

**Minutes of the 79<sup>th</sup> Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects constituted under the provisions of EIA Notification 2006, held on 13<sup>th</sup>-14<sup>th</sup> November, 2014 at Narmada Meeting Hall, Ground Floor, Vayu Wing, , Indira Paryavaran Bhawan, Jor Bagh, Aliganj, New Delhi110003**

The 79<sup>th</sup> Meeting of the Expert Appraisal Committee (EAC) for River Valley and Hydropower Projects was held during 13<sup>th</sup>-14<sup>th</sup> November, 2014 at Narmada Meeting Hall, Ground Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh, Aliganj, New Delhi110003. The meeting was chaired by Shri Alok Perti, Chairman. Shri H. S. Kingra, Vice-Chairman, Shri K. D. Joshi 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:-

**1<sup>st</sup> Day (13.11.2014)**

1. **Agenda Item No.1** : Welcome by Chairman and Confirmation of Minutes of the 78<sup>th</sup> EAC Meeting held on 16<sup>th</sup> -17<sup>th</sup> October, 2014. The Minutes of 78<sup>th</sup> EAC meeting was confirmed as was circulated. Thereafter, following agenda items were taken up:

**Agenda Item No. 2.1 Kalai Power Pvt. LTD. For consideration of Environment Clearance (EC) for Kalai-II HEP.**

The Kalai-II H.E. Project envisages Run of the River with pondage scheme on the Lohit river, a left bank tributary of Brahmaputra river with a view to utilize flows of Lohit river over large head available for hydro power generation. The Lohit river, a tributary of Brahmaputra River, rises at an EL 6190 m above MSL from the snow clad peaks in Eastern Tibet and enters India through Kibithoo area of the district.

The Kalai-II HE Project envisages utilization of a gross head of about 125m for power generation with an installed capacity of 1200MW. The coordinates of Kalai-II HE Project are Latitude 27° 54' 20" N and Longitude 96° 48' 16" E. The catchment area up to the proposed dam site including Tibet region is estimated to be about 15,654 sq. km. The full reservoir level (FRL) is at EL 904.80m. The project involves construction of a concrete gravity dam,

upstream & downstream coffer dam, diversion tunnel, intake tunnel, pressure Shafts, underground Powerhouse complex, surge chamber and Tail Race Tunnel etc. The construction period for the project shall be 87 months.

The total optimized land requirement for the project including underground structures is 1100 ha. The details of land required for various project appurtenances is given in Table-1.

**Table-1: Land requirement for Kalai-II hydroelectric project**

<b>S. No.</b>	<b>Description</b>	<b>Area (ha)</b>
1	Reservoir Area	640
2	Project Components Area	160
3	Muck Disposal & Quarry Area	90
4	Project Roads & Infrastructure	80
5	Road realignment	30
6	Infrastructure -Fabrication Yard, Steel Plates Stock Yard, Fabricated, Ferrules Stock Yard, Electrical Warehouse, stores, HM stock Area	25
7	Crushing Plant, Batching Plant, Aggregate stock pile area, Cement Storage & facilities	10
8	Contractor Camp & Owner Township	30
9	Infrastructure, etc.	20
10	Surface Area for underground works	15
	<b>Total</b>	<b>1100</b>

The entire land to be acquired for the project is considered as forest land. On certain portions of land, community/private settlements are private/community properties. For such categories of land, compensation on account of forest land acquisition will be paid.

The estimated quantities of principal construction materials for Kalai II HE Project are given in Table-2. The availability of construction materials is given in Table-3.

**Table-2:Quantity of construction material required for Kalai-II HE Project**

<b>Item</b>	<b>Estimated Quantities (lakh m<sup>3</sup>)</b>
Coarse aggregate	32.0
Fine aggregate	14.0
Rock fill aggregate	2.0
Impervious soil material	0.5
<b>Total</b>	<b>48.5</b>

**Table -3: Availability of Construction Materials**

<b>S. No.</b>	<b>Location</b>	<b>Quantity (Lac cum)</b>
1.	Steep rocky area on right bank of Lohit at 1 km u/s of Chingwanty (RQ-1)	25
2.	Steep rocky area right bank of Lohit at 5km u/s of Chingwanty (RQ-2)	3
3.	Steep rocky area right bank of Lohit at 7.8km u/s of Chingwanty (RQ-3)	30
4.	Near Power House 6km d/s of Chingwanty on right bank of Lohit (RBM-1)	3.3
5.	Near Chingwanty on left bank of Lohit (RBM-2)	2.5
6.	10 km u/s of Chingwanty near Samdul village on right bank of Lohit (RBM -3)	3.3
7.	From the open as well as underground excavation	5.5

The Lohit Basin is the eastern most river basins of India forming part of Brahmaputra basin, with its catchment spreading across international border covering part of Tibet. River Lohit is a tributary of river Brahmaputra and originates at an EL 6190 m above mean sea level from the snow clad peaks in Eastern Tibet and enters India through Kibithoo area of the district. River Lohit in the upper reaches is known' as Krawnaon and after flowing westwards, joins tributary called Chalum Susning flowing from Indo-Burma Border. The combined flow is known as Tellu or Lohit river. River Lohit enters the state of Arunachal Pradesh after traversing through Tibet, and generally flows through Mishmi hills. Rivers Dau, Dalai and Tidding are its major tributaries on the right bank and river Lang is the major tributary on the left bank. After flowing from the gorges of Mishmi hills into the plains near Brahamkund, it flows in a westerly direction.

Rivers Noa-Dihing, Kamlang, Tabang and Tengapani meet river Lohit on the left bank and Digaru, Balijan and Kundli join on the right bank. River Lohit is then joined by river Dibang, another important tributary of river Brahmaputra on its right bank and combined flow confluences with river Dihang near Kobo. The catchment area experiences mostly tropical wet season and supports dense mixed forest. The area is characterized by hills with steep gorges and deep rugged valleys of dentritic pattern with streams feeding the tributaries of the Lohitriver system of which Tidding is the major one. Lohit River from origin to the proposed dam site is 265 km while the intercepted area is 15,654 sq km. River Lohit is perennial in nature, with its main source being snow melts of Himalayan glaciers and other small streams. The flow series of Kalai-II has been approved by Central Water Commission (CWC) and the 10 daily flow series for the 90 % dependable year 2002-03 is given in Table-4.

**Table-4: 90% Dependable Year Discharge**

<b>Month</b>		<b>(Discharge in cumec)</b>
June	I	710
	II	798
	III	784
July	I	841
	II	1124
	III	1189
August	I	861
	II	863
	III	619
September	I	539
	II	506
	III	975
October	I	758
	II	487
	III	457
November	I	358
	II	353
	III	307
December	I	294
	II	283
	III	270
January	I	258
	II	239

Month		(Discharge in cumec)
	III	251
February	I	255
	II	257
	III	258
March	I	251
	II	285
	III	276
April	I	322
	II	337
	III	347
May	I	550
	II	766
	III	786

The total quantity of muck expected to be generated has been estimated to be of the order of 111.54 lac m<sup>3</sup>. Considering, 20% swelling factor in common rock and 60% swelling factor in rock excavation, the total muck to be generated is 164.04 lac m<sup>3</sup>. About 15% material from common excavation and 10% material from rock excavation shall be used as construction material. Thus, 145.47 lac m<sup>3</sup> of muck is planned to be disposed at the identified disposal areas. The muck as outlined in Table-9.17, will be disposed at 5 muck disposal sites. The holding capacity of disposal areas is estimated as 146 lac m<sup>3</sup>.

The soils are in neutral range. The EC levels are low. The EC levels indicate that the salt content in the soils is low. The level of various nutrients and organic matter indicates low to moderate soil productivity.

The pH level in various water samples monitored the project area of Kalai-II hydroelectric project ranged from 7.2 to 7.7. The TDS level is well below the permissible limit of 500 mg/l specified for drinking water. The concentration of various heavy metals was found to be well below the permissible limits. Concentration of phenolic compounds and oil & grease as expected in a hilly terrain with no major sources of water pollution from domestic or industrial sources was observed to be quite low. The BOD and total coliform values are well within the permissible limits, which indicate the absence of organic pollution loading. The DO level ranged from 9.6 to 9.8 mg/l at various sampling locations monitored for three seasons as a part of the study. The DO levels were close to

saturation limits in water, indicating the excellent quality of water in the study area.

As a part of field studies, ecological survey was conducted at various locations. The dominant tree species area *Ficus semicordata*, *Alnus nepalensis*, *Callicarpa arborea*, *Grewia paniculata* were the dominant tree species. Amongst shrubs, *Artemisia nilagirica*, *Clerodendrum collebokianum*, *Leeamacrophylla*, *Clerodendrum coolebokianum* were the dominant species. The dominant herbaceous species in the submergence area were *Spilanthes paniculata*, *Galinsoga paniculata*, *Ageratum conyzoides*, *Centella asiatica*. No Rare, Endangered or Threatened species are reported in the land to be acquired for the project.

The tree density in the submergence, dam and power house sites ranged from 308 to 560 per ha. The number of tree species observed at various sites ranged from 13 to 14. Normally in a dense forest, tree density is of the order of 1000-1200 trees/ha. Thus, in forest land to be acquired for the project, the tree density is low to moderate.

During the study in various seasons in Kalai-II HE project area, following IUCN Red List of threatened plant, *Lagerstroemia minuticarpa* falls under endangered category. Rest of the species are common in Arunachal Pradesh. However, this species though observed in the study area but not found in the land to be acquired for the project.

Amongst mammals, species belonging to *Cercopithecidae*, *Felidae*, *Viverridae*, *Bovidae*, *Cervidae*, *Muridae*, *Sciuridae*, *Vespertilionidae* were observed. Amongst birds, species belonging to families *Phasianidae*, *Picidae*, *Megalaaimidae*, *Columbidae*, *Cuculidae*, *Passeridae*, were observed. A total of 7 species of amphibians were reported from the study area. The amphibians comprise of toads and frogs. *Rana* spp. and *Bufomelanostictus* are very common in the study area. Reptilian fauna comprises of 15 species belonging to 6 families. Forest skink, Khasi lizard, house lizard, common krait, Indian monitor, pit viper are the commonly observed reptilian species within the study area. 19 species belonging to various families are reported. None of the species recorded from the project areas is 'globally threatened' (IUCN, 2008). These species are either listed under Schedule-IV or are not listed in any category as per Wildlife Protection Act (1972).

A total of 6 fish species were observed in the study area. These are Schizothorax richardsonii, Tor putitora, T. tor, Acrossocheilus hexagonolepis, Glyptothorax pectinopterus and Botia spp.

During the presentation, the impacts and mitigation measures were discussed in detail. The project authorities shall compulsorily ask the contractor to make semi-permanent structures for their workers. These structures could be tin sheds. These sheds shall have internal compartments allotted to each worker family. The sheds will have electricity and ventilation system, water supply and community latrines. The water for meeting domestic requirements shall be collected from the rivers or streams flowing upstream of the labour camps. The water quality in general is good and will be used after chlorination.

One community latrine shall be provided per 20 persons. The sewage from the community latrines can be treated in sewage .

For solid waste collection, suitable number of masonry storage vats, each of 2 m<sup>3</sup> capacity should be constructed at appropriate locations in various labour camps. These vats shall be emptied at regular intervals and should be disposed at identified landfill sites. Suitable solid waste collection and disposal arrangement has been suggested. Thy solid waste shall be disposed by land filling at the designated sites.

Project proponents in association with the state government shall make necessary arrangements for distribution of LPG. These fuel would be supplied at subsidized rates to the local/contract labourers.

The approach roads will have to be constructed as a part of the proposed project. Steeply sloping banks are liable to landslides, which shall largely be controlled by provision of suitable drainage. Landslides are proposed to be stabilized by several methods i.e. engineering or bio-engineering measures. Engineering solutions such as surface drainage, sub-surface drainage, toe protection and rock bolting have also been proposed.

Dumping shall be done after creating terraces and suitable retaining walls shall be constructed to develop terraces so as to support the muck on vertical slope and for optimum space utilization. The muck disposal sites should be

reclaimed with vegetation. The muck disposal sites are located at a distance of 49 m to 83 m from HFL.

Greenbelt shall be developed around the perimeter of various project appurtenances, selected stretches along reservoir periphery, etc.

There is no medical facility in the immediate vicinity of the project area. It is recommended that necessary medical facilities be developed at the project site. A dispensary shall be developed during project construction phase itself, so that it can serve the labour population migrating in the area as well as the local population. A first-aid post shall be provided at each of the major construction sites, so that workers are immediately attended to in case of an injury or accident. The first-aid post will have at least the following facilities :

- First aid box with essential medicines including ORS packets
- First aid appliances-splints and dressing materials
- Stretcher, wheel chair, etc.

The total land required for the project is 1100ha. The entire land to be acquired for the project is considered as forest land. The afforestation work is to be done by the Forest Department. In addition, following measures are also recommended:

- Afforestation
- Soil stabilization measures & improving water regime,
- Promote use of non-conventional energy so as to reduce pressure on natural resources,
- Sustenance of Livelihoods
- Establishment of botanical gardens for conservation and propagation of RET species.
- Forest & Wildlife protection –Control of grazing & implementation of anti poaching measures etc.
- Peoples participation in the biodiversity conservation programmes
- Community development initiatives
- Training & Publicity Programmes

Various crushers shall be provided with cyclones to control the dust generated while primary crushing the stone aggregates. It shall be mandatory for the contractor involved in crushing activities to install cyclone in the crusher.



The effluent generated from crushers will have high suspended solids. Settling tanks will be provided for treatment of effluent from various crushers.

During tunneling work, the ground water flows into the tunnel along with construction water which is used for various works like drilling, shotcreting etc. The effluent thus generated in the tunnel contains high suspended solids. A settling tank to settle the suspended impurities.

Based on the approved 10 daily flow series for the 90% dependable year, Environmental Flows for Kalai-II HEP are given in Table-5.

**Table-5: Environmental Flows for Kalai-II HEP**

<b>Season</b>	<b>Av. Seasonal Inflow (cumec)</b>	<b>Environmental Flows (cumec)</b>
May to September	794	238 (30%)
October	567	142 (25%)
November – March	278	56 (20%)
April	335	84 (25%)

The Kalai-II HEP power station is proposed to comprise of 6 units of 190 MW each and 1 unit of 60 MW. One unit each of 60MW and 190MW i.e. 250 MW is envisaged to utilize the mandatory environmental releases. The plant shall be run so as to meet the requirement of the environmental flows into the river just downstream of the dam.

It is proposed to stock the reservoir and river Lohit for a length of 16 km upstream and 2 km on the downstream of the dam. The rate of stocking is proposed as 100 fingerlings of about 30 mm size per km. For reservoir area, stocking shall be 1000 fingerlings/ha of 30 mm size. The migratory fish species namely, mahaseer and snow trout can be stocked. The stocking shall be done annually by the Fisheries Department, State Government of Arunachal Pradesh.

Workers operating in high noise shall be provided with effective personal protective measures such as ear muffs or ear plugs to be worn during periods of exposure. The other measures to control noise shall be as follows:

- Equipment and machineries should be maintained regularly to keep the noise generation at the design level;

- Silencers and mufflers of the individual machineries to be regularly checked;
- Exposure of workers to high noise areas, should be limited as per maximum exposure periods specified by OSHA.

Silt Yield Index (SYI) method has been used to prioritize sub-watershed in a catchment area for treatment. The area under high erosion category has to be treated by the project proponents, which accounts for about 48.84% of the total free draining catchment area. The details are given in Table-6.

**Table-6: Area under different erosion categories**

<b>Category</b>	<b>Area (ha)</b>	<b>Area (Percentage)</b>
Low	13789	9.28
Medium	62240	41.88
High	72571	48.84
<b>Total</b>	<b>148600</b>	<b>100.00</b>

A CAT Plan comprising of following measures is proposed:

- 
- Gap Plantation
- Afforestation
- Nursery development and maintenance of nursery
- Vegetative fencing
- Check Dams

Based on the field assessment, there are about about 595 project affected families. About 276 families are likely to lose both land and homestead. The number of families losing only land is 319. It is also assumed that about 120 PAFs (20%) will be left with less than 1 ha land. The details of project affected families are given in Table-7.

**Table-7: Details of Project Affected Families**

<b>Details of land category</b>	<b>Approx. Number of PAFs</b>
Only Land	319
Only Homestead	-
Both Land & Homestead	276
Total	595

The project proponent has formulated Resettlement and Rehabilitation (R&R) Plan based on the provisions and/or guidelines as given in the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.

An amount of Rs. 5908 lakh is being made for implementation of various activities outlined in Local Area Development Plan (LADP). The details are shown in Table-8.

**Table-8: Budget for implementation of Local Area Development Plan**

<b>S.No.</b>	<b>Items</b>	<b>Budget (Rs. million)</b>
1.	Scholarship to students	800.0
2.	Upgradation of Educational facilities	455.0
3.	Expenditure on Health care facilities	2433.0
4.	Improvement of living standards	520.0
5.	Expenditure on Industrial Training Institute	1700.0
	<b>Total</b>	<b>5908.0</b>

As a part of Disaster Management Plan, following measures have been suggested:

- Dam Safety and Maintenance Manual
- Emergency Action Plan (EAP)
- Administration and Procedural Aspects
- Preventive Action
- Communication System
- Notifications
- Evacuations Plans and Evacuation Team
- Public Awareness for Disaster Mitigation
- Management after receding of Flood Water

A detailed Environmental Monitoring Programme has been suggested for implementation during construction and operation phases of the project.

The total amount to be spent for implementation of Environmental Management Plan (EMP) is Rs.355.66 crore. The details are given in Table-9.

**Table-9: Cost for Implementing Environmental Management Plan**

<b>S. No.</b>	<b>Item</b>	<b>Cost (Rs. lakh)</b>
1.	Compensatory Afforestation, and Bio-diversity conservation	5416.75
2.	Catchment Area Treatment	3195.39
3.	Fisheries Management	516.80
4.	Public health delivery system	678.12
5.	Environmental Management in labour camp	1044.33
6.	Muck management	1470.28
7.	Restoration and Landscaping of construction sites	325.00
8.	Environmental management in road construction	520.00
9.	Greenbelt development	97.50
10.	Air Pollution Control	400.40
11.	Water pollution control	200.00
12.	Energy Conservation measures	100.00
13.	Fire Protection Plan	40.00
14.	Landslide Treatment Plan	2839.19
15.	Disaster Management Plan	2622.80
16.	Resettlement and Rehabilitation Plan	9606.36
17.	Local Area Development Plan	6052.00
18.	Plan to preserve cultural identity of the locals	185.56
19.	Monitoring and Evaluation Aspects for R&R aspects	60.00
20.	Environmental Monitoring during construction phase	194.73
21.	Purchase of meteorological instruments	0.70
22.	Purchase of noise meter	0.10
	<b>Total</b>	<b>35,566.01 Say Rs. 355.66 crore</b>

Based on detailed deliberations during the meeting, EAC asked the project proponents to provide information on the following aspects:

- Possibility of longitudinal connectivity to be explored
- Possibility of un-gated and un-interrupted flow to be explored
- Updation of the list of mammals species based on the information outlined in the Book on Mammals of North-Eastern India by Dr. Anwaruddin Ahmed.
- Year wise physical and financial targets to be given for implementation of Catchment Area Treatment Plan
- The Project Proponent was handed over representations from SANDRP, a Delhi based NGO, and were asked to submit a detailed response to the same to various clarifications sought in the said representations.

EAC concluded that on compliance of the above observations by the project proponent, the project will be reviewed and reconsidered again for Environmental Clearance.

**Agenda Item No. 2.2 Rapum Hydroelectric Project (80MW) in West Siang District of Arunachal Pradesh by M/s Rapum Hydro Power Pvt. Ltd. (RHEP—For consideration of extension of ToR**

The Rapum HEP project is proposed across river Yargyap Chu (a tributary of Siyom River) in West Siang District of Arunachal Pradesh. The project envisages construction of 22 m high barrage across Yargyap Chu river near village Mechuka to generate 80 MW of hydropower. This is a run-of-the-river scheme. The HRT is 1.515 km long with 6.6 m diameter and TRT is 125 m long with 8.5 m diameter width releasing water back into the river. The FRL is 1650 m and TWL is 1555 m has been fixed for project, in order to maintain the natural river flow and distance between Rego HEP and this project. The Catchment area up to project site is 834 Sq. km. The total land requirement for the project is about 41 ha. The submergence area will be 10.82 ha. An underground powerhouse is proposed on the right bank of river with 2 units of 40 MW each. Total cost of the project is about Rs. 550 Crores and will be completed in 4 years.

The TOR for the EIA study for Rapum HEP was appraised by the Environment Appraisal Committee (EAC) or River Valley and Hydro Electric Power Projects (RV&HEP) in its meetings held on 21- 22<sup>nd</sup> January, 2010; 26.2.2011; 26.3.2012 and 1-2<sup>nd</sup> June, 2012.

The TOR of Rapum HEP was approved by EAC for River Valley Projects on 8<sup>th</sup> November, 2012 for Rapum Hydro Electric Project (80 MW) located on Yargyap Chu River in Aalo district of Arunachal Pradesh withy two years validity period. As mentioned in ToR, the validity period for TOR of Rapum Hydro Electric Project (80 MW) will be expiring on 07-11-2014.

The three season baseline data has been collected. The preparation of draft EIA & EMP report is under progress. However the proponent may not be able to submit the EIA report, after public consultation, before expiry of the

present ToR. Therefore, the proponent sought extension of the validity of the TOR by two more years. As per latest OM , initial validity period is 4 years.

The EAC therefore, recommended that the Project proponent may be granted extension of validity of 2 years by which time they should come with EIA/EMP reports.

**Agenda Item No. 2.3 Jameri HEP (50MW) Project in West Kameng District, Arunachal Pradesh M/s KSK Jameri Hydro Power Pvt. Ltd.–For consideration of Extension of TOR**

ToR for the HEP was issued vide MoEF letter No. J-12011/34/2010-IA-I Dt. 25.10.2010 with two years validity period. Extension was accorded vide MoEF letter Dt. 20.3.2013 for one year making the validity up to 25.10.13

2<sup>nd</sup> Extension was requested by the EAC in 70<sup>th</sup> EAC meeting held on 10<sup>th</sup>-11<sup>th</sup> Dec.2013 and was recommended for 4<sup>th</sup> year's extension. However the letter was not issued.

While study of three seasons Baseline Data was completed and preparation of EIA/EMP report had been in progress , the Land & Socio Economic Survey could not be taken up in absence of clearance of the project from CEA ( with reference to PFR scheme of Tenga HEP - storage vis-à-vis KSK's Jameri -RoR). Based on KSK's request explaining the above , the matter regarding further extension of one year (2<sup>nd</sup> extension up to 24.10.2014) was considered in the 70<sup>th</sup> EAC meeting held on 10<sup>th</sup>-11<sup>th</sup> Dec. 2013 and the EAC recommended extension of scoping clearance till 24.10.2014 subject to relevant order.

In absence of a final decision on the location and type of Project , which was to be cleared by the STC of CEA , the Developer was not in a position to undertake the Land and Socio economic survey and also conclude the EIA/EMP report after conducting the Public Hearing. The decision on location & type of the project (with ref. to PFR scheme of Tenga HEP - Storage vis-a- visJameri - RoR) was pending in CEA and the same has been cleared as per proposed scheme of the Developer(M/s KSK) by STC (Standing Technical Committee) of

CEA in its meeting held on 28<sup>th</sup> April 2014 and communicated vide CEA's letter Dt. 8<sup>th</sup> May 2014.

Immediately on getting the required clearance from CEA on 8<sup>th</sup> May 2014, the land survey work was initiated but the same could not advance due to onset of Rains of this year's Monsoon. The Developer further intimated that the land & Socio Economic Survey work shall get started from Nov. 2014 with its target completion by March 2015. Based on the said land survey, the Developer plans to complete the EIA/EMP report and subsequent Public Hearing by October 2015. The project parameter remains unchanged.

There is no change in the Project parameters. EAC accepted the Developer's request for extension of ToR for a further period of one year i.e., up to 24.10.2015 subject to applicability of relevant OM in this regard.

**Agenda Item No. 2.4 Narmada Malwa Gambhir Link Project MP Barwah, Sanwer, Ujjain, Depalpur, Ghatiya, Barnagar – For consideration of TOR**

**Project proponent abstained**

**Agenda Item No. 2.5 Kanthanapally Sujala Sravanthi Project in Waranagal District-For Consideration of Extension of ToR**

The project proponent explained that the TOR for EIA/EMP was approved by MoEF, GoI vide their letter no: F.No. J-12011/1/2010-IA-1, dated 16-April-2012 for two years validity period.

The data analysis and report writing for EIA/EMP study was completed for all the aspects except the Catchment Area Treatment; the Plan for Conjunctive use of Ground and Surface Water; and the R & R Plan for Project Affected Families.

As the validity of TOR was expired on 16-04-2014, an application was submitted to MoEF vide letter no:CE/GLIS/Wgl/DCE/OT1/TS5/F.193 Vol-IV/1765, dated 23-08-2014 with a request to grant one year extension for enabling them submission of final EIA/EMP Report including public hearing.

The committee pointed out that there was a complaint regarding Tendering of the Barrage work, whereas the EC is still to be granted. It was explained by Government of Telangana that investigation of barrage works like drilling of bore wells, FRL survey, etc., are going on now. The Chief Engineer of the Project was requested to submit a clarification through verification of the facts regarding delay in submitting request for extension of ToR, it was informed that due to pre-occupation in bifurcation of state this was not possible to submit.

**Agenda Item No. 2.6 Morand-Ganjali Irrigation Project, in Hoshangabad District of Madhya Pradesh by M/s Narmada Valley Development Corporation-For consideration of extension of validity of ToR**

**Project proponent abstained**

**Agenda Item No. 2.7 Chuzachen HEP in Sikkim by m/s GatiInfrastrure Pvt. Ltd.-Consideration of Environmental Clearance (EC) for Capacity enhancement from 99 MW to 110 MW.**

Chuzachen HEP is located in East Sikkim District of Sikkim. Project was commissioned on 18th May, 2013 and is under operation. Project was discussed in 75<sup>th</sup> EAC meeting held during July 2014 for revision grant of environment clearance for changed capacity from 99 MW to 110 MW.

EAC considered it as a case of violation and recommended Ministry of Environment and Forests to take appropriate action under section 5 of the EP Act for regulating the generation of electricity and limit it to the capacity for which EC has been granted i.e. 99 MW till the time environment clearance is granted for the new/ revised capacity i.e. 110 MW.



EAC has made the following observations during the discussion on this project in its 75th meeting, which are as under.

1. The presentation made by the company m/s Gati Infrastructure Ltd indicated that the project for commissioning a hydroelectric power plant of 9 MW capacity was given EC in September 2005. In May 2006 the company engaged Kayviat International Project consultants Pvt Ltd, who conducted a review and recommended enhancement of the capacity to 105 or 110 MW. The construction work started in Sept 2006. This could have been done normally after the revised DPR has been prepared. This is a clear indication that the company was fully aware of the revised proposal in Sept 2006. The para 6 of the EC letter issued by the Ministry of E&F clearly says that in case of change in the scope of the project, project would require a fresh appraisal. The spirit behind this provision is that the project proponents do not initiate any construction till the revised proposal is given the necessary EC. The action of the project proponent is a clear violation of the Environment Clearance issued by the government.
2. The project proponent in the meeting of the committee indicated that the dimensions of various construction components of the project have undergone change vis-à-vis the approved project for commissioning a power plant of capacity 99MW. In other words the company constructed a project which had no Environment Clearance. Further the land use has also change, particularly forest land. This may require fresh clearance from the FAC.
3. The role of the EAC has been out lined under the Ministry's notification dated 14th Sept 2006. Under these guidelines there appears no specific provision for EAC to take up such cases where the power project has been constructed and commissioned without an EC. However, the ministry in 2013 brought out an OM ( No. J-11013/41/2006-IA.II(I) dated 27.06.2013) in which some direction has been given for considering case of violation of EC accorded, where violation is essentially related to operating the project beyond authorized capacity. While deciding action to be taken in this case public interest must be given due consideration besides keeping in mind the spirit behind the provisions of the aforesaid OM.

4. The Ministry needs to indicate to the EAC the provision in the rules under which this case is to be considered by EAC for grant of Environment Clearance for the revised project. In order to expedite matters the EAC would at this stage needs to examine the deviations which have occurred due to change of design and capacity of the power project and assess the environmental impact of such changes. The project proponent therefore needs to provide information with respect to any change required in the TORs issued for the original project along with all details of deviations in the project from the original to the EAC for further consideration. The company must also give an estimation of the benefit which will accrue to them from the increased capacity over the life of the project. After the matter is clear as to how EAC is to proceed the need for submission of a revised EIA/EMP will be considered.
5. Para 3(viii) requires the Regional Office, Shillong to submit six monthly monitoring reports to MOEF. It appears that no such reports have been received, otherwise in not conceivable that this drastic deviation goes unnoticed. EAC suggests that the ministry seeks an explanation from the concerned official and strengthens the monitoring mechanism so that such instances do not recur.
6. This is a fit case for taking stringent action under the relevant law by the government. The EAC, therefore, further recommends that the government i.e. the Ministry of Environment and Forest take appropriate action under section 5, explanation (b) of the EC Act for regulating the generation of electricity and limit it to the capacity for which EC has been granted till the Environment clearance is granted for the New/ Revised project following the procedure as laid down under the prevalent law.

The Developer has responded to these observations and presented the matter before the EAC as under.

### **Observation**

The presentation made by the company M/s Gati Infrastructure Ltd indicated that the project for commissioning g a hydro electric power plant of 99MW capacity was given EC in September 2005.In May 2006 the company engaged Kayviat International Project consultants Pv Ltd, who conducted are

view and recommended enhancement of the capacity to 105 or 110 MW. The construction works started in Sept 2006. This could have been done normally after the revised DPR has been prepared. This is a clear indication that the company was fully aware of the revised proposal in Sept 2006. The para 6 of the EC letter issued by the Ministry of E&F clearly says that in case of change in the scope of the project, project would require a fresh appraisal. The spirit behind this provision is that the project proponents do not initiate any construction till the revised proposal is given the necessary EC. The action of the project proponent is a clear violation of the Environment Clearance issued by the government.

### **Response/Action**

MoEF has issued a notice under section 5 of EP Act on July 31, 2014 and asked the project proponent for the explanation for installation of machines of higher capacity than were permitted by environment clearance. The Developer responded in detail explaining that higher capacity machines were installed based on re-assessment of water availability as site specific data for longer period was available post DPR/EIA stage and overload of 10% was built into machine's installed capacity. MoEF did not agree and considered it as a case of violation of environment clearance and directed PCE-cum-Principal Secretary, Forests, Environment & Wildlife Management Department, GoS to initiate necessary action in terms of Ministry's OM No. J-11013/41/2006-IA-II (I) dated 27.6.2013 and inform Ministry to enable further necessary action. MoEF further directed the Developer to restrict the generation to 99 MW vide letter No. J-12011/18/2005-IA-I, dated August 26, 2014 and company was called upon to furnish a resolution of Board of Directors with an undertaking to ensure that the HEP is operated at 99 MW only. The Developer thereafter, complied with the requirement and submitted Board Resolution.

In the meantime, the State Government has initiated legal action under section 15 and 19 of EP Act, 1986 and filed a complaint in Court of Civil Judge cum Judicial Magistrate East, Gangtok Sikkim under case code 218400012872014. The case has been registered under registration No. 81/2014 dated 5/11/2014 and directed proponent to operate only up to 99 MW till the revised environment clearance is obtained from the MoEF for 110 MW installed capacity.

## **Observation**

The project proponent in the meeting of the committee indicated that the dimensions of various construction components of the project have undergone change vis-à-vis the approved project for commissioning a power plant of capacity 99MW. In other words, the company constructed a project which had no Environment Clearance. Further, the land use has also changed, particularly forest land. This may require fresh clearance from the FAC.

## **Response/Action**

The Developer presented a detailed comparison of project salient features, which were considered during EIA study (for 99 MW capacity) with that of as-built project features and emphasized that all the vital project parameters such as FRL, TWL, submergence area, etc. remain unchanged. For Rango dam, height is reduced from 48m to 45.6m and crest length also decreased from 199 m to 186.0 m; for Rongli dam height is reduced from 41.00m to 39.0m and crest length increased from 113.83m to 130.0m; common HRT length increased by 5m from 3225m to 3230 m and diameter reduced from 4.6m to 4.45m; for Rongli HRT length increased by 3m from 2598m to 2601m and diameter increased from 3.30m to 3.55m; for Surge shaft height increased from 103.9m to 137.0 m due to deeper foundation and diameter reduced to 4.45 m in lower 47m. It was explained that these changes are on account of detailed engineering exercise during the construction of the project and are not due to change of capacity from 99 MW to 110 MW. Additional muck generation/change of land use could be a potential impact due to construction of project components of higher dimensions, however, in this case as the change in dimensions are negative also for some components, net quantity of muck generated was slightly lower than estimated in case of HRT as well as surge shaft.

EAC further observed in its earlier meeting that the land use has also changed, particularly forestland. This may require fresh clearance from the FAC. Developer explained that Forest Clearance was obtained vide MoEF letter no. 3-SK C 055/2005-SHI/4219-20 dated 09.01.2006 for diversion of 7.4598 Ha of forest land, which was estimated during EIA study. Additional 3.2250 Ha of forest land was diverted vide MoEF, letter No. 3-SK B 131/2007-SHI/2425-26

dated 18.11.2008 and this land was diverted for construction of approach roads; which were expected to be provided by the State Government and therefore this was not considered at DPR stage. No additional land is needed for the project; hence fresh forest clearance is not involved.

### **Observation**

The role of the EAC has been outlined under the Ministry's notification dated 14th Sept 2006. Under these guidelines there appears no specific provision for EAC to take up such cases where the power project has been constructed and commissioned without an EC. However, the ministry in 2013 brought out an OM ( No. J-11013/41/2006-IA.II(I) dated 27.06.2013) in which some direction has been given for considering case of violation of EC accorded, where violation is essentially related to operating the project beyond authorized capacity. While deciding action to be taken in this case public interest must be given due consideration besides keeping in mind the spirit behind the provisions of the aforesaid OM. The Ministry needs to indicate to the EAC the provision in the rules under which this case is to be considered by EAC for grant of Environment Clearance for the revised project.

### **Response/Action**

It was explained that certain aspects of the appraisal process are being prescribed by the Ministry from time to time through issue of OMs as these are not clear in the EIA Notification, 2006. Cases of violation have been covered through the above OM dated 27.06.2013 which prescribes provisions and processes to be followed. In addition and to facilitate consideration of such cases, the Ministry has issued recently another OM bearing No.J-11013/41/2006-IA-II (Part) dated 7.11.2014. Para (c) of this OM explicitly says "In case of project proponent seeking Environment Clearance for expansion of the existing unit but, had committed certain violation and the proponent has submitted all the information and details but, the State has not filed case under section 15/19 of EP Act, 1986, such cases shall be considered by the Authority, as the project proponent is not at fault". On this premises and policy of the Ministry to cover such cases, the case needs to be considered by EAC. The EAC finds that this is not an expansion case and hence not covered by the OM No.J-11013/41/2006-IA-II (Part) dated 7.11.2014. Para (c). While the EAC feels that these OMs strictly do not apply in this case the matter is left to the ministry to interpret as they have only formulated these OMs. However, the

EAC would like to put on record the consequences of approving cases of violation of this nature under the OMs mentioned above. The main consequence is as given below:-

The Recommendations of the EAC in case of Hydel Projects for EC will have little relevance if the project proponent is given the freedom to change the project at his initiate at any time and seek no EC clearance from the government for the revised project within a fixed time frame. Unfortunately the OMs mentioned do not prescribe any time lines. In this case the project proponent came after a gap of 8 years with no plausible reasons for delay. The understanding that these projects have an inbuilt provision to allow operations at 10% higher PLF does not give the project proponent the freedom to enhance capacity. Project Developer has not clearly indicated the reasons for delay or in other words the developer is unwilling to disclose the compelling reasons to seek EC after a gap of 8 years.

This long gap being unexplained does lend itself to an inquiry.

### **Observation**

In order to expedite matters the EAC would at this stage needs to examine the deviations which have occurred due to change of design and capacity of the power project and assess the environmental impact to such changes. The project proponent therefore, needs to provide information with respect to any change required in the TORs issued for the original project along with all details of deviations in the project from the original to the EAC for further consideration. The company must also give an estimation of the benefit which will accrue to them from the increased capacity over the life of the project. After the matter is clear as to how EAC is to proceed the need for submission of a revised EIA/EMP will be considered.

### **Response/Action**

It was discussed that only change due to increase in installed capacity of the project from 99 MW to 110 MW is during operation phase and that is due to change in design discharge from 39.5 cumec to 42.6 cumec i.e. an additional drawl of 3.1 cumec only during 4 monsoon months i.e. June to September. This aspect has been discussed in detail in July meeting of EAC where the committee observed that although there was no such explicit provision in the environment clearance letter, however, EIA and EMP studies had considered a release of 2.13

cumec as environment flow, which works out to be 32% of the average of lean season flow as per DPR series 90% DY and 20% of the average of lean season flow as per updated hydrological series. Regarding monsoon spills, it was explained that monsoon spills are substantial and are of the order 40-50%, out of which only 3.1 cumec is increase in design discharge is requested for 110 MW capacity. Based on last 9 years observed daily discharge data, it was observed even during the leanest year, the spills are more than 30%. A review of flow pattern; before and after diversion show that sufficient flow is available in the river and utilisation of additional 3.1 cumec of design discharge will not affect the environment flow in monsoon. In view of this, it was explained that revision of installed capacity of Chuzachen HEP to 110 MW will not have any adverse impact on environmental flow release.

Regarding EMP implementation, the developer presented that against the budget for EMP was Rs. 462.81 lakhs as estimated during EIA study, till date an amount of 4584.55 lakh has been spent on environment and social activities. It was also discussed that almost all the components of environment management plan have been implemented during the construction phase of the project. Budgeted amount for CAT plan and Biodiversity Conservation and Management Plan have been deposited, land acquisition have been completed and R&R Plan implemented; Muck disposal, provision of fuel wood, energy conservation measures and other construction phase impacts have been mitigated through environment management plans. Regarding Fisheries Development, a proposal has been received from Directorate of Fisheries, GoS vide Ref No. 350/Fish dated 24th Sept.2013. Developer is ready to provide the budgeted amount for fisheries development as per further requirement by Directorate of Fisheries.

### **Observation**

Para3(viii) requires the Regional Office, Shillong to submit six monthly monitoring reports to MOEF. It appears that no such reports have been received, otherwise in not conceivable that this drastic deviation goes unnoticed. EAC suggests that the ministry seeks an explanation from the concerned official and strengthens the monitoring mechanism so that such instances do not recur.

### **Response/Action**

Developer responded that they have been submitting regular reports to regional Office as per the condition of environment clearance. The EAC noted that there is no response from the regional office as to whether these reports have been received. Further the EAC also noted that MOEF has not sought any explanation from the regional office as to why this matter was neglected. However, the Ministry did inform the EAC that the Ministry is already considering strengthening the monitoring mechanism including considering online submission of compliance report.

### **Observation**

This is a fit case for taking stringent action under the relevant law by the government. The EAC, therefore, further recommends that the government i.e. the Ministry of Environment and Forest take appropriate action under section 5, explanation (b) of the EC Act for regulating the generation of electricity and limit it to the capacity for which EC has been granted till the Environment clearance is granted for the New/ Revised project following the procedure as laid down under the prevalent law.

### **Response/Action**

It was discussed that the MoEF&CC is dealing with the violation cases of environment clearance in accordance with its guidelines. Directions have also been issued to limit production capacity at 99 MW and violation of this may invite closure of the plant. The project developer put the case before the EAC to be examined in the light of technical measures including additional environment impacts, adequacy/requirement of additional environment management plans, if any to mitigate such impacts from environmental point of view.

Regarding approval of CWC in view of increased cost, it was enquired whether cost escalation of the project is due to increase in capacity as well as due to other factors. Committee expressed the view that this may require fresh approval from Central Electricity Authority/CWC as the as built cost is substantially higher than that of cost estimate at DPR stage. Developer responded that DPR cost was less than Rs. 500 crore and therefore, at that time, project did not require to go for CEA/CWC concurrence. It was appraised



at State level and approved. It was suggested by the Ministry representative that although, environment clearance is not linked to DPR concurrence from either CEA/CWC/State Government which is governed by the policy of Ministry of Power and Ministry of Water Resources, from time to time, the developer may have to go for CEA/CWC approval separately, if required. While examining this suggestion of the Ministry the EAC observed that it may be construed that there is no need for the project proponent to submit the revised DPR before the EAC. It is not understood how EAC will recommend for EC clearance without this document.

After detailed deliberations, EAC concluded the following:

- The violation case is being separately handled by Ministry and a case has been already registered against the Developer by the Sikkim Government.
- On technical side, there are no significant additional impact on various physical parameters such as dimensions of the dam, HRT etc. However, the significant change is in the capacity being raised from 99MW to 110 MW and consequently doubling the project cost
- However, the Developer shall have to follow the latest norms of environment flow @ 20% in lean season, 20-25% in non-lean & non-monsoon and 30% during monsoon season. The higher capacity is strictly subject to fulfilling these e-flow criteria.
- There is a need to have document covering the detailed project information, revised impacts and status of implementation of original environment management plan already sanctioned. On receipt of such a document along with a comparison of various components of original EMP with the higher capacity HEP. MoEF&CC may consider placing the same before the EAC, if the Ministry feels it appropriate to do so.

The MOEF may take action as deemed appropriate keeping in mind the observations of the EAC.

**Agenda Item No. 2.8 Dinchang HEP (252 MW) in West Kameng Distt. Arunachal Pradesh by KSK Binchang Power Co. Pvt. Ltd.-For consideration of Extension of validity of ToR.**

Dinchang HEP (252 MW) is a run of river project envisaged with diurnal storage located on Digoriver just downstream of Selari village in West Kameng District of Arunachal Pradesh.

M/s KSK Energy Ventures Ltd. entered into MoA with the Govt. of Arunachal Pradesh in Sept'2007 for implementation of Dinchang Project on BOOT basis. Subsequently SPV in the name of KSK Dinchang Power Co Pvt. Ltd was formed for implementation of the project. Accordingly the ToR for preparation of EIA / EMP report was accorded to KSK Dinchang Power Co. Pvt. Ltd .on 8<sup>th</sup> Nov.'2011 . The project was to be developed between El. 1157 & 800 M.

The project is located near Bomdila town, the HQ of West Kameng district in the state of Arunachal Pradesh and in proximity of Selari Village. Nafra town is located on the banks of Bichomriver, further 30 km from Selari village. The road from Nafra town to Bichom dam is under-construction which provides access to the confluence of Bichom and Digo rivers about 10km downstream, near which the Dinchang powerhouse is proposed.

Dinchang Project is proposed just downstream of Khuitam Hydroelectric Project (66 MW) having TWL at EL. 1173 m. Further upstream on Digoriver, Gongri project (144 MW) is envisaged. The Bichom Dam of NEEPCO's Kameng H.E.P is located downstream of the project with FRL at EL. 771m.

Based on approved Hydrology by CWC and the revised limits (1138 & 800m) of the project , it was found that with the installed capacity of 252 (3X84) MW , minimum peaking capability of 3 hours can be obtained in a 90% dependable flow year.The estimated annual designenergy (90% dependable year, 95% machine availability) is 1093.01 GWh.

The MDDL of the reservoir is proposed at El. 1128.0 m which provides sufficient live storage (0.422 MCM)corresponding to 1.5 hours of peaking generation in two blocks per 24 hours at the design discharge. The Diversion

structure is envisaged as barrage 155 m long and 22 m high above river bed level.

The project is envisaged to be completed in 4½ years, after 3 years preconstruction activities including DPR preparation. The preliminary cost estimate has been carried out on the basis of component sizes as per the preliminary design computations. The total project cost is estimated to be about Rs. 1980.02 crores at 2013 price. There is no change in project parameters.

Three season data collection has been completed in 2012-13. During the course of land survey of the project, it was noticed that part of land on right bank above the El. 1145m was under possession of Defense Research Dev. Authority (DRDA) and the matter was taken up with concerned offices viz. DRDA, Land Revenue Department etc. Finally based on acceptance of the above, vide Land Revenue Department's letter dated 12<sup>th</sup> June 2013, the change in the upper limit of the level from El. 1157 m to El. 1138m was accorded by the Govt. of Arunachal Pradesh vide their letter dt.12.7.2013. The said change in upper limit of the project also necessitated change in type of Diversion Structure from Dam to Barrage and also lowered the Power Potential from 360 to 252 MW. The lower limit i.e., the TWL remains same at EL. 800m. Since the land survey could not be taken up earlier, KSK requested for extension of ToR up to 7.11.2014 and acceptance of downward revision of capacity from 360 to 252 MW and the same was accepted during 69<sup>th</sup> EAC meeting and communicated vide MoEF letter Dt. 4.3.2014.

The project parameter remains same as discussed during the last EAC (69<sup>th</sup>) meeting. The project proponent intimated that though the Land Survey work started from Nov'13, the same could not be completed before the onset of rains of monsoon season of 2014. It is further intimated that the DPR is in advance stage of completion and balance Land & Socio-Economic survey work is now getting restarted with target completion in about four months time , i.e., by March 2015. Based on complete land & Socio -economic Survey, The EIA/EMP report & subsequent public hearing is planned to be concluded by Oct.2015. The ToR Dt. 8<sup>th</sup> Nov. 2011 with one year extension is valid up 7.11.2014.

In view of the above circumstances, the EAC recommended to extend validity of ToR by one year to submit final EIA/EMP reports, after Public Consultation for appraisal to obtain Environmental Clearance.

**Agenda Item No. 2.9 Killing Hydro Electric Project (55 MW) Assam Meghalya Border By M/s NEEPCO-For consideration of TOR.**

Killing Hydro Electric Project is located on the Killing River in Karbi Anglong district of Assam and RiBhoi district of Meghalaya. The longitude & latitude of the dam site are 92<sup>0</sup>09'46.8"E and 25<sup>0</sup>57'29.24"N respectively. The dam site is connected from Assam side with a 4km long foot track from Karbihidi village near Mikir Pathar. Karbihidi is approachable from Langerdang through a 16km long kutcha road. Langerdang is located at a distance of 28km from Nellie on Nellie-Ulukunchi road. Nellie is located on National Highway-37 at a distance of 66km from Guwahati. Alternately, the dam site can be approached from Meghalaya side from Topatoli on NH-37 to Korhadem village through a 27km long black topped road. A 4km long foot track connects Korhadem village and Dam site. Topatoli is 48km from Guwahati. Power House site can at present be approached with 3km long foot track from a point 17km from Nellie of Nellie-Ulukunchi road. Surge Shaft location is approachable through a 6.0km (approx.) long kutcha road from Karbihidi village.

The Killing Hydro Electric Power Project envisages construction of a dam across the Killing river near Mikir Pathar in Assam-Meghalaya boarder to harness the river waters for hydro power generation. The catchment area up to the dam site is 426.00 sqkm and the entire catchment is rain-fed. The Killing (Umium) river originates from eastern part of East Khasi hills. The basin has got the South-North orientation and is bounded on the South by the North Cachar hill ranges and on the North by the River Kopili. On the East-West direction, it is bounded by Kopili basin and Digaru basin respectively.

The project envisages the following components:

- A concrete gravity dam of 44m high from the deepest foundation level with low level spillway comprising 4 bays each with radial gate of size 16.00m (W) x 13.00m (H) to pass the design flood of 6000 cumecs.
- Temporary river diversion works with river channel alongwith upstream cofferdam of nominal height.
- A Power Intake with inclined trash rack on the right bank.
- Head Race System with 850m long 2.6m dia modified horse shoe shaped concrete tunnel and 7.3km long 2.6m dia circular Mild Steel Pipe.
- One number of restricted orifice type Surge Shaft of 8m dia and 55m high. Orifice diameter is 1.10m.

- One number of circular Penstock of 2.6m dia and 1900m long which bifurcates into 1.6m dia and 30m long penstock to feed two turbine units.
- A Surface Power House of 59.0m (L) x 24.3m (W) x 35.5m (H) housing two Vertical Axis Francis Turbines and Generator units of 27.5 MW each.
- One tail race channel of 6m wide and 35m long to discharge the water into the river.

The cost of construction of the project has been estimated at August 2014 price level with a construction period of 36 months. The estimated Present Day Cost of the project is Rs. 682.47 Crore, including Rs. 627.55 Crore of Hard Cost and Rs. 54.92 Crore as IDC & financial charges at August 2014 Price level. The first year tariff and levellised tariff have been worked out as Rs.6.10/unit and Rs.5.50/unit respectively.

It is proposed to provide two outgoing bays for evacuating power at 132kV level from Killing HEP. This power would be pooled at Misa Substation of PGCIL through one number 132kV double circuit transmission line taking off from Killing HEP.

It is proposed to complete the project and commission all the units in a period of 36 months from the date of start of the project. Construction of all the works shall be taken up simultaneously so that the project could be commissioned within scheduled construction period.

There are two Flow Irrigation Projects in RiBhoi District of Meghalaya which draw water from Killing River upstream of Dam as follows:

- Tyrso Village Flow Irrigation Project – Water Requirement-1.2 Cumecs(Being operational since early Eighties).
- Pynthor Village Flow Irrigation Project – Water Requirement-0.72 Cumecs. (Under renovation stage).

The water series is exclusive of diversion of water for Tyrso Village Flow Irrigation Project. However to cater for future water requirement for Irrigation Projects and for the Pynthor Village Flow Irrigation Project, a release of 1.2 Cumec has been assumed in 90% dependable year. The peak value of PMF for 1-day PMP for the Killing dam is estimated as 3,351 m<sup>3</sup>/s.

The power potential studies have been carried out based on 17 years (1983-84 to 1999-2000) generated flow series on 10-daily basis at dam site.

The net storage capacity of the reservoir between MDDL at EL.505.00 m and FRL at EL.513.00m is 0.92 Mcum and storage is sufficient to meet a minimum daily peaking of about 3.0 hours in the lean period. The gross head and the net rated head available for the turbine are 378.00m and 352.00m respectively and the design discharge is 18.81 cumec. The proposed installed capacity is 55MW (2x27.50MW) with further provision of 10% continuous overload. The annual energy generation is 288 MU.

The submergence area in the reservoir of the project at FRL is 25 Ha. Land will also be required for the project components and the same has been arrived as 98.2 ha based on preliminary assessment.

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

- Disaster vulnerability of the area on various aspects like landslides, earthquakes and floods.
- Downstream Social and Environmental Impact Assessment.
- Possibility of longitudinal connectivity to be explored
- Possibility of un-gated & un-interrupted flow to be explored
- Preparation of list of mammals species based on the information outlined in the Book on Mammals of North-Eastern India by Dr. Anwaruddin Ahmed.
- Impacts due to peaking power Operations with special reference to downstream areas and communities
- Impacts of Tunneling and Blasting
- Impacts of Mining of materials for the project
- Impacts of Backwater Effects of the reservoir in flood season
- A table of 10 daily water discharges in 90% dependable year showing the intercepted discharge at the dam, the environmental and other flow releases downstream of the dam and spills shall be included in the EIA report
- Observed flow at G&D site, rainfall data and intermediate catchment mapping along with its contribution shall be included in the EIA report
- Impacts due to DG set operation during construction phase.
- Bio-diversity study to be conducted by a suitable institute as per OM of MoEF dated 28.05.2013
- Realistic assessment of requirement of labour during the construction phase of the project should be done and local labour should be preferred.

Mixing with local tribal community to be minimised and if need be, labour colony may be set up away from such inhabitants to avoid adverse impact on ethnic community.

**Agenda Item No. 2.10 Dardu Hydroelectric Project in Papum Pare District of Arunachal Pradesh -change in installed Capacity from 60 MW to 49 MW & shifting of project component from left bank to right bank of the Pare river—For Consideration of Revised Scoping Clearance**

Dardu Hydroelectric Project is located in Papum Pare District of Arunachal Pradesh. It envisages utilization of flow of Pare River, a tributary of Brahmaputra River, for generation of electrical power in a run-of-the-river scheme. It is located in between latitude of 27°14'9.48" N and 27°15'27.4"N and between longitude of 93°43'0" E and 93°47'15.89" E. Barrage site of the project is located at latitude of 27°14'9.48" N & longitude of 93°43'0" E.

It was discussed that the Memorandum of Agreement (MoA) signed with Government of Arunachal Pradesh during December 2007. Scoping Clearance for Dardu HEP (60 MW) was accorded by Ministry of Environment & Forests, Government of India vide letter No. J-12011/20/2012-IA-I dated October 18, 2012. At the time of scoping clearance, environment flow release provisions in different seasons were discussed in the Expert Appraisal Committee (EAC) meetings held during July and September 2012 and also mentioned in the scoping clearance letter. During the DPR preparation, flow release provisions are made as per EAC recommendations and power potential studies were revised for the remaining available water for power generation. This has resulted in decrease in installed capacity from 60 MW to 49 MW. Further during geological investigations, due to presence of MBT on left bank, project components have been shifted to right bank. Developer also informed that to avoid the submergence of road, FRL has been reduced from 400 m to 392 m, which has resulted in decrease in gross storage from 7.55 MCM to 3.28 MCM and submergence area from 64.2 ha to 42 ha. Keeping in view the above changes, it was requested to revise the Scoping Clearance for 49 MW installed capacity and to extend the validity of the TOR.

Developer also discussed that during earlier scoping clearance detailed discussion was held for the provision of the environment flow. Pare River

originates at 2860 m and total catchment area of only 710 sq. Km up to diversion location is rain-fed, making the lean period much longer. Keeping in view the distinct discharge pattern, EAC recommends the following specific values as the environment flow.

Monsoon release June 10 to September 10 in Cumec	End of monsoon release for September 10-30 in Cumec	Lean season October to April in Cumec	Release in May* Pre-monsoon in Cumec
12	7	3	4.5

Developer requested that for the purpose of DPR the EAC recommended values have been adopted and during the process of EIA study, as per the TOR requirement, a site specific study will also be conducted. Findings of the site specific study or the EAC recommended values, whichever is higher, will be adopted as the final environment flow release values. EAC accepted the request and observed that matter will be discussed in detail during final appraisal after the findings of the site specific study will be available.

EAC concluded that as capacity reduction is only due to the provision of environment flow, as per EAC recommendations, the scoping clearance should be revalidated for the revised capacity of 49 MW and one year extension should be granted to complete Public Hearing and submit the final EIA/EMP reports for appraisal.

**Agenda Item No. 2.11 Gimliang HEP (88.5 MW) Hydroelectric Project in Anjaw District of Arunachal Pradesh-For consideration of Revision of ToR from 74 MW to 88.5MW.**

Gimliang Hydroelectric Project is located in Anjaw District of Arunachal Pradesh. It envisages utilization of flow of Dav River, a tributary of Lohit River, for generation of power in a run-off-the-river scheme. M/s SKIL has been allotted the project for development on Build-Own-Operate-Transfer (BOOT) basis.



The project was discussed for scoping clearance during 76<sup>th</sup> meeting of Expert Appraisal Committee (EAC). EAC has made certain observations and sought additional information from developer. Developer has submitted the required information and made a presentation of the same before EAC.

Developer explained that scoping clearance was applied earlier for 126 MW installed capacity during May, 2013 and matter was discussed in 67<sup>th</sup> meeting of EAC, where scoping clearance was recommended and MoEF issued Scoping Clearance letter vide MoEF letter No. J-12011/37/2011-IA-I dated August 16, 2013.

Developer further explained that Hydrology and power potential studies have been approved by CWC and CEA. Based on approved hydrology and power potential, project capacity has been revised to 88.5 MW due to increase in rated head from 299m to 360m as power house is shifted to another location on surface about 1.5 Km downstream of previous underground location. The Tail Race Tunnel has been replaced to Tail Race Channel about 175m long as compared to the 430m long tunnel. The length of Head Race tunnel has been increased by about 2400 m due to the shifting of power house by about 1.5 Km.

There is no other planned project on Davriver. Minimum one kilometer free flowing river stretch will be maintained between minimum tail water level of Gimlinag HEP and FRL of Upper Demwe HEP, which is 525m.

Committee observed that earlier observations have been addressed and salient features revised. Land requirement is revised from 79.11 ha and entire land is considered as forestland. EAC inquired about the provision of environment flow to which developer responded that prevailing environment flow norms will be adhered to and such provisions have already been made while working out the power potential for the project.

EAC was satisfied with the response to earlier observations and recommended the project for scoping clearance subject to the following conditions:

- Disaster vulnerability of the area on various aspects like landslides, earthquakes and floods.
- Downstream Social and Environmental Impact Assessment.

- Possibility of longitudinal connectivity to be explored
- Possibility of un-gated & un-interrupted flow to be explored
- Preparation of list of mammals species based on the information outlined in the Book on Mammals of North-Eastern India by Dr. Anwaruddin Ahmed.
- Impacts due to peaking power Operations with special reference to downstream areas and communities
- Impacts of Tunneling and Blasting
- Impacts of Mining of materials for the project
- Impacts of Backwater Effects of the reservoir in flood season
- A table of 10 daily water discharges in 90% dependable year showing the intercepted discharge at the dam, the environmental and other flow releases downstream of the dam and spills shall be included in the EIA report
- Observed flow at G&D site, rainfall data and intermediate catchment mapping along with its contribution shall be included in the EIA report
- Impacts due to DG set operation during construction phase.
- Bio-diversity study to be conducted by a suitable institute as per OM of MoEF dated 28.05.2013
- Realistic assessment of requirement of labour during the construction phase of the project should be done and local labour should be preferred. Mixing with local tribal community to be minimised and if need be, labour colony may be set up away from such inhabitants to avoid adverse impact on ethnic community

**Agenda Item No. 2.12 Sonthi Lift irrigation Scheme in Gulbarga Distt. of Karnataka by Krishna Bhagya Jala Nigam Ltd. Govt. of Karnataka-For consideration of Environmental Clearance (EC)**

The project proponent i.e. Krishna Bhagya Jala Nigam Limited (KBJNL) during the presentation explained the following:

“SONTHI LIFT IRRIGATION SCHEME” (Modified) is proposed to extend the irrigation benefits to drought prone Taluka of Chittapur of Gulbarga District and Yadgir Taluka of Yadgir District through existing Sonthi Minor Irrigation Barrage (2003) at Sonthi. The irrigation scheme envisages to utilize 4 TMC of water from the existing barrage to irrigate 16800 Ha of land (CCA) in about 31 villages, situated on the left bank side of Bhima river, through extension of the canal

network. The Barrage across River Bhima ( $16^{\circ}, 49' 50''$  N & longitude of  $76^{\circ}, 55' 45''$  E) includes a bridge (7.5 m wide), a lift point at upstream area near Kollur village, a small Power House [13.5 MW (4.5 MW x 3 units)] at downstream side and proposed extension of canal networks. The length of barrage is 665 meters and height 16m from river bed level (365.50 m, above mean sea level), earthen dam towards the left flank 275 meters and on the right flank is 180 m, including 37 numbers of mechanically operated vertical lift gates (size width 15 m x height 8 m). The live storage of reservoir / barrage is 2.486 TMC at FRL (376.00 m). The Sonthi LIS (Head works- $16^{\circ}, 53' 07''$ N;  $76^{\circ}, 59' 07''$ E) comprises of an intake channel (365.500 m, CBL of intake channel) of 3 km length to draw water from the foreshore of the reservoir at Kollur village. The intake channel leads to the lift point/jackwell cum pump house (capacity 1944 HPx4) near Tarkaspet Village, which lift water through Raising Mains a length of 4320 m against a total head of 49 m (with a static head of 43.20m) into delivery chamber. From delivery chamber water will be catered through gravity canal network namely Sonthi Feeder Canal-1.88 Km, Sonthi Main Canal-38 Km, Sonthi Branch Canal-20 Km, Distributory No.1 Canal- 15 Km and Yargol Minor Canal-9.876 km and its distribution networks for irrigation. Further, the state government had also allotted a small hydel power project to generate 13.5 MW (4.5 MW x 3 units) M/s Sugnaneshwara Hydel Power Pvt. Ltd as per G.O. No: PD/267/NCE/2004, Bangalore Dated: 13.09.2004 and also as per G.O.No: No: PD/264/NCE/2007, Bangalore Dated: 09.08.2007 for using seasonal floods and is already commissioned. The estimated cost of the project is Rs. 564.00 Crores based on the SR 2013-14.

- Total land required for various project components is of about 1412.81 ha. About 2.43 Ha of revenue/government land, 1409.60 ha private land and 0.78 ha forest land is to be acquired. The Submergence ratio with reference to CCA is only 0.04. Stage-1 clearance for diversion of 0.78 ha forest land for construction of Sonthi main canal has been obtained from Deputy Conservator of Forest (Central), MOEF, GOI, New Delhi vide letter No: vide file No. 4-KRB 939/2013-BAN/3457 Dated: 31-05-2013. The net yield available from the catchment area of Karnataka state at the Project site is 27.23 TMC at 75% dependability as computed from the 46 years of flow data obtained from G & D sites of CWC located at Takali, Wadakabal and Yadgir and has been approved by Central Water Commission. However, the present scheme will envisage usage of 4 TMC water only.
- The proposed cropping pattern has been approved by Department of Agriculture and Cooperation and Ministry of Agriculture, Government of India. In accordance

with approved cropping pattern and agriculture production, the Benefit cost ratio works out to 1.45. The proposed cropping pattern is given as below:

<b>Sl. No.</b>	<b>Khariff</b>	<b>Area (Ha)</b>
a)	Hy. Maize	600 Ha
b)	Groundnut	3200 Ha
c)	Tur	3000 Ha
d)	Pluses	2400 Ha
	<b>Sub-Total</b>	<b>9200 Ha</b>
	<b>Rabi</b>	
a)	Local Jowar	1920 Ha
b)	Sunflower	1280 Ha
c)	Safflower	1600 Ha
d)	Pulses	1000 Ha
	<b>Sub-Total</b>	<b>5800 Ha</b>
	<b>Bi-Seasonal crops</b>	
a)	Cotton	1200 Ha
b)	Chillies& Vegetables	600 Ha
	<b>Total</b>	<b>1800 Ha</b>
	<b>Grand Total</b>	<b>16800 Ha</b>

The Scheme also intends to give more thrust to new areas of development such as participatory irrigation management and encouragement to modern irrigation practices for improving cropping intensity pattern (from 64% to 105%) and agriculture productivity etc., in drought prone area of Gulbarga District &Yadgir Districts, which have been accorded special status of most backward area under Article 371(J) of the Constitution of India by Government of India. This will improve the socio economic status through agriculture and agriculture dependent activities, fisheries production, communication, transportation facilities and infrastructure. Further, it will help to increase in green cover, landscape and bio diversity through aforestation and avenue plantation. It might also help to improve the ground water table and water quality in semi critical and critical zone of ground water.

Therefore, they explained that Lift irrigation has become a necessity in this area as the rainfall is not even supporting a single crop.

- By keeping the above facts in view, therefore the proposed scheme has been undertaken and the EIA/EMP study report of the project was submitted to EAC, MOEF for obtaining environmental clearance.

The ToR was issued by MoEF reference No.J-12011/17/2012-IA-I on dated 09-06-2014 for conducting EIA /EMP studies. The Public Hearing to fulfill the needs of the project and to address the concerns of local people was conducted 19.06.2014 and 07.07.2014. The brief description of EIA/EMP study report covering baseline environmental status is given below.

- It was informed that baseline environmental study for physical environment (Air, Noise, Water, and Soil), biological/ ecological environment and Socio-economic environment in and around the project area within 10 km radius including Command Area has been conducted to assess the existing status. The meteorological data collected from the region for temperature, humidity and rainfall. The annual rainfall is about 740mm. The Temperature in this region varies between 7.2° to 44°C. Humidity varies in the region during different seasons, the annual mean humidity during morning and evening hours is 68% (8.30 AM) and 44% (5.30PM) respectively. Ambient air quality values of SPM, RSPM, SO<sub>2</sub> and NO<sub>2</sub> parameters were found much lower than the applicable/ permissible limits. Similarly, Noise level was also monitored at different locations and found below the permissible limit of prescribed standards. The low level of air quality parameters and noise level is due to absence of any point source-polluting units, traffic density and presence of agricultural areas and village settlements.
- The water quality of Bhima river shows SAR value less than 10 which indicates that the water falls in the S1 category, very good for irrigation. However, the ground water falls under medium and high salinity class, where SAR ranges from 9.87 to 48.92 that may be due to drought prone area located in semi critical and critical zone of ground water.
- The project area is located in the very low damage risk Zone-II as per Seismic Zoning Map of India and no major earthquake is observed so far in the area. The most part of project site and command area (~94%) is nearly level to very gentle slope and having elevation of around 376.00 m above mean sea level. The rest part of command area (~6%) has gently sloping and undulating midlands and uplands. The geology of command area comprises of granitic gneisses which is covered with Deccan trap and thick mantle of black cotton soil and some places by red mixed soil. The common soil predominates is blackish to brown colored comprising of black cotton soils to clayey loam soils. The pH values are varying from 6.89 to 7.74 showing neutral only. Soil fertility also indicates low to moderate productivity that is due to low concentration of

nutrients and organic matter, which can be improved with nutrient supplementation and irrigation.

- Ecological / Biological environment with respect to existing status in the area of terrestrial ecology (forest types, floral and faunal accounts) and aquatic ecology covering fisheries, habitat structure and mitigation measures for fisheries has been assessed with respect to various project appurtenances. The Major forest types present in the study area are Southern tropical dry deciduous forest including dry deciduous scrubs and Southern tropical thorn forests with thorn scrubs types. Floral accounts in the region shows presence of total of 129 plant species belonging to 106 genera under 42 families. Out of which, 76 species of herbs, 29 species trees, 18 species of shrubs, 5 species of climbers and parasite with single species observed during different seasons. There is no much diversity in the wildlife found in Gulbarga and Yadgir districts except the Yadgir reserve forest – open scrubs type, situated in the command area. The common wildlife species in the forests are wolf, spotted deer, wild boar, hares, wild cats, langur, porcupine among mammals. Avi-fauna represented by total 65 birds species which belongs 33 families. Among them Peacocks, Partridges, Sparrow, Egret, Common Stilt, Asian Koel etc., are commonly observed. The data was also collected for reptiles as lizard, snakes etc., and insects as butterflies. A total of 42 fish species has been reported during primary survey conducted, interaction held with locals and information collected from secondary data. Among these, fishes from family Cyprinidae predominates and followed by Bagridae, Claridae, Channidae and Cichlidae. The common fish species are as Labeo, Mrigals, Catla, Puntius, Channa- Murrels and Bagarius species. The species of flora and fauna present in the area are found common in occurrence and falls under least concern category as per IUCN criterion.
- Socio-economic survey report of the study area shows that the literacy rate in rural areas is low to medium with lot of children seen working in the agricultural fields, although schools are available in almost all villages with other basic amenities such as primary health centre, Over head tanks, road connectivity etc., In submergence, one village namely Hurasagundagi of Shahapur taluka of Yadgir District will be fully affected, where as other four villages in submergence zone are partially affected. The fully affected population in Hurasagundagi village has 852 families belonging to 326 SC families, 55 ST families, 342 OBC families and 129 general families' categories. Keeping in view of fully affected and partially affected population, a detailed R

& R plan based on National Resettlement and Rehabilitation Policy (NPRR 2007/2013) has been prepared.

### **Public hearing :**

The minutes of Public Hearing conducted in the project area and issues raised by the local people addressed and resolved by the project proponent have been reported by Karnataka State Pollution Control Board. Some Commitments have also been made which will be fulfilled by Krishna BhagyaJala Nigam Limited.

The Sonthi LIS will have some impacts from water impoundment and accordingly mitigation measures in the submergence zone and canal excavation sites to be undertaken as per EMP. Over all, the project will have a positive impact on the land use/land cover, as provision of the irrigation facilities will give boost to the economic growth in the region.

### **Environmental management plan**

To mitigate the impacts of the project during construction and operation phase a comprehensive Environment Management Plan has been prepared and revised total capital outlay against EMP is Rs. 13140.70 lakhs (Rs.131.407 crores). The R & R plan will be implemented based on the confirmation from the Revenue department DC, whether any of the land owners have got Land Possessing Certificate or not. Similarly, provision of Local Area Development Fund under the state policy will be made under Local Area Development Plan with the consent of district authorities and Local Area Development Committee comprising of various stakeholders, however tentative provision of Rs. 100.00 lakhs (approximate 0.007% of the total project cost) has been made. During the EAC meeting, directions has been issued to the project proponent to include the cost of muck management plan a longitudinal bypass channel and fish passes / ladders and the same has been complied in the total cost of EMP and the revised EMP is given in the Table as below:

### Cost for Implementing Environmental Management Plan

Sl. No.	Item	Cost (Rs. lakhs)	
		Original	Revised as per recommendations of EAC
1.	Compensatory Afforestation and Bio-diversity Conservation	424.60	424.60
2.	Fisheries Management Plan (Fish Ladders/ Fish pass, and Bypass channel with habitat structures)*	<b>869.00</b>	<b>1200.00</b>
3.	Environmental Management in labour camp	244.40	244.40
4.	Public Health Delivery System	272.00	272.00
5.	Restoration and Landscaping of construction sites	243.20	243.20
6.	Greenbelt Development Plan	30.00	30.00
7.	Air and Water Pollution Control Measures	122.90	122.90
8.	Energy Conservation Measures	50.00	50.00
9.	Public Awareness Programmes	50.00	50.00
10.	Resettlement and Rehabilitation Plan	5430.00	5430.00
11.	Local Area Development Plan	100.00	100.00
12.	Catchment Area Treatment Plan	100.00	100.00
13.	Disaster Management Plan	210.00	210.00
14.	Environmental Audit Report, Monitoring and Compliances for Baseline environment (Physical and Biological Environment)	179.60	179.60
15.	Command Area Development and Water	4379.00	4379.00



	Management Plan (CADWM) including Micro Irrigation facilities (10% of ICA) *		
<b>16.</b>	<b>Muck Management Plan*</b>	-	<b>105.00</b>
	<b>Total</b>	<b>12704.70</b>	<b>13140.70</b>

**Note: - \* Revised cost and subject matter as per EAC recommendation.**

Command Area Development (CAD) and Water Management Plan (CADWMP) has been submitted and presented in the EAC meeting by the project proponent. As suggested, Micro Irrigation facilities, the year-wise breakup of activities to be undertaken and estimated cost (Revised) details are illustrated in the Table as under:

SL NO	COMPONENT OF CADWM PROGRAMME	AREA IN (HA)	UNIT COST AS PER CAD GUIDE LINE JUL.20 10	ESTIMATED COST (RS IN LAKHS)		CADWMP YEARWISE COST WITH ESCALATIONS @10% (RS.IN LAKH)		
				ORIGINAL	REVISED	1 <sup>ST</sup> YEAR (2014—15)	2 <sup>ND</sup> YEAR (2015-16)	3 <sup>RD</sup> YEAR (2016-2017)
1	Establishment	---	---	500.00	100.00	19.00	50.00	31.00
2	Survey Planning and Design	16,000	1,000/Ha	160.00	160.00	30.00	80.00	50.00
3	On farmed development activities	14400	15,000/Ha	2400.00	2160.00	450.00	1200.00	510.00
4	Field , Intermediate and Linked Drains	14400	4,000/Ha	640.00	576.00	120.00	320.00	136.00
<b>5</b>	<b>Micro Irrigation facilities*</b>	<b>1600</b>	<b>50000/Ha</b>	<b>-</b>	<b>800.00</b>	<b>-</b>	<b>200.00</b>	<b>600.00</b>
6	Reclamation of water Logging	200	40,000/Ha	80.00	80.00	-	32.00	48.00
7	Formation of WUCS'S	45 No's	500000/each	225.00	225.00	-	50.00	175.00

8	Project Federation	1 No	25 Lakh	25.00	25.00	-	-	25.00
9	Research Activities	---	---	25.00	25.00	-	10.00	15.00
10	Warabandi	16000 Ha	2000 / Ha	320.00	320.00	60.00	160.00	100.00
11	Softwareactivities namelytraining monitoring, evaluation, demonstration and adaptive trials.	5 Nos	80,000/ Each	4.00	4.00	0.80	1.60	1.60
<b>Total Rs:-</b>				<b>4379.00</b>	<b>4475.00</b>	<b>679.80</b>	<b>2103.60</b>	<b>1691.60</b>

**Note: - \* Revised cost and subject matter as per EAC recommendation**

A representation was received from SANDRP. A detailed response to various issues raised by SANDRP was placed before the EAC during the presentation. The point-wise clarifications given by Krishna BhagyaJala Nigam Limited are described in the Table as below:

<b>Sl. No.</b>	<b>Issue raised</b>	<b>Response</b>
1	We are dismayed to see that EAC is considering EC for Sonthi Lift Irrigation Scheme, whose barrage sits on the site visibly. The EIA being discussed still talks about "envisaging" construction of Barrage and "Options Assessment" for Barrage locations, ironically also stating that the "Barrage is complete" (Page 331). It is sad to see that MoEF did not take any firm action against this violation.	The barrage is already existing and part of the Sonthi Minor Irrigation Scheme. The Sonthi Lift Irrigation Scheme is further extension of the existing scheme. The word "envisaging".... and "Option Assessment" has been in context of extension of Sonthi LIS related to Canal networks. The text matter is corrected and subject matter has already been clarified to the MoEF.
2	There seem to other issues with this Project too: The	The draft EIA report in accordance with EIA

	<p>EIA uploaded on Karnataka Pollution Control Board in March 2014, ahead of Public Hearing which was initially to be held on 31/3/2013 was a different version than the one uploaded on MoEF&amp; CC Website now. We have the Screenshot and downloaded copies of that) and it is not clear which EIA Copy was made available during the public hearing. We would also like to point here that our colleagues have not received RTI Response or Certified EIA Copies of Sonthi Barrage EIA from Scientific Officer, River Valley Projects, although the RTI was forwarded to him by CPIO, MoEF on 14/8/2014, nearly 3 months ago.</p>	<p>notification 2006 was submitted to Karnataka State Pollution Control Board during December 2013.</p> <p>Because of the enforcement of the model code of conduct for "Parliamentary election" and "Graduate Constituency elections", the date of notification for "Public Hearing" have been postponed and finally conducted "Public Hearing" at Gulbarga and Yadgir District on 19/06/2014 and 07/07/2014 respectively. The draft EIA reports uploaded by KSPCB are made available at the time of public hearing. The issue related to RTI, was also discussed by the EAC itself and same is deferred to response, as not being custodian of the reports.</p>
3	<p>The original EIA was done by WAPCOS and was a shoddy and cut paste job. We had written to the Member Secretary about it. If WAPCOS EIA has been rejected, then the company needs to be blacklisted for unacceptable and cut-paste EIAs</p>	<p>The WAPCOS facilitated to the proponent for obtaining ToR stage only and there is no involvement in the EIA and EMP study.</p> <p>The EIA / EMP study reports of Sonthi LIS has been prepared by the Krishna BhagyaJala Nigam Limited (KBJNL), Government of Karnataka.</p>
4	<p>Name of the EIA Agency, Undertaking from the EIA Agency, QCI Accreditation of the EIA Agency is not displayed. Such EIA should not be considered by MoEF&amp;CC</p>	<p>The EIA and EMP reports of Sonthi LIS has been prepared by In-House Experts of KBJNL, Government of Karnataka. As such this plea is not tenable or maintainable.</p> <p>However, the Expertise services and technical supports has been taken by the KBJNL from various</p>

		<p>institutions/department/ persons such as Karnataka State Remote Sensing Application Centre, Water Resources Development Organization, Karnataka State Natural Disaster Management Centre, Karnataka State Pollution Control Board, State Agriculture Department, National Bureau of Soil Services and Land Use, Rehabilitation and Resettlement Commissionerate, APMC, State Forest Department (Chief Conservator of Forest, Mr. Vijay Sharma, IFS), Geo technical assistance from Senior Geologist, RDPR and Environment and Technical support by Dr. Harcharan Singh Rumana (Free lancer&amp; Director, GSSPL also NABET accredited through TUV SUD South Asia Ltd.,) for EIA / EMP study report, Preparation of Executive Summary and facilitation to presentation and compliance at MoEF etc., on behalf of KBJNL.</p>
5	<p>Grossly incomplete and shoddy EIA, for example, it says total of 852 families will be affected which have 942 people. So people per family are assumed to be 1.1 person!</p> <p>The Site Inspection Report submitted to MoEF&amp; CC states clearly that at least 3590 people will be</p>	<p>In the EIA report the total no. of families, persons and structures (houses) affected are clearly mentioned in page No. 264.</p> <p>The total No. of families affected : 852</p> <p>The total No. of persons affected : 3590</p> <p>The total No. of structures ( Houses, public buildings ) : 915</p> <p>As regard to the allotment of</p>

	<p>displaced.</p> <p>The EIA could not get even this most significant and crucial human angle correct. Such EIAs need to be rejected and EIA consultants blacklisted.</p>	<p>sites in the rehabilitation centre for Hurasagundagi village 942 persons belonging to 852 project displaced families including adult son and unmarried daughter have been considered. As such information furnished in the report is correct.</p>
6	<p>Despite MoEF pointing out the fact, the hydrology section is still sketchy "grossly inadequate" and of bare 2.5 pages.</p>	<p>In the EIA report a detailed note on hydrology is appended in Chapter 5 from page 45 to 47, wherein the input data, computation, tabulation and excel working sheets are enclosed vide table (1) to 24 (a) in Annexure - 2.4 (page No. 358 to 402). However, as per the instructions of MoEF, a comprehensive hydrological study report prepared by KBJNL hydrological experts has been submitted in a separate additional volume comprising 838 pages (write up, data, excel spread sheets, graphs and maps) dated 25.10.2014.</p> <p>The Hydrology sections related to project feasibility/viability is already given "In-Principle Approval" by Central Water Commission (CWC) Dated: 27.04.2012 and there is no question arises regarding inadequate information.</p>
7	<p>Public hearing minutes are not available in English.</p>	<p>Proceedings of Environmental Public hearing conducted in Gulbarga and Yadgir District are made available to MoEF by Karnataka State Pollution Control Board in English and regional language as well.</p>

A written reply has been also given to SANDRP by Krishna BhagyaJala Nigam Limited.

The EAC, after detailed deliberations and discussions, recommended Sonthi Lift Irrigation Scheme for according Environmental Clearance subject to the following conditions:

- I. All promises and assurances made by State Government during public hearing to be fulfilled in letter & spirit.
- II. R&R plan to be closely monitored and is to be ensured that all PAFs get adequate & timely compensation as per NPPR 2007 /2013 and state government norms whichever is more people friendly.
- III. 30% flow in monsoon season, 25% in lean season, and 20% in non monsoon and non lean season to be released towards environmental flow corresponding to 75% dependable year.
- IV. A suitable longitudinal canal / bypass channel incorporating habitat structures for free flow regime and connectivity for biota /fishes movement and sediment transport.
- V. Provision for fish ladder / fish passes at the barrage sites to ensure free flow and movement of aquatic life.
- VI. Muck disposal / measures to be implemented utilizing funds as earmarked in the management plan.

The meeting ended with vote of thanks to Chair

\*\*\*\*\*

**List of EAC members and Project Proponents who attended 79<sup>th</sup>  
Meeting of Expert Appraisal Committee for River Valley & Hydro  
Electric Power Projects held on 13<sup>th</sup>-14<sup>th</sup> November, 2014 in New Delhi**

**A. Members of EAC**

- |    |                     |   |                                   |
|----|---------------------|---|-----------------------------------|
| 1. | ShriAlokPerthi      | - | Chairman                          |
| 2. | Dr. P. K. Choudhuri | - | Member                            |
| 3. | Shri N. N. Rai      | - | Member                            |
| 4. | Shri B. B. Barman   | - | Member Secretary & Director, MoEF |
| 5. | ShriVinay Kumar     | - | Member                            |
| 6. | Dr. G. M. Lingaraju | - | Member                            |
| 7. | Dr. S. Sathya Kumar | - | Member                            |
| 8. | Shri G. L. Bansal   | - | Member                            |
| 9. | Dr. P. V. SubbaRao  | - | MoEF                              |

**B. Kalai- II HEP (1200 MW) Project in Anjaw District, Arunachal Pradesh By M/s . Kalai Power Pvt. LTD. For consideration of Environment Clearance (EC).**

- |    |                       |   |                           |
|----|-----------------------|---|---------------------------|
| 1. | Shri Deepak Gopalani  | - | Vice President            |
| 2. | Shri Ashok Kumar      | - | Vice President            |
| 3. | ShriBijan Mishra      | - | Vice President            |
| 4. | Shri B. K. Mishra     | - | General Manager           |
| 5. | Dr.Aman Sharma        | - | General Manager           |
| 6. | Shri B. J. Purkayas   | - | Additional Vice President |
| 7. | ShriUnnikrishan       | - | CA                        |
| 8. | Shri A. P. Singh      | - | Chief Engineer            |
| 9. | Shri Manoj G. Pradhan | - | Member                    |

**C. Rapum Hydroelectric Project (80MW) in West Siang District of Arunachal Pradesh by M/s Rapum Hydro Power Pvt. Ltd. (RHEP— For consideration of extension of ToR**

- |    |                        |   |                 |
|----|------------------------|---|-----------------|
| 1. | ShriGopiKrushnan       | - | Manager         |
| 2. | Dr.Aman Sharma         | - | General Manager |
| 3. | Shri P. V. Padmannadam | - | Consultant      |

**D. Jameri HEP (50MW) Project in West Kameng District, Arunachal Pradesh M/s KSK Jameri Hydro Power Pvt. Ltd.—For consideration of Extension of TOR**

- |    |                       |   |                     |
|----|-----------------------|---|---------------------|
| 1. | ShriSujit Kumar Datta | - | AVP                 |
| 2. | Shri C. S. Kasana     | - | Dy. General Manager |
| 3. | ShriTarakesh Swain    | - | Additional Manager  |

**E. Narmada MalwaGambhir Link Project MP Barwah, Sanwer, Ujjain, Depalpur, Ghatiya, Barnagar – For consideration of TOR**

**Not Coming**

**F. KanthanapallySujalaSravanthi Project in Waranagal District-For Consideration of Extension of ToR**

- |    |                            |   |                              |
|----|----------------------------|---|------------------------------|
| 1. | Shri Vijay Prakash         | - | Chief Engineer               |
| 2. | Shri Ashok Kumar Kadavendi | - | Assistant Executive Engineer |
| 3. | Shri M. Dharmareddy        | - | Senior Consultant            |

**G. 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**

**Not Coming**

**H. Chuzachen HEP in Sikkim by m/s GatiInfrastrurePvt. Ltd.- Consideration of Environmental Clearance (EC) for Capacity enhancement from 99 MW to 110 MW.**

- |    |                            |   |                         |
|----|----------------------------|---|-------------------------|
| 1. | ShriSanjeev Kumar Upadhyay | - | President               |
| 2. | Shri V. Krishnan           | - | Chief Operating Officer |
| 3. | ShriKishorKrumar Singh     | - | AGM                     |
| 4. | Dr. Aman Sharma            | - | General Manager         |
| 5. | ShriRakesh Sharma          | - | Senior Manager          |

**I. Dinchang HEP(252MW) in West KamengDistt. Arunachal Pradesh by KSK Binchang Power Co. Pvt. Ltd.-For consideration of Extension of validly of ToR**

- |    |                       |   |                     |
|----|-----------------------|---|---------------------|
| 1. | ShriSujit Kumar Datta | - | AVP                 |
| 2. | Shri C. S. Kasana     | - | Dy. General Manager |
| 3. | ShriTarakesh Swain    | - | Additional Manager  |
| 4. | Dr. Aman Sharma       | - | General Manager     |

**J. Killing Hydro Electric Project (55 MW) Assam Meghalya Border By M/s NEEPCO-For consideration of TOR**



- |                            |   |                 |
|----------------------------|---|-----------------|
| 1. Shri N. K. Mao          | - | General Manager |
| 2. Shri C. R. John Zeliang | - | Sr. Manager     |
| 3. Shri K. Deb             | - | Sr. Manager     |
| 4. ShriBilekKalita         | - | Sr. Manager     |
| 5. Dr.Aman Sharma          | - | General Manager |

**K. Dardu Hydroelectric Project in Papum Pare District of Arunachal Pradesh -change in installed Capacity from 60 MW to 49 MW & shifting of project component from left bank to right bank of the Pare river—For Consideration of Revised Scoping Clearance**

- |                             |   |                     |
|-----------------------------|---|---------------------|
| 1. Shri Kumar Arabolu A. N. | - | Executive President |
| 2. ShriNupesh               | - | Assistant Manager   |
| 3. ShriRavinder Bhatia      | - | Director            |
| 4. ShriArunBhaskar          | - | Director            |
| 5. ShriTapanMukhopadhyaya   | - | General Manager     |
| 6. Shri Deepak              | - | Senior Manager      |
| 7. Shri Rajesh              | - | Hydrologist         |

**L. Gimliang HEP (74 MW) in Anjaw District of Arunachal Pradesh- For amendment of ToR**

- |                           |   |                     |
|---------------------------|---|---------------------|
| 1. Dr. Harish Kumar Singh | - | Asst. Vice Chairman |
| 2. ShriRavinder Bhatia    | - | Director            |
| 3. ShriArunBhaskar        | - | Director            |
| 4. Dr. H. K. Singh        | - | AVP                 |
| 5. ShriPalamanjay         | - | General Manager     |
| 6. ShriGurdeep Singh      | - | Chief Manager       |

**M. Sonthi Lift irrigation Scheme in Gulbarga Distt. of Karnataka by Krishna BhagyaJala Nigam Ltd. Govt. of Karnataka-For consideration of Environmental Clearance (EC)**

- |                                |   |                         |
|--------------------------------|---|-------------------------|
| 1. ShriPramod Reddy Patil      | - | Chief Engineer          |
| 2. Shri Vijay Sharma (IFS)     | - | C. C. F.                |
| 3. Shri K. G. Mahesh           | - | Superintending Engineer |
| 4. Dr. Haricharan Singh Rumana | - | Fisheries Expert        |
| 5. Shri L. M. Naik             | - | AEE                     |
| 6. ShriVinay Kumar V.          | - | AE                      |
| 7. ShriManjunath H.            | - | AE                      |

\*\*\*\*\*