is a tributary of Bhatsa river. The Catchment area is 41.47 Sq Km which is confined to part of Shahapur Tehsil of Thane District. There is no upstream utilization in catchment. The total submergence area envisaged of Mumari dam is 495 ha. Gross storage of dam is 72.40 Mm^3. Main purpose of the dam is to store water for irrigation purpose. Length of Mumari dam is 1240 m and maximum height is 49.90 m. This dam facilitates irrigation to 6,320 ha of land by supplying water to Bhatsa Left Bank Canal.

EAC noted that Mumari dam is under Bhatsa Irrigation Project, which is a multipurpose commissioned project to supply 1,365 MLD water to Mumbai Corporation (426.80 Mm^3) and for Irrigation of 23,000 ha in Kalyan, Bhiwandi and Shahapur taluka of Thane District. Project also comprise of a commissioned 15 MW hydro-power plant.

The Project Proponent explained that in 1961, Gov. of Maharashtra had appointed a Group of experts to finalise the location of the dam to cater to the domestic water needs of Mumbai Municipal Corporation and Irrigation requirement. They finalised the location at Bhatsa Dam (1964) near village Sajivli, Tal. Shahpur, Dist. Thane. After detailed investigations, in addition to Bhatsa dam, Mumari dam was introduced for additional irrigation requirement in Dec. 1983. A 15 MW powerhouse was also part of the scheme; which was accorded environment clearance by MoEF vide letter no 14/63/80-Env.5 Dated 24th August 1983. Project was commissioned in 1991. In January 1988, MoEF was informed of the Bhatsa project along with ecological aspects for requirement of environment clearance, if any. In March 1988, MoEF vide letter no. 14/63/80-EN. 5 /IA dt 7th March 1988 had responded that "since construction of main dam is mostly complete, water has been impounded upto the level of 122 m and the work on rehabilitation has been completed; the case of Environmental Clearance is closed". Bhatsa Dam was fully commissioned in 2005. However, due to paucity of funds

and non availability of alternative land, the Mumari Dam & Left Bank Canal was not constructed.

For the irrigation of 6320 ha of land along left bank of Bhatsa river, Water Resource Department, Government of Maharashtra has planned to construct the Mumari dam for the purpose. Keeping in view the environment and forest clearance requirement at the present time, the department has followed the required procedure and applied for the diversion of 412.135 Ha of forest land for Mumri Dam. The final approval (stage II) for diversion of forestland for Mumari dam has been received from MoEF vide F. No. 8-54/2005-FC dated May 02, 2014.

Mumari being an independent dam along with LBC of Bhatsa has a command area of only 6,320 ha i.e. a category B project (less than 10000 ha command area) and therefore, an application was filed before SEAC, Maharashtra for scoping clearance. The matter was presented before SEAC, Maharashtra on 20/6/2014 during its 81st meeting; where SEAC noted that Mumari dam will complement the existing Bhatsa dam project by augmenting the capacity exceeding 10,000 ha and considering it an expansion of Bhatsa dam project, the project has to be considered as "A" category project.

EAC deliberated the matter in detail and noted that Bhatsa dam, power house and right bank canal work has been completed many years ago and these are independent operational units from Mumari dam. Administratively, Mumari dam may still be part of the overall Bhatsa irrigation scheme. However, these are two physically separate entities. Further, diversion of forest land has also been delinked for Mumari dam from that of right and left bank Bhatsa canals and final approval for the diversion of 412.135 ha of forest land pertaining to Mumari dam only has been already accorded by MoEF. Therefore, EAC recommended that Water Resource Department, Government of Maharashtra should review the proposal administratively and clarify if Mumri & LBC is a separate project/entity once again and appropriately apply for scoping clearance to EAC/SEAC, as the case may be.

Agenda Item No. 2.13 Anjaw (270 MW) HEP in Anjaw District, Arunachal Pradesh by Lohit Urja Private Ltd.-For consideration of extension of validity of ToR

Anjaw HEP is located in Anjaw district on Lohit river. The committee noted that the Scoping approval along-with Terms of Reference (TOR) for preparation of EIA/EMP Report was granted by MoEF in November, 2011 for 280 MW capacity

Anjaw HEP in Anjaw District of Arunachal Pradesh. In consideration of pendency of finalization of project layout plan and design parameter's, MOEF granted extension of TOR validity along with approval for reduced capacity of 270 MW for one more year with revised validity till 7th November, 2014. However, due to delay in finalization of project features as a part of DPR Studies, the EIA/EMP studies could not be completed within the extended period of November, 2014.

The Project Proponent informed that during the last one-year extended period, although, some progress has been made, project layout could not be finalized. Construction material, survey and design parameters & finalization of layout plan is under progress. Geological Investigations, Geo-mapping survey is in progress including drilling activities.

Project Proponent further informed that due to pendency of finalization of project layout, the land acquisition is pending which are required for undertaking socio-economic surveys of affected families, finalization of the EIA/EMP Reports and thereafter, holding of Public Hearing. They informed that they would need additional time to complete these activities and therefore, requested that scoping approval & TOR validity may be extended for further two years for Anjaw HEP (270 MW).

Keeping in view the pending activities, EAC recommended one year extension of scoping approval for Anjaw HEP subject to its being in conformity with necessary OM issued by the Ministry in this regard.

Agenda Item No. 2.14 Demwe Upper (1080 MW) HEP in Anjaw District of Arunachal Pradesh by Lohit Urja Pvt. Ltd.- For consideration of extension of validity of ToR.

Demwe Upper HEP is located in Anjaw district on Lohit river and was part of the single scheme of 3000 MW Demwe HEP. To avoid partial submergence of Kamlang WLS, the project was first bifurcated in two stages namely Demwe Lower (1200 MW) HEP and Demwe Upper (1800 MW) HEP. Later Demwe Upper HEP was further bifurcated into two projects viz; Demwe Upper (FRL525m, IC of 1050 MW) HEP and Anjaw (FRL 580 m, IC of 270 MW) HEP.

Scoping clearance for Demwe Upper HEP for an installed capacity of 1050 MW(FRL of 525 m) was accorded by MOEF vide letter dated 22nd December, 2010 with a validity of two years i.e. till 22nd December, 2012. With the expiry of two

years, MOEF vide letter dated 5th June, 2013 had granted extension of TOR validity for amended installed capacity of 1080 MW as approved by CEA for a period of one more year i.e. till 22nd Dec, 2013.Thereafter, considering the pendency of finalization of project layout plan and design parameter's, MOEF granted extension of TOR validity till 22nd Dec, 2014.

EAC noted that in last four years of scoping approval, developer could not complete DPR and hence EIA, EMP studies. Developer explained that due to overburden in excess of 100 meters, the type of dam, which was earlier envisaged as a composite dam comprising of concrete spillway and concrete faced rock fill dam on the right abutment, is being reviewed. Necessary studies for selecting the type of dam, design parameters and project layout are underway and on completion a final decision will be taken and layout will be finalized. Due to pendency of finalization of project layout, the land acquisition details which are required for undertaking socio-economic surveys of affected families, finalization of the EIA/EMP Reports and thereafter, holding of Public Hearing, will take some more time. Therefore, developer requested one year extension in scoping approval & TOR validity.

EAC recommended that extension in scoping clearance may be granted for one more year subject to its being conformity with Ministry's guidelines/ office order/OM in this regard.

The meeting ended with vote of thanks to Chair

****

Appendix

List of EAC members and Project Proponents who attended 80th Meeting of Expert Appraisal Committee for River Valley & Hydro Electric Power Projects held on 11th -12th December, 2014 in New Delhi

A. Members of EAC

1.	Shri Alok Perti	-	Chairman
2.	Dr. P. K. Choudhuri	-	Member
3.	Shri N. N. Rai	-	Member
4.	Shri B. B. Barman	-	Member Secretary & Director, MoEF
5.	Shri Vinay Kumar	-	Member
6.	Dr. G. M. Lingaraju	-	Member
7.	Shri G. L. Bansal	-	Member
8.	Dr. P. V. SubbaRao	-	MoEF

B. Savanur Integrated Micro Irrigation Project at Kalasur Village, Savanur Taluk, Haveri District, Karnataka- For consideration of ToR

1.	Shri S. F. Patil	-	Chief Engineer
2.	Shri S. P. Beedanal	-	Executive Engineer
3.	Shri Shivanand M. D	-	CMD
4.	Shri Santosh Kumar T. M.	-	FAE

C. Lower Tapi Project in Jalgaon District of Maharashtra- For consideration of Environment Clearance

1.	Shri P. R. Bhamare	-	Executive Director
2.	Shri S. N. Kulkarni	-	Superintending Engineer
3.	Shri S. S. Khandekar	-	Executive Engineer
4.	Shri A. K. Suryavanshi	-	Assistant Engineer
5.	Smt. Nandini Choudhari	-	Consultant
6.	Shri S. M. Patil	-	Consultant
7.	Shri D. S. Deore	-	Civil Engineer
8.	Shri S. T. Ingale	-	Consultant

9.	Shi P. A. Mote	-	Consultant

D. Dugar HEP (449 MW) located in Pangi Valley, Chamba District of Himachal Pradesh – For Capacity enhancement- & change in project domain levels.

1.	Shri Asim Thakurta	-	Vice President
2.	Shri Bhaikti Raj	-	Chief Manager
3.	Shri Sharat Ranjan	-	Manager
4.	Shri Pradeep Kumar Yadav	-	Director
5.	Shri Kuldeep Aggarwal	-	Manager
6.	Shri G. S. Gulati	-	Engineer
7.	Ms. Nandita	-	Sr. Engineer
8.	Ms. Taruna Saxena	-	Manager
9.	Shri Pramod Srivastava	-	Project Director

E. Talong HEP (225 MW) East Kameng District in Arunachal Pradesh by M/s. GMR Energy Pvt. Ltd. – For Environment Clearance

1.	Shri G. S. Sharma	-	Vice President
2.	Shri Rajbir Singh	-	Head
3.	Shri Pravin Deshmukh	-	Assistant Manager
4.	Shri Ravinder Bhatia	-	Director
5.	Shri Arun Bhaskar	-	Director

F. Morand-Ganjal Irrigation Project, in Hoshangabad District of Madhya Pradesh by M/s Naramada Valley Development Corporation-For consideration of extension of validity of ToR.

1.	Shri U. C. Jain	-	Chief Engineer
2.	Shri M. K. Sharma	-	Consultant
3.	Shri R. Krishnamoorthy	-	Consultant

G. Narmada Malwa Gambhir Link Project MP Barwah, Sanwer, Ujjain, Depalpur, Ghatiya, Barnagar – For consideration of TOR

1.	Shri U. C. Jain	-	Chief Engineer
2.	Shri M. K. Sharma	-	Consultant
3.	Shri R. Krishnamoorthy	-	Consultant

H. Suntaley Tar HEP(40MW) Project in East Sikkim Distt. Sikkim being developed by M/s Hindustan Power –For consideration of extension of validity of ToR

1.	Shri Ajit Singh	-	Additional Vice President
2.	Shri Vivek Singh	-	DCM
3.	Shri Shyam Jha	-	Engineer
4.	Shri Ravinder Bhatia	-	Director
5.	Shri Arun Bhaskar	-	Director

I. Ujh multipurpose project (186 MW) at Burdasi village near Panjtiethi at Deoli Village in State of J&K State Power Development Corporation- For consideration of ToR.

1.	Shri Iftikhar Karkoo	-	General Manager
2.	Shri Prem Nath	-	Chief Engineer
3.	Shri D. S. Charak	-	Executive Engineer
4.	Mohmd. Arif	-	IRGSSA
5.	Shri Krishna Tomar	-	IRGSSA
6.	Shri Praveen Dwedi	-	IRGSSA

J. Athrapalli HEP (163 MW) Project in Kerala by M/s Kerala State Electricity Board- For consideration of Environmental Clearance.

1.	Shri M. Sivasankar, IAS	-	Chairman
2.	Dr. A. G. Panduraman	-	Scientist 'F'
3.	Shri Mohanan P.	-	Executive Engineer
4.	Shri Ramon R.	-	AEE

K. Shirapur Lift Irrigation Scheme in Solapur by Maharashtra Krishna Valley Development Corporation Pune- For Consideration of ToR.

Cancel

L. Lohit River Basin Study, enhancement of scope; by WAPCOS

1.	Dr. Aman Sharma	-	General Manager

M. Mumari Dam under Bhatsa Project Tal-Shahpur Distt. Thane, Maharashtra-For consideration of ToR

1.	Shri Kunjir	-	Chief Engineer
2.	Shri M. Amale	-	Executive Engineer
3.	Shri Myakal	-	Assistant Engineer
4.	Shri Rohit Bhagat	-	Scientist

N. Anjaw(270 MW) HEP in Anjaw District, Arunachal Pradesh by Lohit Urja Private Ltd.-For consideration of extension of validity of ToR

1.	Shri Senthil P.	-	Sr. Engineer
2.	Shri Syed Javed Mohsin	-	Sr. Consultant
3.	Shri Rajendra Singh	-	Consultant
4.	Shri Rayachandra Khandelwal	-	AGM
5.	Shri Ravinder Bhatia	-	Director
6.	Shri Arun Bhaskar	-	Director
7.	Shri Jaideep Lakhtakia	-	Director
8.	Shri R. B. Singh	-	Member

O. Demwe Upper (1080 MW) HEP in Anjaw District of Arunachal Pradesh by Lohit Urja Pvt. Ltd.- For consideration of extension of validity of ToR.

1.	Shri Senthil P.	-	Sr. Engineer
2.	Shri Syed Javed Mohsin	-	Sr. Consultant
3.	Shri Rajendra Singh	-	Consultant
4.	Shri Rayachandra Khandelwal	-	AGM
5.	Shri Ravinder Bhatia	-	Director
6.	Shri Arun Bhaskar	-	Director
7.	Shri Jaideep Lakhtakia	-	Director
8.	Shri R. B. Singh	-	Member

******