Minutes of the 82nd Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects constituted under the provisions of EIA Notification 2006, held on 26-27th February, 2015 at Brahmaputra Meeting Hall, 1st Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi110003

The 82nd Meeting of the Expert Appraisal Committee (EAC) for River Valley and Hydroelectric Projects was held during 26-27th February, 2015 at Brahamaputra Meeting Hall, 1st Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi110003. The meeting was chaired by Shri Alok Perti, Chairman. Dr. K. D. Joshi, Dr. Sathyakumar and Shri. H. S. Kingra, Members could not attend the meeting. The list of EAC Members and officials/consultants associated with various projects and who attended the meeting is at **Appendix**.

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

1st Day (26.02.2015)

1. **Agenda Item No.1**: Welcome by Chairman and confirmation of Minutes of the 81st EAC meeting held on 27-28th January, 2015. The minutes of 81st EAC meeting was confirmed as was circulated. Thereafter, following agenda items were taken-up:

Agenda Item No. 2.1 Badaun Lift Canal Project in the Badaun of Uttar Pradesh by M/s. Irrigation Department, Government of Uttar Pradesh – For consideration of ToR.

The project proponent made a detailed presentation on Badaun Lift Canal Irrigation Project proposed in Badaun and Sambhal Districts of Uttar Pradesh. The project is proposed to divert water from the existing Narora barrage on the river Ganges during monsoon season only for providing water for kharif season crops. Therefore, no storage and diversion of the lean season or non-monsoon flows has been envisaged**.** While the Gross Command Area (GCA) is about 1,99,522 ha, the d Culturable Command Area (CCA) is about 1,39,665 ha.

The project envisages construction of a canal head regulator on upstream of left bank of Narora Barrage with a view to divert 102 cumec of water which includes

82 cumec for Irrigation and rest 20 cumec for Silt ejector. From Narora barrage, a gravity main canal of 20.05 Km length is proposed to be constructed up-to village Dhandwara on banks of river Mahawa. Four branch canals namely Sahaswan Branch (14.48 Km), Nadha Branch (9.1 Km), Islamnagar Branch (28.98 Km) and Asafpur Branch (12 Km) off-taking from main canal are proposed to carry water to the command area through its distribution network consisting of distributaries and minors. The first one i.e. Sahasawan Branch canal will take off from main canal at 14.1 Km RD and provide water for irrigation in Ganga Mahawa doab area. The remaining water will be lifted at 15 m height at Dhandwara and delivered to second part of Main canal after crossing the river Mahawa. The main canal then flows as gravity canal and serves the irrigation demands of the uplands beyond the Mahawa river through branch on main canal at R.D. 27.20 Km, 37 Km and 52.30 Km, respectively.

The command area of the proposed scheme falls in five tehsils namely, Sahaswan, Bisauli, Bilsi Sadar and Gunnaur. Sahaswan, Bisauli, Bilsi and Sadar tehsils are in Badaun District and Gunnaur tehsil is in Sambhal District. The villages coming under this scheme are reported to be poverty stricken. 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, as per UP Government, providing irrigation facility and stabilizing the agricultural production, will be a much needed relief to the people. Crops such as Paddy, Jowar/ Bajra, Maize, Pulses, Oilseeds, Vegetables, other crops /spices etc. are proposed to be cultivated in the Command Area.

The command area is more than 10,000 ha and as per the conditions stipulated in EIA notification and the project is categorized as **'A'**. The proposed project requires approximately 1741 ha of land for construction activities. No forest land is required and no submergence will occur as the water will be diverted from existing barrage and will be lifted by 15 m at a distance of 20.05 Km on main canal at Dhandwara and delivered to second part of Main canal. About 1, 18,58,824 units

per month of power will be required to pump the water which will be provided by the State Government. The proposed project will have following benefits:

i. The proposed project is in line with the UP State Water Policy which promotes water use efficiency.
ii. There will not be any displacement of families except some part of the land falling in the canal alignment/route in the command area that to be acquired as per Land Acquisition Bill 2013. Thus, R&R are other good features of the project which will benefit the PAFs.
iii. No forest land is required for the project.
iv. Proposed canal network in the command area will not only provide irrigation in the command area but, also improve the level of ground water table in addition to providing drinking water to villagers, cattle's etc.
v. The scheme will benefit to some extent in flood management and at large for kharif crop in the command area where limited rainfall pattern not seems to be sufficient to support the crops.
vi. There will not be any structural change in the existing barrage and no change in submergence except the construction of head works / regulation on left bank for proposed scheme.
vii. No change in water flowing pattern through the existing barrage from upstream to downstream regime of river Ganges in the area as for as e flow concerned.

The estimated cost of the proposed project is about Rs. 1850.35 Crores. The total power requirement for the project is about 20 MW, which will be sourced from State Electricity Board. About 633.56 MCM of water will be drawn from the existing Narora barrage. Based on dependable flow pattern at Narrora Barrage site, the benefit-cost ratio of the project has been worked out to be 1.88 and is techno-economically feasible, as reported by the State Government Authority.

After detailed deliberations, the EAC recommended granting of the scoping clearance for the project subject to the following conditions in addition to the provisions of standard TORs to be followed in the EIA study:

- Project Proponent has to submit the clearance/NOC from Department concerned of the Uttar Pradesh State Government for utilization of existing barrage and surplus flood water for the irrigation purpose. Permission from NGRBA may also be necessary.
- 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, or any other designated authority as the case may be.
- Bio-diversity study is to be to be conducted by a suitable institute as per OM of MoEF dated 28.05.2013. The list of institutes is available in the portal of the Ministry.
- R&R Plan - plan will also incorporate community development strategies. R& R Plan is to be formulated as per new Act, 2013 which came into force w.e.f. 1.1.2014.

Agenda Item No. 2.2 Doimukh Hydroelectric (80 MW) Project in Papumpare District of Arunachal Pradesh by M/s. SJVN Ltd – for consideration of TOR.

The project proponent made a detailed presentation on the project. The Doimukh Hydroelectric (80 MW) Project is proposed on Dikrong River in Papum Pare District of Arunachal Pradesh to harness the river waters for hydropower generation. The barrage site is located near village Chiputa and the powerhouse site is located near village Emchi in Papumpare District of Arunachal Pradesh.

The project will utilize the discharge of Dikrong River along with regulated discharge of 405 MW Ranganadi Stage-1 HEP Project. The power potential studies have been carried out based on 23 years (1978 to 2001) generated flow series on 10-daily basis. The submergence area in the reservoir of the project at 168 m FRL is 55.83 ha. Total land requirement for various project components based on preliminary assessment is about 104.33 ha and will be firmed-up during EIA/EMP study.

The project is located on the left bank of Dikrong river and envisages construction of a 20 m high barrage with provisions of a fish ladder on the right

abutment having 3 no. under sluice and 7 no. river sluice gates as well as an overflow spillway to adequately pass the design flood of 2843 cumecs. The Head Race Tunnel (HRT) is circular shaped, 4.80 Km long with 7.75 m diameter with a design discharge of 209 cumecs by diverting river water to powerhouse. A 268.30 m long tail race tunnel and 433 m long tail race channel downstream of gates shall discharge the water back into the river. The minimum TWL is 112.86 m. A surface powerhouse is proposed with 2 units of 40 MW each. The estimated total cost of the project at May 2012 price level is about Rs. 739.58 Crore, with a proposed construction period of 48 months.

After detailed deliberations, the EAC recommended granting of the scoping clearance for pre-construction activities in the proposed project site with the following additional conditions 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.
2. Information on the 10-daily flow basis for the 90% dependable year the flow intercepted at the barrage, the environmental flow and other flow releases at downstream of the dam and spills shall be included in the EIA report.
3. Hydrological studies/data as approved by CWC shall be utilized in the preparation of EIA/EMP report. Actual hydrological annual yield may also be given in the report.
4. Environment flow to be as per MOEF's latest norms of @ 20% in lean season, 20-30% in non-lean/ non-monsoon and 30% during monsoon season corresponding to 90% dependable year and to be followed in the power potential studies. A site specific study is to be conducted for assessing e-flow requirements and submitted along with EIA/EMP.
5. R&R Plan - plan will also incorporate community development strategies. R& R Plan is to be formulated as per new Act, 2013 which came into force w.e.f. 1.1.2014.

Agenda Item No. 2.3: Purthi HEP (300 MW) Project in Lahaul & Spiti and Chamba Districts of Himachal Pradesh by M/s. Purthi Hydro Power Pvt. Ltd - for consideration of TOR

The project proponent along with Energy & Power Department, Government of Himachal Pradesh made a detailed presentation on the project. The committee was informed that the Purthi HEP (300 MW) Project in Lahaul & Spiti and Chamba Districts of Himachal Pradesh by M/s. Purthi Hydro Power Pvt. Ltd for Scoping/TOR clearance was earlier submitted to Ministry for Scoping/TOR clearance. It was explained that the project has been conceived as an extension of Reoli-Dugli HEP on Chenab River by proposing to utilize the tail water discharge of Reoli-Dugli HEP. The project thus, being an extension of Reolo-Dugli HEP, there is no land requirement for additional submergence area. The land requirement for project components, infrastructure & allied facilities is 72 ha.

The committee was informed that the Expert Appraisal Committee (EAC) for River Valley & HEP had considered this project in its meeting held on 23-24th November, 2012. The committee after critically examining the environmental issues associated both with the instant project and its upstream/downstream project was of the following opinion/view:

- The Committee while considering the other projects on Chenab was not told about this project at any point of time. Thus, Purthi HEP has been introduced by Govt. of Himachal Pradesh as an afterthought and extension of Reoli Dugli HEP. The Committee regretted this communication gap. Because, the guidelines of the EAC for maintaining free flow stretch between two projects have been violated as a result of introduction of the project along with its distinct engineering features.
- The proposed tunnelling will deprive release of TRT water of Reoli-Dugli back into Chenab, which will virtually dry-up the flow in 23.32 km long continuous river stretch. This, if this project is allowed to come up, may

invite wide spread resentment among the public and various stakeholders as it may substantially damage the ecological health and integrity of Chenab river.

- The TWL of Purthi HEP is matching with the FRL of the downstream project Sach-Khas, which was already approved by Government of Himachal Pradesh, and thereby leaving no free flow stretch, which is unacceptable from environmental point of view.

- Therefore, the Committee concluded that the project proponent and Government of Himachal Pradesh may review and revise the proposal in the light of the above observations for reconsideration. In view of this, the Committee did not find the Purthi HEP (300 MW) project, in its form and shape fit to be awarded scoping clearance

Based on the recommendations of the EAC on 23-24th November, 2012, the Ministry informed the Himachal Pradesh Government on 28.3.2013 accordingly and closed the file.

Thereafter, the project proponent made another detailed presentation on the project during the instant EAC meeting. The committee noted that the proponent did not incorporate any modification in the project parameters and this is all the same as it was presented 2 years back. The committee also noted that there will be no free stretch of free flowing river and about 38 Km of river length will be affected and become adversely affecteddry. However, the Government of Himachal Pradesh submitted that though there is no free flowing stretch of river, there is no habitation in the area and the river flows in deep Georges which do not permit for any habitation and even animals can go in that deep gauges access river water. The project was planned earlier with the reason that it does away with provision of a separate dam/barrage construction involved and only diversion of water involved. There are perennial streams d/s of reoli-dugli HEP which flow and contribute to the river and do not affect the river.

The committee, after further deliberations, concluded the following:

- As a huge length of 38 km stretch will be deprived of normal flow, e-flow in this stretch should be more than the general norms being followed by EAC. Therefore, entire tail water of Reoli-Dugli should not be used for power generation. A part of this water should be released untapped into the river so that downstream flow is suitably augmented in the 38 km stretch.

- Doing away with new dam is a good environmental proposition as it will not involve fresh submergence of forest and non-forest areas includibg dispensing with adverse impact during construction phase. However, leaving such a long stretch with minimum water has to be reviewed considering the water balance of the river. It is to be ensured that Aquatic bio-diversity survives and thrives in this stretch.

- In order to keep a minimum free flowing stretch, alternative sites for powerhouse may have to be located.

- Therefore, the committee reiterated the previous committee's observation and concluded that the project, in its present shape & form not acceptable for consideration for scoping clearance.

- An alternate proposal if found techno-economically and environmentally sound, may be accordingly submitted through a detailed comparison of the present and new proposals.

Agenda Item No.2.4 Lower Penganga (Interstate) Project in the state of Maharashtra and Adilabad District of Telangana by Irrigation & CAD Department, Government of Telangana - For consideration of Environment Clearance (EC).

The Project Proponent along the Consultant made a detailed presentation on the project. The committee noted that both Maharashtra and Andhra Pradesh have stakes in the Lower Penganga Project as it will benefit both the states. EC for Maharashtra component has since been granted. Irrigation & CAD Department,

Government of Andhra Pradesh submitted the proposal for Scoping/TOR clearance earlier and was granted by the Ministry.

As mentioned, the Lower Penganga Irrigation project is an Interstate Irrigation project covering Maharashtra & Andhra Pradesh States. The net annual flows at Lower Penganga dam are assessed as 42.67 TMC (thousand million cubic feet) to be shared in the ratio of 88:12 between Maharashtra and Andhra Pradesh (i.e. Maharashtra-37.55 TMC & Andhra Pradesh-5.12 TMC). The project envisages construction of 35.63 m high earthen dam across Penganga River. The project has an irrigation potential of 1,40,818 ha land in Maharashtra and 19,233 ha land in Andhra Pradesh. The Environmental Clearance (EC) for Lower Penganga project was accorded on 17.5.2007 for Maharashtra portion, as the Public Hearing was held only in Maharashtra. As the project proponent could not provide information on environmental issues pertaining to Andhra Pradesh at that time, therefore, the proposal for irrigation in Andhra Pradesh was not considered then.

Thereafter, the project proponent (Andhra Pradesh) made a separate proposal for Andhra Pradesh portion and submitted to Ministry for Scoping clearance. The Scoping/TOR Clearance has been accorded on 28.2.2013 to Lower Penganga project in Andhra Pradesh portion when the Andhra Pradesh State was not bifurcated. Now the state is bifurcated into Telangana State and Andhra Pradesh State and the project falls is in bifurcated Telangana State.

The net annual 75% dependable flows at Lower Penganga dam are assessed as 42.67 TMC to be shared in the ratio of 88:12 between Maharashtra and then Andhra Pradesh. This implies that the share of Maharashtra is 37.55 TMC and that of Telangana is 5.12 TMC. The Telangana state's share of water is proposed to be utilised for irrigation purpose in the backward tribal areas of Adilabad district. The project will create an irrigation potential of 227271 ha (CCA:140818 ha) in Yavatmal & Chandrapur Districts of Maharashtra and 29757 ha (CCA:19232 ha) in Adilabad District of Telangana.

The Lower Penganga Project envisages construction of a dam across Penganga river with central gated concrete spillway from RD 855 to RD 1260 m with 25 nos of radial gates of size 12 m X 8 m and earth dam on both flanks of concrete

dam across Penganga river and canal on left flank. The total length of dam including spillway is 1998 m. The gross storage of the reservoir is 1045.37 Mm^3 (36.92TMC) at FRL of +261.500 m.

The Telangana canal takes off at CH.11.91 Km of Left Bank Canal (LBC). This canal will be 1925 m long up-to the left bank of river Penganga. An aqueduct will be constructed across Penganga river. The Maharashtra Government will take up the Telangana canal works up-to the right bank of Penganga river including the aqueduct. The gravity canal in Telangana portion will be 89.09 Km long from the off take point.

Salient Features of Lower Penganga Inter-state Project

Name of the Project	**Lower Penganga Project**
A) River Basin details	
River Basin	G7 sub-basin of River Godavari
State	Maharashtra
District	Yavatmal
Taluka	Ghatanji
Village	Tadasawali
Latitude	19^o – 54` - 30" N
Longitude	17^o – 12` - 30" E
B) Project Area Reference	
Toposheet No	56-I/1
Gross Command Area (GCA)	
Maharashtra	227271 ha
Telangana	29757 ha
Culturalable Command Area (CCA)	
Maharashtra	140818 ha
Telangana	19232 ha
C) Proposed Water Utilisation from Project	
Maharashtra	37.55 TMC
Telangana	5.12 TMC
Total Utilisation	42.67 TMC
D) Spillway	
Type	Ogee spillway

Design flood with PMF	31207 Cumecs
Max. height of Ogee from foundation	27.630 m
Length of spillway	405m (CH.855m to 1260m)
Type of Gate	Radial
No. and size of gates	25 Nos of 12m x 8m
E) Controlling Levels	
FRL	261.5 m
MWL	263.5 m
TBL	266.00 m
MDDL	252.00 m
Silt Level	249.00 m
River bed level	230.37m
F) Capacity	
Gross	1045.37Mm^3 (36.92TMC)
Live	693.4737 Mm^3 (24.49TMC)
Total area under Submergence	39536 Acers entirely in the state of Maharashtra
Villages affected	34 villages in Yavatmal District & 12 villages in Nanded District

Salient Features of Lower Penganga Project (Telangana Portion)

A) Project Area Reference	
Toposheets	56I/1,I/5,I/6,I/9,I/10,I/13 & I/14
B) Irrigation Ha	
Gross Command Area (GCA)	29757 ha
Culturalable Command Area (CCA)	19232 ha.
C) Proposed Water Utilisation from Project	
For Irrigation	4.923 TMC
For Drinking water supply	0.197 TMC
Total Utilisation	5.12 TMC
Off take point	CH.11.91 Km of LBC
Length	89.09 Km
Discharge at off take	18.15 cumec
Bed width	5.2m / 2.75m

Side slopes	1 ½ : 1
Bed fall	1 in 10000 to 1 in 9000
Off take level (CBL)	245.31
FSL	247.91
No. of reaches	5
No of distributaries	26
No. of structures	172
Forest land	8.78 ha
Private land	258.22 ha
Govt. land	Nil
Number of Mandals benefited	4
Number of Villages benefited	89
Total population benefited	76000

B. Compliance of observations raised by EAC during 26-2-2015 in EAC meeting:

Observation 1:

S.No.	Issues raised by EAC, MoEF 82nd EAC Meeting on 26th February, 2015	Compliance
1	There are no documents about the project available on the MoEF & CC, Environmental Clearance Website for Maharashtra and the only document available under EC Granted Section in Telangana State is a ToR Letter (This is too is filled under the wrong section)	As per mutual agreement dated 10th December 1998, Lower Penganga project has been proposed between Maharashtra and Telangana state (the then Andhra Pradesh) Interstate Project with water sharing ratio of 88:12. Subsequently, the Government of Maharashtra has obtained the Environmental Clearance for their portion. The letter is enclosed herewith as **Annexure -1**. As per the instructions of MoEF vide letter no.J.12011/68/2006-IA.I dated: 17.05.2007, I & CADD, former Government of Andhra Pradesh State (Present Telangana State) has to apply for Environmental Clearance for Water Conductor System (WCS) and the command area of 19232 Ha of CCA in Telangana portion. The Andhra Pradesh portion neither involves submergence nor the Project Affected Families (PAFs). Hence, the document pertains to the ToR, EIA & EMP Report for the project portion in

S.No.	Issues raised by EAC, MoEF 82nd EAC Meeting on 26th February, 2015	Compliance
		Telangana State uploaded in the MoEF & CC website. The acknowledgement of the same is herewith enclosed.
2	In addition, there is no FORM -1 or draft EIA uploaded in MoEF & CC Website and the documents for considering the project are far from complete.	The FORM-1 for the Telangana (Erstwhile Andhra Pradesh) portion of the project was submitted and uploaded at the time of ToR approval and subsequently the ToR was issued on 28.02.2013. The complete document as per the norms of MoEF&CC was uploaded in your website on 27.01.2014 for consideration of EC.
3	In Maharashtra, Penganga Dharna Virodhi Samithi has been fighting the dam for the past seventeen years in various courts of law and their struggle is continuing. The project will displace more than 1.5 lakh people and submerge more than 19000 Ha of land including nearly 10000 Ha fertile irrigated farm land and nearly 1000 Ha Forests land in Maharashtra	By considering the concern of Penganga Dharna Virodhi Samithi and the project affected people, Government of Maharashtra has implemented the R&R Package. As per the stipulated Forests and Wildlife Acts, the Government of Maharshtra has got the Forests clearance for the diversion of 998.1 Ha of Forests land from MoEF Vide their letter number: F.No. 8-129/2002-FC dated: 29th January 2014. The Government of Maharashtra is already allotted the non-forest land for the compensatory afforestation. The letter is enclosed herewith as **Annexure -2**. Similarly, Government of Maharshtra has also obtained MoTA Clearance from the Ministry of Tribal Affairs vide their letter no. 4/20/2011-CP&R Dated: 22.03.2013. The letter is enclosed herewith as **Annexure - 3**.
4	The Penganga Dharna Virodhi Samithi has issued "Contempt of Court" notice on ninth November 2014, to various state departments as well as the Secretary, MoEF and CC for violation of the conditions put down by the Hon'ble NGT in its order dated 10 March 2014 in	The Penganga Dharna Virodhi Samithi has filed petition number 4025/2011 in the Hon'ble High Court, Nagpur Bench, on the basis of this petitions, Hon'ble High Court had given interim stay on 19.09.2011 to the Forests and Environmental Clearance granted to this project by Central Government.

S.No.	Issues raised by EAC, MoEF 82nd EAC Meeting on 26th February, 2015	Compliance
	which the state as well as MoEFF & CC representatives were supposed to constitute a committee to oversee compliance of various NGT Conditions pertaining the Project. As the notice reads, no such committee has even been constituted	The Writ Petition number 4025/2011 filed by Penganga Dharna Virodhi Samithi, Sadoba-Savli was modified as PIL No. 4/2012, subsequently as per the Hon'ble Supreme Court directive in PIL No. 4/2012, the case was transferred to National Green Tribunal, New Delhi. After 8 no. of hearings, the case was transferred to NGT Pune Bench, which was formed on 25.08.2013. The NGT Pune Bench took up case 14.10.2013 and disposed of the application of the petitioners on 10.03.2014 with certain directives. The Vidharbha Irrigation Development Corporation Officials stated the status of Court Cases during interstate Chief Engineers Level meeting held on 03.02.2015 at Hyderabad. The copy of the NGT Judgement is enclosed herewith. The Judgements are enclosed herewith as **Annexure -4**.
5	In light of recurrent lapses and absence of requisite documentation on MoEF & CC website just one day before the meeting, the project cannot be considered for EC. Any such considerations will not stand Legal scrutiny and will underline the consistent laxity on the part of EAC in putting project documents in public domain.	The complete document as per the norms of MoEF & CC was uploaded on 27.01.2014.

Observation 2: **I**s there any submergence in Telangana State.

Reply: The scope of the project in Telagana is construction of canal and development of command area in the 4 mandals of Adilabad district. Since the Head Works are located in the Maharashtra State there is no submergence in the Telangana State.

Observation 3: Is the studies are carried out for 1 year as per the TOR?

Reply : Yes. TOR of the project was issued on 28-02-2013, as part of compliance to the TOR baseline environmental studies were

carried out for 3 seasons (Pre-monsoon, Monsoon & Post-monsoon) covering one calendar year from July 2013 to June 2014.

Observation 4: What is the GCA & CCA of Maharashtra & Telangana?

Reply : GCA of Maharashtra & Telangana is 227271 ha & 29757 ha respectively & CCA of Maharashtra & Telangana is 140818 ha & 19232 ha respectively.

Observation 5: Status of WUA's & Warabandhi system.

Reply : Government of Telangana State (Erstwhile state of AP) has enacted APFMIS Act 1997 to bring in sense of ownership of the irrigation system to the beneficiaries i.e. Farmers. As per the act, based on the size (minor, medium and major) of the Irrigation System, different committees are constituted. Through election representatives are elected to head these committees and take the responsibilities of sharing the available / allocated water among them and also shall monitor rationale distribution of water to its members. Committees shall also exercise and educate members in effective utilization of available water and also inculcate crop discipline among its members.

The WARABANDHI system is already in practice under SRSP, Nizam Sagar and Nagarjuna Sagar Project. Similarly, here will be followed.

Observation 6: Is there any proposal on pressurized system?

Reply : Drip irrigation system proposed at five patches in the command area covering 10% of the Ayacut. The provision of Rs. 26.61 Crores is made in the cost estimate.

Observation 7: Why you have followed drip irrigation system only and Is there any change in the proposed cropping pattern due to savings of water.

Reply : The predominant soils in the Command Area are shallow black to deep calcareous black soils, where they are suitable for cotton and chillies. Due to water savings from the proposed drip irrigation, the command area of wheat in Rabi may increase from 5 to 8%.

Observation 8: Is there any provision for OFD Works

Reply: Total provision of Rs. 25.66 Crores is made towards the OFD works.

Observation 9: What is your muck disposal plan.

Reply: Nearly 50% of the muck will be utilised for the formation of banks of canal and as per the prevailing practice in the state extra area of land acquisition is made along the canals for spoil banks.

Observation 10: Are you using conjunctive use of ground water in the project.

Reply : As the ground water table in the project area is already deeper hence, we have not considered the conjunctive use of ground water.

Observation 11: Existence of coal deposits in the Command area.

Reply : There are no coal deposits in the command area and the nearest coal deposits are about 125 km from east of command area.

Observation 12: Is there any specific objections raised by the public in Public Hearing.

Reply : No. They have requested to adopt new LA Act 2013.

Observation 13: What is the stage of the Forest Diversion proposal.

Reply : The proposal from Government of Telangana has been already submitted to Additional PCCF, RO, MoEF & CC, Chennai.

Observation 14: Any special thing you want to tell about the Public Hearing.

Reply: The villagers attending the public hearing unanimously made resolution for declaring Lower Penganga Project as a National Project.

Observation 15: What is your EMP Cost and have you made any provision for social amenities.

Reply : EMP Cost made in the project is Rs. 10.00 Crores and no provision is made towards the social amenities. However, as per the Committee suggestions the EMP Cost will be revised to 15.0 by considering Social amenities in the project.

The committee after further and detailed deliberations recommended the project for environmental clearance with the following conditions:

- Project Proponent has to submit the clearance/NOC from Department concerned of the Maharashtra State Government i.e. from Chief Wildlife Warden/approval of NBWL, of any other designated Authority, as the case may be.

Agenda Item No.2.5: **Formation of Flood carrier Canal from Kannadian channel to drought prone areas of Sathankulam, Thisayanvilai by Interlinking Tamiraparani,**

Karumeniyar and Nambiyar Rivers in Tirunelveli and Thoothukudi Districts of Tamil Nadu by Water Resources Organization, Public Works Department, Government of Tamil Nadu- For Environmental Clearance (EC)

The project proponent along with consultant (WAPCOS) made a detailed presentation on the project proposal. The committee noted that the river Thamiraparani is one of the perennial rivers in southern India. The river originates from eastern slope of Western Ghats and traverses a length of 120 Km through Tirunelveli and Thoothukudi Districts and confluences in Bay of Bengal near Punnakayal village of Thoothukudi District. About 12 tributaries join this river along its entire traverse. The area of the Thamiraparani river basin is about 5665 Sq.km. The river system provides irrigation facility to 77,500 ha ayacut in both Tirunelveli and Thoothukudi Districts.

The catchment area of Thamiraparani and its tributaries is about 4536 Sq.km. The annual yield from the river basin is estimated at 48487 Mcft (1373 MCM). After meeting the water requirement for irrigation needs, a huge quantity of water is found surplus at the tail end of the river. An average quantity of 13758 Mcft (389.6 MCM) is found surplus at the last anicut namely Srivaikundam Anicut and flows in to the sea as unutilized, where, certain areas, within the Gross Command Area of the basin and adjoining basin namely Pachaiyar, Karumeniyar and Nambiyar are suffering due to water scarcity.

The existing Kannadian channel runs for a length 37.145 Km up to Melaseval and irrigates 10,334 acres of direct and 2,166 acres of indirect ayacut. The channel feeds 176 direct sluices and 16 tanks. A number of inlets fall in its course of run. The Koraiyar is the major level crossing river, crossing Kannadian channel at L.S. 6.4 Km near Vellankuzhi village. The Kannadian channel is functioning as an irrigation channel-cum- drainage carrier and thereby the commandability of the sluices is highly affected. In order to improve commandability a number of model sections had been constructed across the channel course. Though the commissioning of model sections has improved the commandability to a certain extent, it is not a permanent

solution. Hence, the channel course has been proposed to be lined to optimize the cross section to provide commandability to the existing sluices. By geometrical improvement to the canal section, commandability to sluices alone could be improved. However, the carrying capacity of the channel could be marginally improved, which is very meager to divert the surplus flood flow to the drought prone area from its tail end. Accordingly, a Feasibility Report to form a Flood Carrier Canal from Kannadian channel to drought prone area of Sathankulam, Thisaiyanvilai by interlinking Tamiraparani, Karumeniyar and Nambiyar rivers was prepared and submitted to Chief Engineer, Madurai region vide Executive Engineer, ANKRP Division, Kudiyiruppu Letter No: D.O/D.B/146-SE/C.501/2006/ dated 30.8.2006. On scrutinizing the merits and demerits of the proposal the Chief Engineer, Madurai Region gave concurrence for the present proposal, vide letter no: OT.1/AE1/2336/04/ dated 5.9.2006.

For utilizing the surplus flood water of river Thamiraparani the Government of Tamil Nadu vide G.O.Ms.No: 204 Public Works (P2) Department dated: 12.06.2008 had administratively sanctioned Rs.36900 lakhs for formation of Flood Carrier Canal from Kannadian Channel to Drought Prone Area of Sathankulam, Thisaiyanvilai by Interlinking Thamiraparani, Karumeniyar and Nambiyar Rivers in Tirunelveli and Thoothukudi Districts of Tamilnadu.

It was noted that the project area covers 4 talukas in Tirunelveli District namely Ambasamudram, Palayamkottai, Nanguneri and Radhapuram and 3 talukas in Thoothukudi District namely Sathankulam, Thiruchendur and Srivaikundam. The key components of the interlinking scheme are:

- Improvements to Kannadian Anicut of Thamiraparani river including formation of flood bank.
- Increasing the carrying capacity of Kannadian channel from LS.0 to 6500 m.
- Excavation of Flood Carrier Canal from LS.0 to 73 Km including formation of a percolation pond at ML Theri.
- Construction of 2 check dams across Karumeniyar one on upstream and other on downstream of Sathankulam Nazareth road.
- Excavation of Link canal to Karumeniyar 15th Group tanks from L.S. 0 to 5350 m.
- Excavation of Link canal to Nambiyar river from LS 0 to 6700 m.

- Excavation of Suviseshapuram supply channel from LS 0 to 7400 m taking off at LS.57.10 Km of Flood Carrier Canal.
- Excavation of link canal to Manimuthar 11th distributory from L.S. 0 to 2500 m taking of at LS. 41.1 Km of Flood Carrier Canal.
- Excavation of Idayankudikulam supply channel for a length of 15.75 Km.
- Excavation of supply channel to tanks from Flood Carrier Canal for a length of 56.445 Km
- Provision for construction of 3 Railway bridges, one at L.S.1850 m of existing Kannadian channel and two nos at L.S 500 m and LS 24450 m of Flood Carrier Canal.
- Provision for construction of Luscar shed, Store shed, Field officers quarters, office building and rest house.
- A total of 452 cross-drainage structures shall be constructed in the proposed project

The total command area to be benefitted is 23,040 ha in five Talukas. The details are given as below:

Taluka wise command area details

S.No.	District	Taluka	Command Area (ha)
1	Tirunelveli	Palayamkottai	1416.305
2		Nanguneri	7159.48
3		Radhapuram	3140.195
4.	Thoothukudi	Sathankulam	11075.485
5		Tiruchendur	248.535
	Total		**23040.00**

As a result of implementation of the project, water table in the adjoining wells will rise due to increased groundwater recharge. The sub-soil water to the nearby wells will be recharged. About 5,220 wells are likely to be benefitted. An extent of 24.80.0 ha (61.28 Acres) of wet land, and 1063.57.5 ha (2628.11 Acres.) of dry lands is to be acquired for Flood Carrier Canal. The extent of poromboke land to be

required for the Flood Carrier Canal is 66.83.0 ha (165.14 Acres). The total lands to be acquired for the project is 1155.20.5 ha. No forest land is involved in the project. The details are given as below:

Sl. No.	**Type**	**Area (ha)**
1.	Wetland	24.80
2.	Dry Land	1063.57
3.	Promoboke land	66.83
	Total	**1155.20**

The estimated project cost is about Rs. 66150 lakhs as per the schedule of rates for the year 2012-13.

The total command area is 23,040 ha prior to the project, cropped area is only 6038 ha. Thus, there will be an increase by about 17002 ha, which is an increase by about 381%.The introduction of irrigation will not only increase the cropped area, but would also increase the agriculture productivity as well. This would increase the agriculture production in the command area and is a significant positive impact. The existing and the proposed cropping pattern in the Command Area is given as below:

S.No.	**Season/Crops**	**Existing cropping pattern**	**Proposed cropping pattern**
		Area (ha)	**Area (ha)**
1	Mango	--	1250
2	Guava	--	930
3	Lemon	--	1340
4	Banana	--	2705

5	Flower (Jasmine)	--	1910
6	Cashew	--	1260
7	Murungai	--	5464
8	Sappotta	--	1115
9	Nelli	--	1028
	Sub Total	**--**	**17002**
10	Paddy	5220	6038
11	Fodder Crops	818	-
	Sub Total	**6038**	**6038**
	Grand Total	**6038**	**23040**

The average surplus water available at Kannadian Anicut when Srivaigundam Anicut surpluses water into the sea is 5076 Mcft or 143.72 MCM. The surplus water at Srivaigundam anicut is 11424 Mcft or 323.3 MCM. The total irrigation water requirement is 78.3 MCM. Thus, about 245 Mm^3 of additional water will be available. Hence there will be no Impact on the downstream users.

Primary survey indicated that *Tamarindus indica, Azadirachta indica*, *Cocos nucifera, Borassus flabellifer, Acacia ferruginea, Acacia planifrons, Mangifera indica, Caryota urens* were the dominant tree species. Amongst shrubs, *Calotropis procera, Vitex negundo, Tephrosia purpurea, Lantana camara, Dichrostachys cinerea, Calotropis gigaantia, Senna auriculata* etc were the dominant species. The dominant herbaceous species in the submergence area were *Chloris barbata, Phragmites karka, Cynodon dactylon, Alternanthera sessilis, Saccharum spontaneum, Perotis indica Themada triandra, Parthanium hysterophorus.* The tree density at various sampling sites in the project area to be acquired ranges from 144 to 248 trees/ha. The number of tree species observed at various sites ranged from 14 to17. Normally in a dense forest, tree density is of the order of 1000-1200 trees/ha. Thus, in project area, the tree density is low to moderate.

During the ecological survey of interlinking project area, no rare and endangered species falls under endangered category within the project area. *Syzygium zeylanicum c*onsidered as endangered species (Gopalan & Henry, 2000) was observed in the area. However, this species though observed in the study area but not found in the land to be acquired for the project. It is observed in dry deciduous mix forests and endemic to Tirunelveli (Manickam *et* al., 2001). The area to be brought under irrigation within the command area shall be devoid of forests.

The increase in vegetal cover would improve the organic content of the soils. As a result microbial activity would improve, leading to increase in the type and number of micro-organisms observed in the soils of the command area. This in the long run is expected to improve the soil fertility.

The project area is interspersed with settlements and agricultural land. In such settings large scale faunal population is not observed. Thus, no significant impact on wildlife is anticipated due to the project. However, among the wild animals, the common langur is found all over the region inhabiting groves, rivers banks and woodlands. *Rhesus macaque* and *Bonnet macaque* are generally distributed in the region. *Rhesus macaque* are terrestrial in habit, preferring the open plains to the forest clad country while *Bonnet macaque* inhabits forested areas, rocky cliffs and wanders about in parties. The Indian fox (*Vulpes bengalensis*) is common in the eastern parts of the study area. The wild dog (*Cuon alpines*) is more common in the forests than in the plains. Thus, among wildlife animals from different groups like primates, insectivores, rodents, carnivores and lagomorphs are common in nature which are mainly represented by monkey, languor, squirrel, mangoose, rats, mouse, and bats etc. No threatened, rare endangered (RET) or endemic species were observed during the survey in the study area except the presence of species in the Kalakad–Mundanthurai Tiger Reserve as per Forest working plan, which is about 9 km away from the existing Kanaidian Anicut- site. However, the Tiger reserve is located more than 10 Km distance from the proposed route of Flood Carrier Canal

and river inter linking sites. The mammalian species reported in the area are under Least Concern category as per IUCN status.

Due to the proposed project, no family is losing homestead. About 5150 PAFs are likely to lose land. The Rehabilitation Plan formulated is in line with the norms of "Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013". The measures outlined as a part of Rehabilitation Plan are depicted as below:

Sl. No.	Description	Unit	Assumed Provision#	Cost (Rs. lakh)
1	Market value of land			5307.65
	Total (A)			**5307.65**
2.	Factor to be multiplied for rural areas (Ax2)		2.0	10615.30
	Total (B)			**10615.30**
3.	Solatium charges (C)		2.0	10615.30
	Final Award (B+C)			**21230.60**
4	**Choice of Annuity or Employment**			
	a) At least one member per affected family will be provided job (either in the project or arrange for a job in such other project), after providing suitable training and skill development in the required field Or **b)** Onetime payment of Rs. 500,000 per affected family Or **c)** Annuity policies that shall pay not less than Rs. 2000 per month per family for 20 years, with appropriate indexation to the Consumer Price			Skill Development for one member of each PAF

Sl. No.	Description	Unit	Assumed Provision#	Cost (Rs. lakh)
	Index for Agricultural Labourers			
5	Skill development opportunities to the eligible persons from the affected families as per the criteria as may be fixed by the appropriate Government	5150	5150 PAFs x Rs.1000/ month x 12 months for each PAF	618
Total				**21848.60**

An amount of Rs.3.30 crore has been made for implementation of the Local Area Development Plan. The details are given as below:

Sl. No.	Items	Budget (Rs. lakh)
1	Construction/ Up-gradation schools in Study Area	90.00
2	Scholarships to students in the Study Area	36.00
3	Upgradation of Health Care Facility	54.50
4	Improvement of living conditions	150.00
	Total	**330.50**

The total amount to be spent for implementation of Environmental Management Plan (EMP) including R&R cost is Rs.230.36 Crores. The above-mentioned cost is as per "The right to fair compensation and transparency in Land Acquisition Rehabilitation and Resettlement Act 2013". However, for compensation to PAFs shall be disbursed as per the actual land cost initially and the further amount shall be disbursed accordingly by the State Government once the act and Rules are finalized. The details are given as below:

Sl. No.	Item	Cost (Rs. lakhs)
1	Environmental Management in labour camp	188.23

2	Stabilization of Quarry Site	50.10
3	Landscaping and Restoration of construction	38.00
4	Air, Water and Noise Pollution Control	24.88
5	Energy Conservation measures	30.00
6	Public health delivery system	125.80
7	Public Awareness Programmes	10.00
8	Compensatory Afforestation and Bio-diversity	265.85
9	Greenbelt development	40.00
10	Fisheries Management	25.00
11	Resettlement and Rehabilitation Plan	21868.00
12	Local Area Development Plan	330.50
13	Environmental Monitoring during construction	35.70
14	Purchase of noise meter	1.00
15	Water Quality Testing Kits	3.65
	Total	**23036.71**

The peak labour and technical staff congregation would be of the order of 440 and 60 respectively. Most of the labourer shall come from the nearby villages. Thus, for assessment of impacts, a total of 2060 labour and technical staff have been assumed to be involved in project construction and related activities. Separate accommodation and related facilities for workers, service providers and technical staff are to be provided as a part of the project.

After thorough scrutiny and examination, the EAC observed that the project proposal is for diversion of surplus flood water of river Thamiraparani during monsoon for formation of Flood Carrier Canal from Kannadian Channel to drought prone area of Sathankulam, Thisaiyanvilai by Interlinking Thamiraparani, Karumeniyar and Nambiyar Rivers and provide irrigation and drinking water facility in the area. Only canal system for diversion of water is proposed to be constructed to provide water. After detailed deliberations, the EAC recommended the project for grant of environmental clearance with a condition that commitments made in the Public Hearing shall be fully fulfilled by the project proponent.

2nd Day (27.02.2015)

Agenda Item No.2.6: Tagurshit HEP (74 MW) Project in West Siang District of Arunachal Pradesh by M/s L & T Arunachal Hydro Power Ltd –For consideration of extension of validity of ToR

The project proponent withdrew the application and did not attend the meeting

Agenda Item No.2.7 Dikhu HEP (186 MW) Project in Nagaland by M/s Naga Manu Pvt. Ltd –For consideration of extension of validity of ToR

The project proponent made a brief presentation on the project. The committee noted that the Dikhu HEP is proposed in Longleng District of Nagaland. The project envisages construction of 112 m high rock-fill dam about 380 m downstream of the confluence of Dikhu and Yangnyu rivers to generate 186 MW of hydropower. The catchment area of the project is 2845 sq km. The total land requirement for the project is 2440 ha. Out of which 950 ha is forest land, the submergence area is 2320 ha. A surface power house is proposed near toe of the dam with 3 units of 62 MW each. The Scoping/TOR clearance to this project was accorded on 26.2.2013. The 2 year validity period ended on 26.2.2015.

The project proponent informed that as per approved TOR, seasonal data for EIA study have been collected for all three seasons. DPR has been approved by CEA on 11.2.2014 and TEC has been issued on 31.3.2014.

It was informed that as per MOU with Government of Nagaland, land has to be acquired and provided for the project construction. There has been a delay in land survey by Government of Nagaland which has led to delay in identification of project affected families (PAFs) and preparation of R&R plan.The survey work has started in the month of January 2015 and likely to be completed in about 12 months period and thereafter EIA report will be finalized. In view of this, project proponent requested two years extension for scoping clearance to complete the remaining activities, finalize EIA/EMP studies; conducted public hearing and approach MoEF & CC for appraisal.

The EAC noted that the request made by the project proponent appears to reasonable and genuine. Keeping in view, pending works, EAC recommended 2 years extension of validity of TOR for Dikhu HEP i.e. From 26.2.2015 to 26.2.2017.

Agnda Item No.2.8: Etalin (3097 MW) in Dibang Valley District of Arunachal Pradesh by M/s Etalin Hydro Electric Power Company Limited

The EAC noted that initially Scoping/ToR clearance was accorded for this project with an installed capacity of 4000MW on 30.11.2009. Subsequently, due to change in installed capacity, the Scoping/TOR clearance for revised capacity of 3097 MW was accorded on 26.4.2013.

Public Hearing for the project was successfully conducted on 12.12.2014 at Etalin HQ, Dibang Valley District of Arunachal Pradesh.

The propject proponent and their Consultants made a detailed presentation on the project (including EIA / EMP / R&R) together with video films on (a) showing approach to the project area and various components of the project and (b) environmental mitigation measures to be adopted during construction of the project. The project proponent highlighted that (a) distance between FRL of Dri Dam & TWL of planned Agoline HEP (which is yet to be allotted) is approximately 1075 m, (b) distance between FRL of Tangon Dam & TWL of Attunli HEP is approximately 1020 m and (c) distance between TWL of Etalin HEP & FRL of Dibang Multipurpose Project is approximately 3500 m. The allotted projects on Dri limb are Amulin and Mithundon for which ToR has already been accorded by the Ministry.

The EAC deliberated upon the pending Cumulative Impact Assessment (CIA) study for Dibang Basin. It was noted that in accordance with MoEF & CC's circular dated 28.5.2013, the condition for carrying-out Cumulative Impact Study of a basin shall be mandatory after May, 2015. The Cumulative Impact Study has also not been envisaged in the ToR of the project awarded by MoEF & CC in April, 2013. It was also noted that the CIA study has not been awarded so far by the CWC although, the process is at advanced stage.

The Project proponent informed that Forest Diversion proposal of the project was discussed in FAC meeting of MoEF & CC, Govt. of India in January 2015. Proceedings under "The Scheduled Tribes & Other Traditional Forest Dwellers (Recognition of Forest Rights Act), 2006" have been completed & requisite

Certificates submitted by Deputy Commissioner, Dibang Valley District to Dept. of Environment & Forests, Itanagar in February, 2015.

It was informed that concurrence of Seismic Design Parameters from National Committee on Seismic Design Parameters (NCSDP) was obtained in January, 2015. Apart from these, project proponent also obtained other Statutory Clearances as required from Central as well as State Govt, for the implementation of the project.

The HEP project (3097 MW) is proposed in Dibang Valley District of Arunachal Pradesh. The project envisages two independent head-works and water conductor systems (one each on Dri & Tangon Rivers) with a common underground powerhouse complex. Project envisages two dams of 101.50 m & 80 m height on Dri & Tangon Rivers respectively from deepest foundation level. HRT on Dri limb is 10.722 Km long with 11.30 m diameter and HRT on Tangon limb is 13.045 Km long with 9.70 m diameter.

The common underground powerhouse is proposed near the confluence of Dri and Tangon rivers with 6 units of 307 MW capacity each and 4 units of 307 MW capacities each respectively. The Riparian releases are ensured through 2 dam-toe powerhouses, one each in Dri and Tangon limbs with capacity of 19.60 and 7.40 MW respectively. Thus, the total Installed Capacity (IC) of Etalin HEP works out to 3097MW {(6x307) + (4x307) + 19.60 + 7.40}.

It was noted that for the collection of baseline data, sampling has been carried out for various environmental parameters by the consultant as per revised ToR granted in Apr' 2013. The baseline data has been collected through field surveys. Baseline data was explained and discussed in detail and for all the physico-chemical parameters viz. ambient air quality, sound levels, water and soil quality, etc. Environment quality is found to be undisturbed and pristine. Land use map has been prepared based on satellite data show that 85.15% of the study are is dense forest. The forests types recorded from study area were recorded as per Champion and Seth's (1968) classification and forests come under Unclassed State Forest (USF). Ambient Air Quality, Ambient Noise Levels & Traffic Density were found to be well within the limits.

Surveys for terrestrial ecology were undertaken at 8 sampling sites covering both Dri and Tangon limbs. An inventory of plant species in the study area has been prepared for plant groups like angiosperms, gymnosperms, pteridophytes, bryophytes and lichens. The data was quantitatively analyzed for abundance, density and frequency. In all 370 species of angiosperms belonging to 102 families were recorded during the surveys. These include 95 trees, 77 shrubs and 198 herbaceous species. Among the RET species *Lagerstroemia minuticarpa* of Lythraceae has been categorized as Endangered (EN) in IUCN Red list. This species was not recorded during primary quadrat sampling, however, a related species *Lagerstroemia parviflora* was regularly recorded in the quadrats at some of the sampling sites. *Pinus merkusii* has been kept in Vulnerable category, was regularly found in most of the quadrats studied at most of the sampling sites and was found as dominant species at these locations. According to Red Data Book of Botanical Survey of India (BSI), *Livistona jenkinsiana* is under endangered category; *Coptis teeta* and *Cymbidium eberneum* are under vulnerable category.

Faunal diversity was assessed through primary as well as secondary data. During the surveys, only 5 mammalian species belonging to 5 orders were sighted though according to secondary data 26 species are reported from the study area. Similarly 33 species of birds belonging to 22 families were recorded during the surveys. The data on other faunal elements like butterflies and insects was also shown. In all 11 species of reptiles and lizards belonging to 9 families are reported from the study area. In addition, 5 species of amphibians are also reported from the area.

Regarding, the water quality the sampling was conducted at 11 sites in different seasons in Dri and Tangon rivers. It was noticed that dissolved oxygen (DO) of the river lies between 9.1-12.2 mg/l during different sampling seasons at all sampling sites. Overall biological water quality of the two rivers is under excellent condition. The data on Fish diversity of Dri & Tangon Rivers was collected from literature and through experimental fishing. It comprised of 12 fish species belonging to 4 families and trout is found to be the main fish species in the two rivers in the study area.

Nearest wildlife sanctuary i.e. Dibang Wildlife Sanctuary has been reported to be far away from the project site i.e. more than 15 km away from the nearest project component.

Various components of the EMP were discussed along with the budgetary Provisions. Different activities are planned under Biodiversity Conservation & Management plan like NTFP cultivation through Bamboo & Cane plantation, Biotechnology based conservation through medicinal plants cultivation, Habitat improvement through afforestation and nursery development, Wildlife conservation, Wildlife habitat improvement and Anti-poaching measures. Number of Mitigation measures & Eco-Development Activities has also planned. The total budgetary provisions of Rs.1029.50 lakhs have been allocated under EMP.

The Catchment Area Treatment plan has been prepared for Free Draining area. An area of 102.69 km^2 (falling under Severe & Very severe soil erosion categories) out of total free draining catchment area of 500.06 km^2 has been proposed to be treated. The proposed treatment measures were explained in detail. A budget of Rs.42.51 Crores has been allocated for CAT plan.

Under the Fisheries Development plan, an artificial seed production unit, reservoir fisheries and downstream measures are proposed in order to conserve threatened species and to develop sustenance fishery in the project area. A hatchery is proposed to conserve the resident fish species of Dri and Tangon rivers, which would undergo stresses due to proposed project. Dri reservoir of 83.32 ha and Tangon reservoir of 36.12 ha will be developed for organized reservoir fishery. Habitat improvement by maintenance of riffles and pools and construction of check dams is proposed to reduce the impacts and restore the aquatic life in downstream region.

Muck Dumping & Management plan has been prepared for dumping of excavated muck. Total muck to be generated including swell factor will be around 165.65 lakh m^3 out of which 48.30 lakh m^3 will be used for construction material and remaining 117.35 lakh m^3 will be disposed off in 12 identified Muck Dumping sites which are more than > 30 m away (horizontal distance) from the river bank

corresponding to the high flood level (HFL) with angle of repose around 30^0. A simulation video on Muck Dumping, Landscaping & Restoration of quarry area was shown by the project proponent. Project proponent indicated that a total grant of Rs.600 lakhs has been allocated.

Dam Break Modeling and Disaster Management Plan has been presented. The committee desired to know the breakup of Rs.250 lakhs allocated against preparation of Disaster Management Action Plan. The final DMP shall be prepared in consultation with Arunachal Pradesh State Disaster Management Agency.

A total of 284 families comprising 1197 individuals from 18 villages found to be affected by the project. Out of these affected families, 176 are falling under involuntary displacement. Project Proponent indicated that compensation against R&R has been proposed in accordance with Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RFCT-LARR). Apart from the compensations listed in the RFCT-LARR, compensations in accordance with State R&R Policy 2008 have also been accounted in the R&R plan. An additional "Economic Development Package" of Rs 64.31 Crores, which is over and above the R&R plan has been proposed by the project proponent. It was informed that as per CEA guidelines, cost against land acquisition has been included in the project DPR. Project proponent was requested to indicate the land cost in the EIA/EM. However, since this cost has already been included in the total project cost in the DPR, therefore, EAC suggested that this cost should not be considered in the total EMP cost.

It was noted that few issues raised during the Public Hearing of the project are still pending to be resolved. The Committee asked the project proponent to resolve these issues at the earliest in consultation with District Administration.

EAC noted the Public Hearing Issues and Responses as under:

Sl. No.	Issues Raised by PAFs/Public	Clarification given by Project Proponent / Updation
1	Revision of list of PAFs should be undertaken since	• List of PAFs was prepared based on the SIA study undertaken in consultation with the Distt.

	no. of people hailing from project affected area were excluded in original PAFs list.	Administration. Distt. Administration to see the exclusions, if any. • Based on discussions with District Administration the number of project affected families have been revised from 265 to 284; R&R Plan and SIA report updated accordingly.
2	It is required to revise the list of involuntary displaced families so that not even a single family suffer in future.	• Number of involuntary displacement is 156 out of 265 families, which has been arrived at based on the SIA study undertaken in consultation with the Distt Administration. Revision, if any, in respect of involuntary displacement is to be intimated by the Distt Administration. • After discussions with District Administration the number of involuntary displaced families has been revised from 156 to 176; R&R Plan and SIA report updated accordingly.
3	Review of number of Self Employed Local Artisans is necessary to ensure that names of genuine selfemployed local artisans both man and woman should not be deprived of benefits they are entitled under appropriate law.	• This number has been brought out based on the SIA study undertaken in consultation with the Distt Administration. Revision, if any, is to be intimated by district administration. However an amount of Rs. 25,000/- has been kept in accordance with the SRRP 2008. • Based on discussions with the Distt. Admin., the number of self- employed local artisans has been revised from 9 Nos. to 42 Nos; R&R plan updated accordingly.
4	Entire PAFs of Akobe village should be included under involuntary displaced family.	• This point shall be discussed with district administration and the decision given by the State Govt. shall be followed. • Issue is under discussion with Dist. Admin; decision given by State Govt. shall be followed.
5	Insert provision for allocation of 2 hectares of agricultural land and 2 hectares of horticultural land and 10 hectares of grazing land for domestic animal like Mithun in and around the resettlement area.	• A context specific provision for infrastructure facility and amenities at resettlement sites has been listed in EMP. The decision given by the State Govt. shall be followed. • Issue discussed with Distt. Admn & PAPF. Agreed that this demand is not tenable as per SRRP – 2008.
6	Additional economic package for partially affected villages, viz., Etalin HQ, Aguli, , Athunli, Ayeso similar to additional economic package	• This point shall be discussed with district administration and the decision given by the State Govt. shall be followed. • Issue is under discussion with the Distt. Admin. Decision given by the State Govt. shall be

	declared for Aruli village amounting to Rs. 95,00,000/-	followed.

As stipulated in the ToR granted in Nov' 2009, a study on minimum environmental flow requirement during lean season was to be carried out. Accordingly, based on project hydrology & CIFRI's recommendation for releasing 20% of the minimum environmental flow during lean season, DPR of the project was concurred by CEA in July' 2013 for an Installed Capacity (IC) of 3097 MW (as against allotted capacity of 4000 MW) and this change in the IC is due to the change in the water availability finalized during hydrological studies concurred by CWC. Subsequently, fresh ToR was accorded in April 2013 for IC of 3097 MW. In order to utilize the releases of flow for sustenance of aquatic life, a dam-toe powerhouse with 19.60 MW capacity on Dri diversion and dam-toe powerhouse of 7.40 MW capacity on Tangon diversion have been proposed as stipulated in the ToR accorded by MoEF & CC, GoI in April 2013. Also, in accordance with fresh ToR, a study on minimum environmental flow requirement for lean, non-lean & non-monsoon and monsoon seasons were to be carried out. These studies were carried out by CIFRI, Barrackpore. CIFRI made a detailed presentation on the studies carried out by them.

Based on the field investigation *vis-a-vis* analyses of the samples and use of modern methodologies for estimation of environmental flow for sustaining the aquatic life especially migration of fishes in Dri as well as Tangon rivers, the following *recommendations were made for two limbs to sustain migration and breeding of the trouts and other indigenous fish species;*

<u>For Dri Limb</u>

(a) Release of 30 cumec (19.6%) from the powerhouse during the lean season (December to March).

(b) During the monsoon season (June-September) the flow regime exhibits high flows up to 1400 cumec with several daily spikes which ensure not only base flow but also high pulses occurring in the monsoon. In monsoon (June to

September), even 41.08 cumec (10%) will meet the habitat requirement in terms of depth. This gives an average depth of 1.3 m. However, to provide adequate river width during monsoon, a higher flow of 50 cumec (12.2%) is recommended.

(c) During the non-monsoon – non-lean period (April-May & October-November), a discharge of 35 cumec (15.2%) is recommended to be released.

For Tangon Limb

(a) Release of flow at 20 cumec (20.5%) from the powerhouse during the lean season (December-March)

(b) During the monsoon season (June-September), the flow regime exhibits high flows up to 800 cumec with several daily spikes which ensure not only base flow but also high flood pulses in monsoon, 38 cumec discharge would meet the habitat requirement in terms of depth and velocity. This gives an average depth of 1.08 m as against the minimum requirement of 1 m. As such, a discharge of 38 cumec (14.5%) is recommended.

(c) During non-monsoon–non-lean period (April-May and October-November), discharge of 27 cumec (18.4%) is recommended to be released.

After detailed deliberations, Committee agreed with the study carried out by CIFRI on release of minimum environmental flows & its recommendations.

It was also indicated by the project proponent that in view of the higher e-flow releases as recommended by CIFRI and higher flows are available for release as IC of dam-toe turbines were based upon the flow releases based upon recommendations made in first TOR. Therefore higher e-flow releases may lead to increase in IC of the two dam toe powerhouses. The Committee pointed out that since DPR was concurred before the CIFRI recommendations, the developer can utilize the recommended flow through dam toe power houses. Necessary clearance on the enhancement of capacity of dam toe powerhouse of both the limbs shall be obtained from the concerned Authority (CEA).

The issue of providing Longitudinal Connectivity was deliberated in detail. The provision of open channel was studied for the passage of free and uninterrupted flow

to meet the objective of longitudinal connectivity. For Dri as well as Tangon limb, the concrete lined channel beyond dam body would meet the original river course. The average slope of this portion of the channel from dam to river bed would be appx. 1:7.5 in DRI limb and appx. 1:11.5 in Tangon limb. With this slope, the exit velocity of the flow would be 39m/s in DRI limb and 32m/s in Tangon Limb which is extremely high and not permissible / sustainable in a free flowing concrete lined channel. In addition considerable stretch of river i.e. about 600m would become dry on the downstream side. Therefore it was found that the provision of Longitudinal Connectivity was not feasible in the present context.

The project proponent was handed over the representations from SANDRP and was asked to submit response to the various clarifications sought in the said representation. Based on presentation, discussions & deliberations, EAC sought following clarification / additional information:

i. To submit the breakup of Rs.250 lakhs allocated against preparation of Disaster Management Action Plan.
ii. The cost of land against land acquisition of the project as included in the DPR should be reflected in the EMP & submitted.
iii. Project proponent in consultation with District Administration should resolve the pending issues raised during Public Hearing of the project & inform to this ministry.
iv. Project proponent must follow the recommendations of CIFRI on minimum environmental flow & also obtain approval of CEA for any increase in IC from the two dam toe powerhouses.
v. The project proponent must submit response to the various issues raised by SANDRP in their representation submitted to this Ministry.

Additional Agenda Item.

Arpa-Bhaisajhar Barrage Project in Bilaspur District of Chhattisgarh by Water Resources Department, Government of Chhattishgarh - for consideration of Environmental Clearance (EC)

The project proponent and consultant (WAPCOS) made a detailed presentation on the project. The committee noted that the project is proposed to be located on the Arpa River as it enters the Chhattisgarh plains. The river flows south from the Satpura hill range and drains into Seonath River which is a tributary of river Mahanadi.

The Scoping /TOR clearance for this project was accorded on 27.2.2013

The proposed project envisages construction of a 147 m long and 12.35 m high barrage near the village Bhaisajhar across river Arpa along with guide bund 880 m long on right side and 330 m long on left side. The length of main canal and Branch canal is 56.6 Km and 27.00 Km respectively. The length of distributaries and minors is 303.30 Km. The catchment area intercepted up-to the barrage site is 1693.86 Sq.km. The annual irrigation proposed is 25,000 ha of kharif (paddy). The total cost of the project is estimated as Rs. 606.43 crores with a Benefit Cost ratio considering 10% interest on capital outlay 1:2.81.

The Public Hearing for the project was conducted on 13.2.2015 at Village Bhaisajghar, Tehsil Kota in District Bilaspur of Chhattisgarh.

The Full Tank Level (FTL) of barrage is 302 m whereas the afflux bund level will be 305 m. The crest level of barrage is at RL 292.20 m. The submergence area at FTL will be 653.59 ha. The barrage structure will be about 12.35 m height. The deepest foundation level will be 8 m below the river bed level. The gross storage capacity at RL 302 m of barrage is 22.168 Mm^3 with live storage capacity 16.409 Mm^3. The length of the reservoir is about 13 km. The irrigation potential of the proposed project is 25,000 ha which is envisaged only for kharif paddy cultivation. The GCA and CCA of the project are 31570.95 ha and 25970.71 ha. The Irrigable Command Area (ICA) is 25000 ha. The entire irrigation will be done in Kharif season and the crop grown shall be paddy.

The committee noted that as per CWC, 75% dependable net annual yield is 266.38 MCM, which includes upstream committed utilization 75 MCM and downstream committed utilization is 24 MCM. Total utilization has been worked out 99 MCM. Water available for project utilization is 167.38 MCM. The available 75%

dependable net annual yield (237 MCM) at project location is sufficient to meet the irrigation water requirement in the command. The 100 year return flood comes out of about 4288 m^3/s.

The total land required for various project components is of about 1890.09 ha., out of which 377.35 ha of revenue/government land, 1070.39 ha of private land and 442.35 ha of forest land. The details of land requirement for the project are given below:

Component	Forest (ha)	Govt. /Revenue land (ha)	Private (ha)	Area (ha)
Head Work	442.35	154.78	56.46	653.59
Canal network	--	222.57	1013.93	1236.50
Total	**442.35**	**377.35**	**1070.39**	**1890.09**

As a part of field studies, ecological survey was conducted at three locations in the submergence area, which is spread over an area of 653.59 ha. The forest area to be acquired is about 442.35 ha. FC Stage-I was accorded vide letter No.8-29/2013-FC dated 12.12.2014 for diversion of 442.35 ha of forest land.

Three (3) villages are likely to be affected due to this proposed project i.e. Umarmara, Bhaisajhar and Amali on account of land requirement for head works. The details are given as below:

Name of village	Area under submergence (ha)
Umarmara	37.242
Bhaisajhar	6.043
Amli	13.165
Total	**56.45**

It was observed that as per the findings of the ecological survey, *Tectona grandis, Butea monosperma, Madhuca indica, Terminalia arjuna, Shorea robusta* and *Buchnania lanzan* were the dominant tree species. Amongst shrubs, *Woodfordia fruticosa, Lantana camara, Ipomoea carnea, Tamarix ericoides, Jatropha curcas* and

Randia dumetorum were the dominant species. The dominant herbaceous species in the submergence area were *Parthenium histerophorus, Cassia tora, Hyptis suaveolens, Imperata cylindrical, Cymbopogon martini,Tridax procumbens* and *Vetiveria zizanoides.* No Rare/Endangered/Threatened (RET) species are reported in the project area. The tree density at various sampling sites in the forest area to be acquired ranged from 308 to 468 trees/ha. The number of tree species observed at various sites ranged from 77 to 117.

The introduction of irrigation in the area will increase the agriculture production of the area leading to the increased availability of fodder as a result of increased agricultural by products and residues. The increased level of fodder availability would reduce the presence on existing pasture and vegetal cover, which is a significant positive impact. The area to be brought under irrigation within the command area shall be devoid of forests.

The mammal species are reported in the study area are mostly belong to Schedule-III, IV and V as per wildlife protection act, 1972. As per IUCN status, they are under least concern category. Amongst avi-fauna, Accipitridae, Ardeidae and Sturnidae were the largest orders and with each 6 species belonging to these orders were reported in the project area. Five (5) species belonging to order Phasianidae were reported in the study area. The other orders of avi-fauna reported in the area include Columbidae, Cisticolidae, Cuculidae, Laniidae, Muscicapidae, Phasianidae, etc. Most of the species reported in the area belonged to Schedule-III and Schedule-IV of Wildlife Protection Act (1972). The commonly observed herpetofauna in the study area includes Ground Geckoo, Moniter Lizard, Rat Snake, Common skink, Cobra, Water Snake, Common toad etc. As per IUCN status, they belong to least concern or Data Deficient category.

As a part of EIA study, Silt Yield Index (SYI) method has been used and area under various erosion categories has been estimated. The area under high erosion category was 97513 ha accounting for about 57.56% of the total catchment. The area under medium and low erosion categories is 33520 ha (19.79%) and 38367 ha (22.65%) respectively.

As a part of Catchment Area Treatment various biological measures have been recommended. An amount of Rs. 1295.7 lakh has been earmarked for this purpose. The biological treatment measures have been recommended as below:

- Gap Plantation
- Afforestation
- Nursery development
- Maintenance of nursery
- Barbed wire fencing

An grant of Rs. 172 lakhs has been earmarked implementation of Engineering Measures as a part of CAT Plan. The engineering treatment measures have been recommended as below:

- Contour Bunding
- Check Dams
- Nallah Bunding

In addition following measures too have been recommended:

- Two silt observation locations for regular monitoring of silt load coming in tributaries of sub-watersheds falling under high erosion category
- Research Training and Capacity Building of forest staff as well as local community through State Forest Training Institutes and reputed non-governmental organizations.
- Fire protection measures
- Distribution of Non-conventional Energy and Fuel Saving Devices in catchment area on a cost-sharing basis, such as, LPG, Tandoors, Pressure cookers and Solar devices
- Monitoring and Evaluation of CAT plan

The committee noted that the river has very little flow during the period from October t June i.e. non-monsoon/non-lean seasons and lean season. Therefore, it is recommended that release of 30% discharge during monsoon season as environmental flow. It has been agreed that a gate is always be opened in the barrage for free movement of sedimentation and aquatic movement in the river.

The compensation for acquisition of private land would be paid to the respective land owners/ land titleholders within the provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. No homesteads are being acquired, thus, no resettlement is required and only rehabilitation plan is being suggested.

The Compensation for acquisition land in submergence area is given as below:

S. No	Description	Cost(Rs. lakh)
1	Market value of land in village Amali	222.826
2.	Market value of land in village Umarmara	570.548
3.	Market value of land in village Bhaisajhar	105.518
	Total	**898.892**

The total budget earmarked for implementation of Rehabilitation Plan shall be Rs.307.48 Crore. The details are given as below:

S. No	Description	Unit	Assumed Provision	Cost (Rs. lakhs)
1	Total Market Value of Project Affected Villages	ha		30466.662
2	**Rural artisans / Self-employed**			
	One-time financial assistance of a minimum of Rs. 25,000/- to each affected family of an artisan, small trader or self-employed person or an affected family which owned non-agricultural land or commercial, industrial or institutional structure in the affected area, and which has been involuntarily displaced from the affected area due to land acquisition	85	85PAFs x Rs.25000/ PAF	21.25
3	**Choice of Annuity or Employment**			
	d) At least one member per affected family will be provided job (either in			Livelihood plan been

S. No	Description	Unit	Assumed Provision	Cost (Rs. lakhs)
	the project or arrange for a job in such other project), after providing suitable training and skill development in the required field Or **e)** Onetime payment of Rs. 500,000 per affected family Or **f)** Annuity policies that shall pay not less than Rs. 2000 per month per family for 20 years, with appropriate indexation to the Consumer Price Index for Agricultural Labourers			prepared for each PAF losing land.
4	Affected persons shall be offered the necessary training facilities for development of entrepreneurship, technical and professional skills for self-employment	85	85 PAFs x Rs.1000/month x 6 months for each PAF	5.100
Total				**30747.362**

Additionally, an grant of Rs.2.09 Crores has been earmarked for implementation of plan for income generating activities, which is in addition to the cost earmarked for implementation of Resettlement and Rehabilitation Plan. The details are given as below:

S.No.	Activity	No.	Unit Cost (Rs.)	Budget (Rs. lakhs)
1	Purchase of cows / buffaloes	85 PAFs	160,000/PAF	136.00
2	Grant to each PAF for construction of livestock	85 PAFs	25,000/PAF	21.25
3	Training of youth in artificial insemination	20 PAFs	50,000/PAF	10.00
4	Grant for establishment of Natural Breeding centre	Lumpsum		10.00
5	Demonstration for use of fodder, use of mineral mixture	20 demonstrations	Rs. 50,000/ demonstration	10.00

S.No.	Activity	No.	Unit Cost (Rs.)	Budget (Rs. lakhs)
	in daily diet of milch animals			
6	Training of member from each PAF			21.05
	Total			**208.30 lakhs (or) 2.09 Crores**

An amount of Rs. 303 lakhs has been made for implementation of the LADP Activities. The details are given as below:

S. No.	Items	Budget (Rs. lakh)
1	Construction/Up-gradation schools in Study Area	155.00
2	Scholarships to students in the Study Area	91.80
3	Improvement of Public Health Facility	54.00
4.	Construction of Cremation Ground	2.00
	Total	**302.8 Say 303 lakhs**

The total amount to be spent for implementation of Environmental Management Plan (EMP) is Rs. 394.72 Crores. The details are given as below:

S. No.	Item	Cost (Rs. Crores)
1.	Compensatory Afforestation and Bio-diversity conservation	44.36
2.	Fisheries Management	3.94
3.	Environmental Management in labour camps	5.52
4.	Public health delivery system	1.61
5.	Restoration and Landscaping of construction sites	1.61
6.	Greenbelt development	0.18
7.	Energy Conservation measures	0.20
8.	Catchment Area Treatment Plan	21.33
9.	Environmental Monitoring during construction phase	0.75
10.	Purchase of noise meter	0.015
11.	Purchase of meteorological instruments	0.07
12.	Water Quality Testing Kits	0.085

13.	Resettlement and Rehabilitation Plan	307.48
14.	Livelihood Plan for PAFs losing land under reservoir submergenc	2.09
15.	Local Area Development Plan	3.03
16.	Monitoring and Evaluation Aspects	0.45
17.	Disaster Management Plan	2.00
	Total	**394.72**

The peak labour and technical staff congregation would be of the order of 800 and 100 respectively. The total population immigrating in the area during construction phase shall be 2200. Separate accommodation and related facilities for workers, service providers and technical staff will be provided as a part of the project.

After detailed deliberations, the committee recommended the project for environmental clearance subject to all the commitments made during the public hearing shall be fulfilled completely by the project proponent.

The meeting ended with a vote of thanks to the chair.

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List of EAC members and Project Proponents who attended 82nd Meeting of Expert Appraisal Committee for River Valley & Hydro Electric Power Projects held on 26th – 27th February, 2015 in New Delhi

A. Members of EAC

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

B. Badaun Lift Canal in the State of Uttar Pradesh – For consideration of ToR.

1.	Shri Ajay Kumar Singh	-	Chief Engineer
2.	Shri D. K. Jain	-	Executive Engineer
3.	Dr. Harcharan Singh	-	Consultant

C. Doimukh HEP Papumare District of Arunachal Pradesh by M/s. SJVN Ltd. –For consideration of ToR.

1.	Shri L. M. Verma	-	Additional General Manager
2.	Shri O. P. Gupta	-	Additional General Manager
3.	Shri S. P. Bansal	-	ACM
4.	Shri Rajesh Kumar Jagota	-	Divisional General Manager
5.	Shri R. K. Jindal	-	Sr. Engineer
6.	Shri Bhim Singh	-	Deputy Manager
7.	Shri Milind Sangtiani	-	Sr. Engineer
8.	Shri Shiraz Swan	-	Sr. Engineer

D. Purthi HEP (300 MW) project in Lahual & Spiti and Chamba District of Himachal Pradesh by M/s. Purthi Hydro Power Pvt. Ltd. – For consideration of ToR.

1.	Shri Naveen Alagh	-	Sr. Exe. Vice President
2.	Shri Ashok Kumar	-	Vice President
3.	Shri Deepak Gopalani	-	Vice President
4.	Shri Manoj Pradhan	-	Additional Vice President
5.	Shri Binaya Mishra	-	General Manager
6.	Shri S. M. Dixit	-	Manager
7.	Shri S. P. Gupta	-	Chief engineer

8.	Shri Subhash Gupta	-	Chief consultant
9.	Shri Anshul Sharma	-	Sr. Executive Engineer

F. Lower Penganga Interstate Project between the State of Maharashtra and Telangana on Penganga river, tributary of Godavari near Tadsoli (V), Ghatanji (tq.), Yavatmal District, Maharashtra State- For consideration of Environment Clearance.

1.	Shri R. Masudhana rao	-	Chief Engineer
2.	Shri D. s. Mathur	-	Co-ordinator
3.	Shri C. H. Tulsiram	-	Dy. Exe. Engineer
4.	Shri K. Kareemulla Basha	-	Functional area Expert
5.	Shri M. V. V. Saradhi	-	AVP

G. Formulation of Flood Carrier Canal from Kannadian Channel to drought prone areas of Sathankulam, Thisayanvilai by Interlinking Tamiraparani, Karumeniyar and Nambiyar Rivers in Tirunelveli and Thoothukudi District for consideration of Environment Clearance.

1.	Shri S. P. Pandian	-	Chief Engineer
2.	Shri A. Malaichamy	-	Superintending Engineer
3.	Shri R. Ramachandran	-	Executive Engineer
4.	Shri Sanjay Anbarasv	-	Executive Engineer
5.	Shri Slouis Arul	-	Assistant Engineer
6.	Shri A. S. Raja	-	AEE
7.	Shri A. Stephen Leo	-	Regional Manager
8.	Dr. Aman Sharma	-	General Manager
9.	Shri S. M. Dixit	-	DCE
10.	Ms. Madhumita Ghosh	-	DCE
11.	Dr. Harcharan Singh	-	SLE

H. Tagurshit HEP (74 MW) in West Siang District , Arunachal Pradesh by M/s. L&T Arunachal Hydro Power Ltd. – for Extension of ToR.

The project proponent withdrew the application and did not attend the meeting

I. Dikhu HEP (186 MW) project in Longleng District of Nagaland- For consideration of Extension of ToR

1.	Shri K. Sriniwasa Rao	-	CEO
2.	Shri Rakesh Mathur	-	General Manager

J. Etalin (3097MW) in Dibang Valley District of Arunachal Pradesh by M/s. Jindal Power Ltd. – For consideration of Environment Clearance.

1.	Shri M. M. Madan	-	President
2.	Shri Arun Gaur	-	Environmental Vice President
3.	Shri Vimal Garg	-	Director
4.	Shri A. K. Sahoo	-	Scientist
5.	Shri Dheeraj Marwaha	-	DGM
6.	Shri Mogesh Sindhu	-	Assistant Manager
7.	Dr. J. K. Soni	-	EVP
8.	Shri Sunil Kumar	-	Manager
9.	Shri Anil Dhar	-	AVP
10.	Shri Gajendra Sharma	-	Deputy Manager
11.	Shri Vinod Batta	-	Consultant
12.	Shri Rajiv Sawaran	-	Consultant
13.	Shri Abhijeet Paul	-	Consultant
14.	Dr. Arun Bhaskar	-	Director

K. Arpa-Bhaisajhar Barrage Project in Bilaspur District of Chhattisgarh by Water Resources Department, Government of Chhattishgarh - for consideration of Environmental Clearance (EC)

1 .	Shri C. Xaxa	-	Chief Engineer
2.	Shri V. K. Shrivastava	-	Superintending Engineer
3.	Shri R. S. Naidu	-	Executive Engineer
4.	Shri A. K. Shukla	-	SDO
5.	Shri D. S. Kshatri	-	SDO
6.	Shri R. K. Rajput	-	Sub. Engineer
7.	Shri A. Stephen Leo	-	Chief Engineer
8.	Dr. Aman Sharma	-	General Manager
9.	Shri S. M. Dixit	-	DCE
10.	Dr. Harcharan Singh Rumana	-	SLE
11.	Ms. Momita M. Ghosh	-	Dy. Chief Engineer

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