Draft minutes of the 8th Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects held on 22.09.2017 at Teesta Meeting Hall, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi–3.

The 8th meeting of the re-constituted EAC for River Valley & Hydroelectric Projects was held with the Chairmanship of Dr. Sharad Kumar Jain on 22.09.2017 in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, 1stFloor, Vayu Wing, Ground Floor, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi. The following members were present:

1.	Dr. Sharad Kumar Jain	-	Chairman
2.	Shri Sharvan Kumar	-	Representative of CEA
3.	Shri N. N. Rai	-	Representative of CWC
4.	Dr. Vijay Kumar	-	Rep. of MoES
5.	Dr. A. K. Sahoo	-	Representative of CIFRI
6.	Dr. R. Vasudeva	-	Member
~~7.~~	Shri Chetan Pandit	-	Member
8.	Dr. Poonam Kumria	-	Member
9.	Dr. D. M. More	-	Member
10.	Dr. S. Kerketta	-	Member Secretary

Dr. T.P. Singh, Dr. S.R. Yadav, Dr. J.A. Johnson, Dr. J.P. Shukla and Dr. Govind Chakrapani could not present due to pre-occupation. The deliberations held and the decisions taken are as under:

Item No. 8.0 Confirmation of minutes of 7th EAC meeting.

The Minutes of the 7th EAC (River Valley & Hydroelectric Projects) meeting held on 11.07.2017 were confirmed.

Item No. 8.1 Kynsi Stage-I (270 MW) in West Khasi Hills & South West Khasi Hills of Meghalaya, M/s Athena Kynsi Power Private Ltd. – **For consideration of Fresh TOR.**
Proposal No. IA/ML/RIV/67978/2017

The Project Proponent (PP) and the Consultant, M/s WAPCOS, Gurgaon and NEHU, Shillong, made a detailed presentation of the project and *inter-alia*, provided the following information:

Government of Meghalaya signed a Memorandum of Agreement (MOA) with M/s Athena Power Projects Ltd (APPL) (PP) on 11.12.2007, wherein PP has been entrusted to develop the Kynshi Stage I HEP. The PP has formed a SPV (Special Purpose Vehicle) namely Athena Kynshi Power Private Limited (AKPPL) as per terms and conditions of MoA for implementation of Kynshi - Stage I HEP. The MoA was amended on 11.02.2010. The project has been granted Concurrence by Central Electricity Authority (CEA) in March, 2015.

The Dam site is located at latitude 25°26'46.81"N and longitude 91°12'44.83"E on Kynshi river 3 km upstream of Nongmawpon village and about 25 km from Nongstoin, District Headquarters West Khasi Hills District. An underground Power House is located at latitude 25°23'34"N and longitude 91°08'46"E on Kynshi river near Nongummer village in South West Khasi Hills District and is about 65 km from Nongstoin.

Kynshi-I HEP (2x135 MW) has been contemplated as a ROR scheme with small reservoir capacity of 1.57 MCM situated in the West Khasi Hills district of Meghalaya. Dam site is located on River Kynshi, down streams of confluence of Umkyrtha River with Kynshi River. The Project will utilize a gross head of 581.00 m and design discharge of 54.86 cumecs for annual energy generation at 90% dependable year of 1078.22 million units (MU). The Project comprises a 58.10m high Concrete Gravity dam with a centrally located spillway comprising of five (5) NOF blocks and a centrally located Breast wall type Spillway having 5 bays each of size 8.50 m (w) x 11.00 m (h). All the bays have been provided with radial gates.

It is proposed to divert the Kynshi River during dam construction by using a 4.0 m diameter horse shoe shaped diversion tunnel of length 564.91 m on the right bank. The Water Conductor System (WCS) consists of an intake channel, which takes off from the left flank of the dam. The channel is 15.0 m high and has a base width of 5.0 m. The channel is designed to carry the design discharge in a slope of 1:824 over a length of 412.32 m. The intake channel feeds two surface de-silting basins of size 12.0 m (w) x 21.75 m (h) x 200.0 m (l). The de-silting basins will flush out the silt-laden water back to the river through flushing tunnels. The Head Race Tunnel measuring 4.5 m diameter horse shoe shape carries silt free water for power generation over a total length of 6,893.62 m. The headrace tunnel at its end has an 8.5 m diameter vertical simple surge shaft of over-flowing type of height 67.50 m. A 3.6 m diameter circular pressure shaft of length 1,855.29 m with a vertical shaft of 453.11 m takes water from the surge shaft to an underground powerhouse for power generation. The underground powerhouse complex comprises Machine Hall cavern and transformer-cum draft tube gate cavern. The machine hall (power house) cavern will be of 86.78 m (l) x 21.0 m (w) x 42.50 m (h) and will have 2 units of vertical axis Pelton turbines, each of 135 MW. The 166.66 MVA generator transformers (GT) and 420 kV Gas Insulated Switchgear (GIS) will be accommodated in a separate transformer cavern located 42.50m downstream of powerhouse cavern. The overall size of transformer cavern is 85.98 m (l) x 16.0 m (w) x 28.0 m (h). Main Access Tunnel (MAT) shall be of 8.0 m diameter, 1,369.28 m long to provide access to power house and transformer caverns. Two tail race tunnels of 7.6x5.0 m size of rectangular channels of length 42.50 m from draft tube to the gate and 5.25 m diameter horse shoe shaped tunnels till the junction of the two tail race tunnels. One 5.25 m diameter horse shoe shaped tunnel of length 2500.0 m from the junction point to outfall at left bank of Kynshi river. The generated energy will be pooled to CTU (Central Transmission Utility) designated pooling point through one dedicated 400 kV DC Transmission Line.

The catchment area up to the dam site has been estimated to be 615.4 km^2. The catchment falls between latitude $25^0$21'48"N to $25^0$36'15"N and longitude $91^0$12'12"E to $91^0$42'26"E. Long term rainfall data since 1980 is available at one station viz. Nongstoin only. The Long term run off series for Kynshi Stage- I Hydro Electric Project was formulated and the methodology and the series was cleared by CWC vide letter No. CWC No. 2/MEG/05/CEA/08-PAC/963-65 dated 08.02.2012. Based on the water availability series cleared by CWC, the 90% dependable year is 2006-07 and based on this, Power Potential studies have been carried out for the Project.

Since, the hydraulic head in case of Kynshi Stage I HEP is more than 30.0 m, accordingly it has been design to safely pass the probable maximum flood. The value of design flood is estimated to be 6,283cumecs. In view of the above, conservative value of design flood of 6,885 cumecs has been adopted and the design flood studies have been examined by CWC and design flood of 6,885 cumecs has been approved by CWC vide letter No. 2/MEG/05/CEA/08-PAC/5813-15 dated 18.07.2011.

A total of 246.71 ha of land to be required for the project. The detailed legal status of land to be acquired is not known. There is no National Park, Wildlife Sanctuary or nature/biosphere reserve within or in close proximity to the Project area of Kynshi Stage I HEP. Trees and shrubs are present in the proposed submergence area. Human settlements containing dwellings, houses or hamlets are scanty in the submergence area and in the location of project components. However, Relief & Rehabilitation measures to be adopted shall be in line with the established policies and norms of relevant authorities.

The project cost is estimated to about Rs. 2,020.47 Crores at September 2014 price level and the completed cost is about Rs. 3154.38 Crores. Kynshi Stage-I Hydro Electric Project shall be completed in 60 months time with the first unit to be commissioned at the end of the 59th month and the subsequent unit in the 60th month. The 1st year tariff and levelised tariff have been worked out to be Rs. 7.96 kWh and Rs. 7.16 kWh, respectively.

After deliberations and considering all the facts of the project as presented by the PP, the EAC ***recommended* for grant of scoping clearance/ToR** for the proposed project with the following additional conditions along with standards ToR:

i. The legal status of land is to be submitted including proof of application for diversion of forestland for non-forest purpose within three months from the date of grant of ToR, to the Ministry.
ii. Provision of e-flow as per standard ToR should be ensured for the sustenance of aquatic life in the downstream river.
iii. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
iv. Information on species composition in particular to fish species from any previous study/literature should be included.
v. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
vi. Resettlement & Rehabilitation Plan – should be implemented in collaboration with the State Govt. as approved by the State Govt.
vii. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their appropriate engagements in the Project.

Item No. 8.2 Kaith Medium Irrigation Project (CCA 5,135 ha), Water Resources Department, Govt. of Madhya Pradesh - **For consideration of Fresh TOR.** Proposal No. IA/MP/RIV/67810/2017

The Project Proponent (PP) made a presentation of the project and *inter-alia*, provided the following information:

Kaith Medium Irrigation Project was started with a view to construct storage reservoir across Kaith River, a tributary of Sonar River in Dhasan-Ken Basin in the block Rehli of Sagar District. The project is planned to irrigate 5,135 ha of land with annual irrigation potential of 5,135 ha. It is a Category "B" project, but as the SEIAA in the state is not in operation, it is being appraised at Central level for grant of ToR.

The Kaith Gravity Dam is situated near Village Hanouta Khurd in Tehsil Rehli of District Sagar in Madhya Pradesh at Latitude $23^0$40'35"N and Longitude $78^0$55'25"E.The Kaith gravity dam is of length 600 m. The central concrete spillway is of 41 m long having capacity to pass the flood discharges of 1,164 Cumecs and routed flood discharge of 850.724 Cumecs. 3 Nos. of Radial gates of size 10×6m are proposed over the crest level and one will be standby. Non-over flow dam is 15.00 m on left and 15.00 m on right flank with maximum height 13.40 m above foundation. Similarly, another dam viz., Narayan storage earthen dam on Jharo nallah shall be constructed. The dam height is 18.14 m and length is 240 m. One Narayanpura subsidiary bund of height 14.21 m and length of 660 m has been proposed. Another Hanouta Khurd subsidiary bund has been proposed of height 7.16 m and length 630 m.

It has been further submitted that the irrigation development of Sagar district is below the state's average figure. Crop cultivation is totally dependent on rainfall and on the vagaries of monsoon. Providing irrigation will improve the economic condition of the farmers and result in efficient utilization of soil and water resources of the region. State and region are experiencing erratic rainfall, which has further worsened the situation. Fertile land is available in Rehli Tehsil where reliable irrigation system can make a great difference and yield of crop may increase many fold. Thus, this will result in overall development of the region. Also, during summer season, the ground water table goes deep and the region suffers from the acute shortage of drinking water. Creation of water bodies and developing irrigation systems in the region will result in the recharge of groundwater and improvement in ecology and will have a great positive impact on the environment and wildlife of the region.

The catchment area of the Kaith Gravity Dam is 78.50 km^2. The Submergence area for Kaith gravity dam at FRL is 450.18 ha (Govt. land: 48 ha, Private land: 322.268 and Forest land: 79.912 ha). By considering the upstream, downstream uses, proposed irrigation demand and water for domestic and industrial use and sediment storage, etc. the gross storage of the Kaith gravity dam shall be 22.117 MCM. The live Storage capacity of the Kaith gravity dam is 21.967 MCM out of which 1 MCM is reserved for drinking water. The total utilization for the 75% dependable year (2004-05) shall be 20.967 MCM for irrigation and 1 MCM for drinking and industrial uses.

The estimated cost of the project is Rs. 162.47 crores. The project shall be completed in 24 months. The cost per hectare on CCA is Rs. 3.164 Lakhs and cost per hectare on annual irrigation is Rs. 2.38 Lakhs with a B.C. Ratio of 1.65. It will generate employment potential during construction period. 346 Nos. persons from 142 families in 3 villages are affected due to the project.

After deliberations and considering all the facts of the project as presented by the PP, the EAC ***recommended* for grant of scoping clearance/ToR** for the proposed project with the following additional conditions along with standards ToR:

i. A certificate will be submitted from CWC that utilization of water by this project will not affect the viability of the Ken-Betwa Link project, within six months from the date of grant of ToR.
ii. Provision of e-flow as per standard ToR should be ensured for the sustenance of aquatic life in the downstream river.
iii. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
iv. Total power requirement to be provided and its firm linkage to be supported with documents.
v. Proof of application for diversion of forestland for non-forest purpose will be submitted to the Ministry within one month.
vi. Detailed information on species composition in particular to fish species from any previous study/literature should be included.
vii. A detailed irrigation management plan should be worked out so that at least 10% of the CCA would be covered by micro irrigation scheme.
viii. Resettlement & Rehabilitation Plan – should be implemented in collaboration with the State Govt. as approved by the State Govt.
ix. Energy Conservation Plan is to be implemented as envisaged in the EIA / EMP report.
x. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their appropriate engagements in the Project.
xi. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
xii. The possibility of conjunctive irrigation may also be considered in the project right from the formulation stage. A detailed irrigation management plan should be worked out so that mixed irrigation (lift and flow) scheme be taken up to reduce power consumption with water account.

Item No. 8.3 Extension, Remodeling and Modernization of Kosi Canal System, Rampur district, Utter Pradesh by M/s Water Resources Department, Government of Utter Pradesh –**for Fresh TOR**

The Project Proponent (PP) and the Consultant, M/s Enviro Infra Solutions Pvt. Limited, Ghaziabad, made a presentation of the project and *inter-alia*, provided the following information:

The project is for extension /remodeling /modernization of Kosi canal system taking off from Lalpur weir across Kosi river in Rampur district of Uttar Pradesh and is under jurisdiction of the Irrigation Department, Uttar Pradesh. Built in 1895, by the then Nawab of Rampur, it encompasses a 272m long weir structure on well foundation for diverting water into Kosi canal by means of falling wooden shutters. The canal, authorized head discharge 400 cusec,

comprises of 197.63 km long distribution system to cater to CCA of 24,250 ha with annual proposed Kharif and Rabi being 15% and 12%, respectively. The irrigation intensities were subsequently raised to 32% and 25% during 1975 when the supplies were augmented from Tumariya dam through Bhalla-Kosi Feeder to the tune of 250 cusec. A single lane steel road bridge, connecting to Tanda, was subsequently added to the weir in 1932.During 1988 the piers of few bays of the weir developed serious cracks since then the bridge has been closed for heavy vehicular traffic. The road bridge on the weir is vital lifeline between Rampur to Tanda. The falling shutters, which invariably drop during first flood during July, also lower the pond level and consequently render the weir unable to divert the required/authorized discharge into canal and the system does not get sufficient water for Kharif irrigation, although the flow passes over the crest to the downstream without being diverted. The shutters are again enacted only after monsoon during October when river supplies are low and water becomes available in canals. Thus, Rabi irrigation is also adversely affected.

Against the irrigation intensities of 32% and 25% during Kharif and Rabi, respectively, an average Kharif and Rabi potential achieved is 6,184 ha (26%) and 5,825 ha (24%), respectively. Being more than122 years old and after having withstood the on-slaught of fury of historical floods in 1924 (0.94 lakh cusec), in 1947 (0.69 lakh cusec) and 2010 (1.278lakh cusec) and many flash floods, the weir had been under severe stress with its few bays, wells and downstream floor getting scoured, damaged and cracks have appeared in the downstream floor and piers and frequent boiling was encountered in the downstream bays. Damages observed from1969 revealed that the structure of Lalpur weir has outlived its useful life because some of the damages cannot be repaired and are of permanent type. Therefore, immediate construction of a new replacement barrage on the downstream was vehemently and urgently required to obviate any unfortunate situation of the sudden failure of the structure, thereby dislodging altogether the irrigation facilities in the command area of the age old system and leaving the farmers hapless. The maintenance of the old weir had become quite costly proposition and the danger of its collapse was looming large. In the wake of aforementioned technical grounds and to ward of the most frightening exigency of the irrigation system being severely affected, it is, judicious and prudent to construct a new barrage on war footing in lieu of more than century old weir well in advance before any calamity happens.

The old weir had been in precarious condition for long and its sudden washing out would have created damage to the downstream, therefore, it has been dismantled in the year 2016 in a scientific and phased manner except for the wells which are below the riverbed level. The single lane bridge has also been razed to the ground and the work of construction of a new bridge at the same site by the PWD is in progress. The canal is being run by creating a temporary bund for diverting the water and shall be fed so till the ongoing work of diversion barrage on downstream, in such emergent situation, is completed. The project envisages construction of replacement barrage and appurtenant works in lieu of age-old Lalpur weir, which has been dismantled now. It also involves remodeling of canal and distribution system to cope of with the increase in discharge from 400 cusecs to 600 cusecs, with increase in FSL at existing head regulator from 194.127 m amsl to 194.600 m amsl, and by adopting to strengthening of banks and lining of bed and sides of canal and

distributaries. Due to remodeling/modernization of canal and distribution system the existing irrigation intensities of 32% (7,760 ha) and 25% (6,063 ha) during Kharif and Rabi, respectively shall be increased to 55% (13,337 ha) and 35% (8,487 ha), respectively. The ERM project shall comprise of the following components:

- 352.02 m long gated barrage comprising of two under sluices on left and right flank each with two bays of 18m width with crest level 191.25 m amsl and gate size18x5.35 m; 13 barrage bays of 18 m width each with crest level at 191.25 m amsl, with gate size18x4.35m, designed for PMF (5,313 cumec).
- A fish ladder (1.5x1.5 m) in the left side divide wall.
- Left bank head regulator with two bays of 3 m each separated by 1.5 m wide pier with overall waterways of 7.5 m designed for 600 cusecs (16.98 cumec).
- Right bank head regulator for 150 cusecs, for irrigating command on right bank in future, shall be concurrently constructed to obviate construction complexities in future.
- Guide bunds with top width 6m and side slope 2:1, with river face pitched with 0.5 m thick paneled boulder pitching over 0.15 m sand over geo-synthetic sheet with toe wall having 3rows of boulder filled G.I. wire crates (1.5x1.5x0.9 m) shall be provided.
- The existing Lalpur-Roohella bund on left flank shall function as left afflux bund. However, right afflux bund with top width of 8 m and side slope 2:1, shall be provided as double lane approach road.
- Construction of link canal (5 km) from left head regulator with canal bed level at head193 m amsl.
- C.C. (M-15) cast in-situ lining, over PCC laid on HDPE sheet, side and bed in full length of link channel and selective reaches of Upper Kosi canal, Lower Kosi canal, Khandia dy., Bagi dy., Param dy. And Patwai dy. shall be provided in 5.0, 5.9, 5.9, 8.2, 5.7, 2.23 and 7.3 km, respectively.

For construction of the new headwork and appurtenant works, afflux bunds at Nabiganj village, about 147.36 ha land will be required of which 119.85 ha shall be acquired from private owners and balance 27.51 ha shall be the revenue land. No diversion of forestland is involved. No archaeological monument of national importance either lies in the project area or in its submergence area. No National Park, Sanctuary, Defense Establishments, Archeological Monuments, Notified Eco-sensitive areas or protected area under Wildlife (Protection) Act exist within the project area or within 15 km distance from it. The water requirement (100 kld) for construction shall be mainly met from the river water and the domestic/drinking water from underground sources from nearby private tube well. The total raw material requirement for coarse and fine aggregate and boulder comes to 0.61 lakh cum, 0.37 lakh cum and 0.32 lakh cum, respectively, which shall be met from the approved stone crushers in nearby areas. About 200 persons shall be employed during peak construction phase. The project is likely to be completed in time frame of three years.

The competent authority has accorded technical sanction of INR 23,631.77 lakh to the project, while during appraisal the EFC has accorded sanction for Rs. 21,635.90 lakh only. Therefore, in pursuance of philosophy behind the EIA Notification, dated 14.09.2006 and its subsequent amendments, it is

imperative to bring the ERM project, an infra-structure project for irrigation of command of age-old Kosi canal system, which used to take off from old Lalpur weir which has been dismantled now, in compliance with the environmental laws at the earliest.

After deliberations and considering all the facts of the project as presented by the PP, the EAC ***recommended* for grant of scoping clearance/ToR** for the proposed project with the following additional conditions along with standards ToR:

i. As the proposed project is for extension, remodeling and modernization of existing Kosi Canal System, at least two seasons (including monsoon season) base line data shall be collected for various environmental parameters for preparation of the EIA/EMP report.
ii. As the barrage is 5 m height with minor pondage, dam break analysis of the barrage is not required.
iii. Provision of e-flow should be ensured for the sustenance of aquatic life in the downstream river.
iv. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
v. Total power requirement to be provided and its firm linkage to be supported with documents.
vi. Information on species composition in particular to fish species from any previous study/literature should be included.
vii. The possibility of conjunctive irrigation may also be considered in the project right from the formulation stage. A detailed irrigation management plan should be worked out so that mixed irrigation (lift and flow) scheme be taken up to reduce power consumption with water account.
vi. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.

Item No. 8.4 Palamuru Rangreddy Lift Irrigation Scheme, CAD and Irrigation Department, Government of Telengana, Telengana – **for fresh Scoping clearance**

The Project Proponent (PP) and the Consultant, M/s Voyants Solutions Pvt. Ltd, Gurgaon, made a presentation of the project and *inter-alia*, provided the following information:

The erstwhile Mahabubnagar, Rangareddy and Nalgonda Districts of Telangana State are the worst drought prone and distressed areas in the country. There is tremendous shortage of drinking water, as these areas are infested by fluoride. As a result, a large part of the population of the districts is being forced to migrate to other part of the country. In order to redress this situation, the Government of Telengana has taken up the Palamuru-Rangareddy Lift irrigation Scheme (PRILS) for alleviation the misery of these drought prone areas.

PRLIS is one of the foremost and largest welfare scheme being under taken by the Government to supply clean, potable water to the upland areas of Mahabubnagar, Rangareddy and Nalgonda districts by utilizing excess flood

water. The scheme in its first phase envisages lifting of 90 TMC of floodwater in 60 days during the flood season from the fore shore of the Srisailam project on Krishna river at Yellur (Village), Kollapur (Mandal) in Mahabubnagar (District) through five separate stages ending at K.P. Laxmidevipally (Village), Kondurg (Mandal) near Shadnagar town at the highest elevation. These five stages each comprise of a reservoir and conduit between each reservoir for taking the water forward with pump house being constructed wherever necessary. Water will then be drawn from selected reservoir through a separate canal and pipeline distribution network.

In view of the situation explained above, the scheme has been planned in two phases: Phase-I (Water supply project) and Phase-II (Irrigation project). The Phase-I project has been planned with 6 Nos. of reservoir and 5 Nos. of lifts for basic human consumption.

The immediate purpose for the project is to provide water for drinking and industrial uses to the enroute villages and Hyderabad city. Therefore, the 1st Phase of Palamuru-Rangareddy Lift irrigation Scheme envisages to provide drinking water facilities to enroute 1,428 villages in 74 mandals of Mahabubnagar, Rangareddy and Nalgonda district, Hyderabad city and water for industrial uses in Mahabubnagar, Rangareddy and Nalgonda districts by constructing approach channels, open channels, tunnels, pump houses and reservoirs by lifting 90 TMC of flood water in 60 days during flood season (i.e. 1.5 TMC of water per day) from foreshore of Srisailam reservoir located at Yellur (village), Kollapur Mandal in Mahabubnagar district which is the highest elevation in Mahabubnagar and Rangareddy districts with 5 stages of lifting and then utilizing water by gravity. Since, the water supply project does not fall under the purview of environmental clearance of EIA Notification, 2006, thus the project work has been initiated to resolve the drought situation on an immediate basis.

In 2nd phase, canal network will be developed from the reservoirs to create irrigation to up land areas of Mahabubnagar, Rangareddy and Nalgonda districts for an ayacut of 4.97,976 ha. Later on, this stored water shall be used for irrigation purposes in various districts through a network of canals. This irrigation project (Phase-II) is Category "A" of River Valley Projects under the provisions of EIA Notification, 2006. In addition to the drinking water facility, it is proposed to irrigate in 4,97,976 ha of CCA in the districts of Mahabubnagar, Rangareddy and Nalgonda. A total of 15,790 ha land (detailed legal status of the land on each category has not been provided) will be acquired for construction various canals network, reservoir, temporary labourers colonies, etc. No forestland is involved in the proposed project. During construction of the project, 2,700 KLD of water shall be consumed for both construction and drinking purposes and shall be drawn from surface body and groundwater. 2,944 MW of electricity will be required and M/s Telengana State Southern Power Distribution Company Limited (TSSPDCL) shall supply the same.

The Govt. of Telengana has accorded the administrative approval vide letter dated 10.06.2015 to both the projects i.e. Phase-I and Phase-II for Rs. 35,200 crores. The project is likely to be completed in 30 months including the pre-construction activities. Considering all the benefits and costs incurred on all components of the project, the BC Ratio works out to be 1.23.

After deliberations and considering all the facts of the project as presented by the PP, the committee had the concerns about Techno-Economic Viability of the project. However, the EAC ***recommended* for grant of scoping clearance/ToR** for the proposed project with the following additional conditions along with standards ToR:

i. The scheme in its first phase envisages lifting of 90 TMC of floodwater in 60 days during the flood season from the foreshore of the Srisailam project on Krishna river at Yellur village through five separate stages, ending at K.P. Laxmidevipally village. Therefore, water availability analysis at Yelluru village (point of drawl) during monsoon season is to be submitted to ascertain sufficiency of water available.
ii. As the area is on fluoride affected zone, therefore, provisions should also be made to recharge the groundwater through proposed reservoirs to dilute fluoride levels.
iii. Groundwater be treated for removal of fluoride and then the treated water be supplied to the villagers for drinking purposes.
iv. Provision of e-flow should be ensured for the sustenance of aquatic life in the downstream river.
v. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
vi. Though, total power requirement has been provided, but its firm linkage is to be supported with documents.
vii. Proof of application for diversion of forestland for non-forest purpose will be submitted to the Ministry within one month, if any.
viii. Information on species composition in particular to fish species from any previous study/literature should be included.
ix. The clearance from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, as applicable.
x. Wildlife Conservation plan be prepared for the area located within the project and implemented by the project proponent in consultation with the State Forest Department. Wildlife Conservation plan also to be prepared for the impacted area due to construction of the project falling outside the project area and implemented by the local state Forest Department.
xi. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
xii. Resettlement & Rehabilitation Plan should be implemented as per the prevail guidelines of the Govt. of India .
xiii. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their appropriate engagements in the Project.

Item No. 8.5 Satdharu Medium lift irrigation project, Government of Madhya Pradesh – **For fresh ToR**

The Project Proponent (PP) made a detailed presentation of the project and *inter-alia*, provided the following information:

Satdharu Medium Tank projects proposed on river Satdharu, a tributary of river Byarma which finally joins river Ken. The Ken river is a tributary of

Yamuna river. The project is situated in Damoh block, Damoh district head and is 20 km away from the district headquarter at Latitude 23^{0}42'36''N and Longitude 79^{0}27'12"E.

The Satdharu dam envisages construction of 24.80 m high and 755 m long earthen dam including 64.5 m long side channel spillway on river Satdharu near village Badyau of Damoh district of Madhya Pradesh. It is designed to store 63.03 MCM lives storage of water to provide irrigation in 7,555 ha of CCA through a well-planned network of pressurized pipe irrigation network with an irrigation intensity of 100%. The project is located about 4.5 km distance from Noradehi Wildlife Sanctuary and therefore, it attracts General Condition of EIA Notification, 2006. Thus, it is categorized as Category "A" project.

Provisions of 3.00 MCM for upstream use, 24.03 MCM for Irrigation and 26.46 MCM for domestic water supply for Damoh and adjacent villages have been planned for this project. 9.54 MCM is taken for evaporation losses. There is no intercepted catchment area at Satdharu Dam site and full catchment i.e. 145.68 km^2 entirely lies in the State of Madhya Pradesh.

The total land of 11290.63 ha shall be submerged at FRL, of which Forestland is 969.19 ha, Culturable land is 117.92 ha, Un-culturable land is 176.85 ha and Revenue land is 26.67 ha. The cost of the project is Rs. 315.65 crore. B.C. ratio is 1.41. During construction of the project, 25 technical personnel and about 100 contractual labourers shall be employed. Total power consumption during construction shall be about 4.350 MW. A total 76 families from 4 villages will be rehabilitated due to this project.

After deliberations and considering all the facts of the project as presented by the PP, the EAC ***recommended* for grant of scoping clearance/ToR** for the proposed project with the following additional conditions along with standards ToR:

i. A certificate will be submitted from CWC that utilization of water by this project will not affect the viability of the Ken-Betwa Link project, within six months from the date of grant of ToR.
ii. Provision of e-flow as per standard ToR should be ensured for the sustenance of aquatic life in the downstream river.
iii. Though, total power requirement has been provided, but its firm power linkage to be supported with documents.
iv. Detailed information on species composition in particular to fish species from any previous study/literature should be included.
v. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
vi. Proof of application for diversion of forestland for non-forest purpose will be submitted to the Ministry within one month.
vii. Wildlife clearance is to be obtained from the Competent Authority as per the Wildlife (Protection) Act, 1972, as applicable.
viii. Wildlife Conservation plan be prepared for the area located within the project and implemented by the project proponent in consultation with the State Forest Department. Similarly, wildlife Conservation plan is also to be prepared for the impacted area due to construction of the project falling outside the project area and implemented by the local state Forest Department.

ix. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
x. Resettlement & Rehabilitation Plan should be implemented as per the prevail guidelines of the Govt. of India.
xi. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their appropriate engagements in the Project.
xii. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
xiii. The possibility of conjunctive irrigation may also be considered in the project right from the formulation stage. A detailed irrigation management plan should be worked out so that mixed irrigation (lift and flow) scheme be taken up to reduce power consumption with water account.

Item No. 8.6 Rongnichu Hydroelectric Project (96 MW), East Sikkim, district Sikkim by M/s Madhya Bharat Power Corporation Ltd - **for reconsideration of Extension of Validity of Env. Clearance** Proposal No. IA/SK/RIV/10100/2006

The project was considered by EAC in its meeting held during 2-3rd March, 2017. The Project Proponent (PP) and the Consultant, M/s Pollution and Ecology Control Services, Nagpur, made a presentation of the project for an extension of validity of Environmental Clearance (EC) and *inter-alia*, provided the following information:

The proposed proposal envisages construction of 14 m high barrage on Rongnichu river (tributary of Teesta river) near Namli village in the district of East Sikkim, Sikkim state having Installed Capacity of 96 MW. This is a run-of-the river scheme. The EC was accorded on 04.04.2007 for a period of 10 years as per the provisions of EIA Notification, 1994 and 2006. The compliance status of the conditions stipulated in EC dated 04.04.2007 for Specific & General Conditions was presented in detailed along with present status of the project with the reasons for delay in its completion within the validity of EC.

The project proponent explained that the land acquisition; obtaining other mandatory clearances including Forest Clearance (FC), etc. and various pre-project activities like financial closure, award of contracts and building road & other infrastructures in mountainous terrain, etc. also took considerable time. Thus, there has been an initial delay of more than 3 years to start the actual construction work after obtaining the EC in April 2007. Further, during excavation of tunnel, extremely poor geology was encountered, this and other geological difficulties of lower Himalayan region resulted in slower pace of work.

The PP further assured the committee that problems have now been over-come and presently, the work is progressing smoothly in all fronts without any hindrance. About 85% underground excavation work and about 50% of concreting work is complete. Electro Mechanical (Power House) and Hydro-Mechanical (Barrage) & Steel lining will commence in April-June, 2017 and it was further mentioned that they are confident of meeting the Scheduled Commissioning date of December 2018 as approved by the Government of

Sikkim. After detailed deliberations and considering all the facts of the project as presented by the PP along the Consultant, the EAC observed that the minor deviations encountered while taking up the project and it may not be treated as violation. It was informed to the EAC that as per OM dated14.09.2016, a provision of 3 years of extension of validity in case of River Valley & Hydroelectric Power Projects exists.

During appraisal, the Committee observed that the request made by project proponent for validity of extension of EC appears to be reasonable, since the 85% of the underground excavation work and 50% concrete work is complete and the remaining works will be initiated during April-May, 2017, the EAC recommended for extension of validity of EC initially for a period of 6 months in order to facilitate the PP to submit compliance and monitoring report from RO, MoEF& CC, Shillong. Based on the report, the extension for remaining2 $^{1}/_{2}$ years could be granted. Accordingly, the Ministry granted 6 months extension of the validity of EC on 16.6.2017.

The PP submitted the monitoring report by RO, MoEF, Shillong (site inspection conducted on 11-12th August, 2017); modified application Form-I and six monthly compliance status report (for the period 1.1.2017 to 30.6.2017) on EC conditions granted for the project. During appraisal the Committee observed that the point-wise compliance conditions as reported by the RO, Shillong, MoEF& CC is found to be satisfactory. Further, now 85% of the underground excavation work and 50% concrete work is complete and the remaining works will be initiated during April-May, 2017. The balance work would now be completed in remaining 2½ years.

After deliberations and considering all the facts of the project as presented by the PP based on the monitoring report on the status of compliance of EC conditions submitted by the Regional Office, MoEF&CC, Shillong. The EAC ***recommended* for grant of** extension of the validity of EC for the remaining 2½ years with the following additional conditions:

i. Till the Primary Health Centre are established, a mobile van be provided. It will be equipped with medical health care facilities so that the people of Namil and Namchiong villages would transfer their patients to the nearby District Health Care Centers.
ii. A plan be prepared with a time-bound implementation programme (both Engineering and biological measures) for stabilization of inactive muck disposal sites and submitted to the Ministry and its Regional Office, Shillong.
iii. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.

Item No. 8.7 Basaveshwara Lift Irrigation Scheme in Belagavi District of Karnataka by Karnataka Neeravari Ltd., Government of Karnataka - **Reconsideration of Env. Clearance**
Proposal No. IA/KA/RIV/63339/2015

In earlier meeting of EAC held on 12.04.2017, the Project Proponent (PP) and the Consultant, M/s Health and safety Consultant, Bengaluru had made a presentation of the project and *inter-alia*, provided the following information.

The project involves lifting of 4 TMC water from Krishna River in Belgaon District to provide irrigation facility to 27,462 ha benefiting 22 villages Kharif season. The 2. 5 TMC of water is proposed to draw through an intake canal for a length of 1.25 m on Krishna River near old Ainapura village in Athani Taluka, which is 20 km away from Athani town. Thereafter, water is to be pumped to the delivery chamber through MS rising main of 15.9 km long. The project has two major gravity canals viz. south canal of 3.68 km long to irrigate 1313 ha & North canal of 59.92 km long to irrigate 26,149 ha. The total land requirement is about 420 ha. No submergence is envisaged in the project. Interstate boundary with Maharashtra is located at a distance of 1 km from the boundary of the command area. The estimate project cost is about Rs. 1,120 Crores.

The Scoping/ToR clearance was granted on 17.11.2015 for a period of 3 years. The Public Hearing was conducted in Ainapur village, Athani Taluk, Bagalkot District on 10.2.2017. PP informed that all the issues raised during the Public Consultation have been incorporated in the EIA/EMP report. The socio-economic impact assessment was carried out separately and report was also submitted. Thereafter, the final EIA/EMP reports were submitted to the Ministry for environment clearance.

The project was earlier considered by EAC in its meetings held on 12.04.2017 and 24-25th August, 2017. The various environmental aspects covering catchment area, submergence area and project influence area, i.e. area within 10 km radius from main project components have been considered. The baseline data has been collected covering Physico-chemical aspects, biological aspects and socio-economic aspects. Three seasons' data have been collected for air, noise, water, soil and ecological aspects. Impacts during construction and operation phases have been assessed and mitigation measures suggested minimizing the anticipated impacts. The EMP has been prepared based on predicted impact, actual requirement and incorporating suggestions of local people, stakeholders with the details as under:

Table: Cost estimates for implementation of EMP

Sl. No.	EMP heads	Cost (Rs. in lakhs)
A.	**Construction Phase**	
1.	Air Pollution Control	26.00
2.	Noise Pollution Control	0.50
3.	Water Pollution Control	1.50
4.	Solid &Hazardous Waste Management	3.00
5.	Greenbelt Development	243.77

6.	Agro Forestry Activities	27.46
7.	Fisheries Development	10.00
8.	Socio-economic Environment	9395.00
9.	Environmental Monitoring	55.40
10.	Implementation of CAT plan	968.00
B. Operation Phase		
10.	Environmental Monitoring	11.52
11.	Greenbelt Maintenance	30.00
	Total	10,772.15

After detailed deliberations and considering all the facts of the project as presented by the PP, the EAC sought additional information and PP submitted the compliance report and the same and has been presented during 7th EAC meeting held on 24-25th August, 2017. The EAC satisfied with the report, however, EAC opined that the PP constructing a project from his own funds results in avoidance of examination by the CWC for hydrology, and for interstate aspect. Vetting by CWC for these two aspects is essential. Therefore, it was decided that even if the PP is to construct the project from his own funds, EC will be given only after PP produces the clearance from CWC for hydrology and interstate aspect. PP has not obtained the clearance from CWC for hydrology and inter-state aspect. Therefore, the Committee advised the PP to obtain the same.

Based on the query raised by EAC, the PP submitted a letter enclosing CWC guidelines of 2017 wherein, it has been mentioned that –

"*Environmental clearance is one the pre-requisite for examination of the DPR for issue of CWC clearance. Further, the Technical Advisory Committee (TAC) of CWC will not appraise the project for CWC clearance until submission of environmental clearance"*

After deliberations and considering the facts of the project as presented by the PP, the Committee again reiterated that since the PP is constructing this project from his own funds, it is not being examined by the CWC for hydrology, and for interstate aspect. The Committee opined that such examination by CWC for these two aspects is essential and would be helpful for all concerned. Therefore, it was decided that, even if, the PP is to construct the project from his own funds, EC will be given only after PP produces the clearance from CWC for hydrology and interstate aspect.

As clearances from CWC for hydrology and inter-state aspect have not been obtained, the Committee **deferred the proposal** and advised the PP to obtain the same. Thereafter, the proposal will be reconsidered in a subsequent EAC meeting.

Item No. 8.8 Veerabhadreshwara Lift Irrigation Scheme in Bagalkot District of Karnataka by Karnataka Neeravari Ltd., Government of Karnataka - **Reconsideration of Environment Clearance.**

In the meeting of EAC held on 12.04.2017, the Project Proponent (PP) and the Consultant, M/s Health and safety Consultant, Bengaluru made a presentation of the project and *inter-alia*, provided the following information:

The project involves lifting of 2.5 TMC water from Ghataprabha River in Bagalkot District (Karnataka), to provide irrigation to 17,377 ha of land. This project is likely to benefit 34 villages during Kharif season (June-September). The 2.5 TMC of water is proposed to draw through an intake canal for a length of 100m on Ghataprabha River. Thereafter, the water is proposed to be pumped to delivery chamber through MS raising main of 7.6 km length. The project has two major gravity canals, viz. Hosakoti canal of 13 km long to irrigate 5,900 ha & Sallahalli canal of 20 km long to irrigate11,477 ha. The project also proposes to fill 10 Minor Irrigation Tanks within the command area. The total land requirement is about 125 ha. The estimated project cost is Rs. 544 crores.

The Scoping/ToR clearance was granted on 17.11.2015 for a period of 3 years. The Public Hearing was conducted at Killa Hosakoti Village, Mudhol Taluk, Bagalkot District on 13.1.2017 and at Boodaanur Village, Belagavi District on 7.2.2017 of Karnataka state. PP informed that all the issues raised during the Public Consultation have been incorporated in the EIA/EMP report. The socio-economic impact assessment was carried out separately and report was also submitted. Thereafter, the final EIA/EMP reports were submitted to the Ministry for environment clearance.

The project was earlier considered by EAC in its meetings held on 12.04.2017 and 24-25th August, 2017. The various environmental aspects covering catchment area, submergence area and project influence area, i.e. area within 10 km radius from main project components have been considered. The baseline data has been collected covering Physico-chemical aspects, biological aspects and socio-economic aspects. Three seasons' data have been collected for air, noise, water, soil and ecological aspects. Impacts during construction and operation phases have been assessed and mitigation measures suggested minimizing the anticipated impacts. The EMP has been prepared based on predicted impact, actual requirement and incorporating suggestions of local people, stakeholders with the details as provided in the table below:

Table: Cost estimates for implementation of EMP

Sl. No.	Environmental Management Plan	Cost (Rs.in lakhs)
A.	**Construction Phase**	
1.	Air Pollution Control	28.6
2.	Noise Pollution Control	0.25
3.	Water Pollution Control	1.75
4.	Solid & Hazardous Waste Management	2.45
5.	Greenbelt Development	1273.00
6.	Agro Forestry Activities	17.40
7.	Fisheries Development	10.00
8.	Socio-economic Environment	1977.00

9.	Environmental Monitoring	45.88
10.	Implementation of CAT plan	1885.00
B.	**Operation Phase**	
10.	Environmental Monitoring	10.74
11.	Greenbelt Maintenance	30.00
Total		**5,282.00**

After detailed deliberations and considering all the facts of the project as presented by the PP, the EAC sought additional information and PP submitted the compliance report and the same and has been presented during 7th EAC meeting held on 24-25th August, 2017. The EAC was satisfied with the report. However, EAC opined that since the PP is constructing the project from his own funds, it results in avoidance of examination by the CWC for hydrology, and for interstate aspect. Vetting by CWC for these two aspects is important and essential. Therefore, it was decided that even if the PP is to construct the project from his own funds, EC will be given only after PP produces the clearance from CWC for hydrology and interstate aspect. PP has not obtained the clearance from CWC for hydrology and inter-state aspect. Therefore, the Committee advised the PP to obtain the same.

Based on the query raised by EAC, the PP submitted a letter enclosing CWC guidelines of 2017 wherein, it has been mentioned that –

"*Environmental clearance is one the pre-requisite for examination of the DPR for issue of CWC clearance. Further, the Technical Advisory Committee (TAC) of CWC will not appraise the project for CWC clearance until submission of environmental clearance*"

After deliberations and considering the facts of the project as presented by the PP, the Committee again reiterated that the PP constructing a project from his own funds results in avoidance of examination by the CWC for hydrology, and for interstate aspect. The Committee opined that CWC gives clearances at various stages and vetting by CWC for these two aspects is helpful and essential. Therefore, it was decided that, even if, the PP is to construct the project from his own funds, EC will be given only after PP produces the clearance from CWC for hydrology and interstate aspect.

As clearances from CWC for hydrology and inter-state aspect have not been obtained, the Committee **deferred the proposal** and advised the PP to obtain these clearances from CWC. Thereafter, the proposal will be reconsidered in a subsequent EAC meeting.

Item No. 8.9 Additional Study for Cumulative Impact Assessment & Carrying Capacity Study (CIA & CCS) of Lower Subansiri Basin in Arunachal Pradesh – **Presentation before EAC**.

The Consultant, M/s IRGS who prepared the CIA and CCS report could not be present and sought leave of absence from the meeting. Therefore, the proposal has been deferred to the next EAC meeting.

Item No. 8.10 Standardization of Environmental Clearance conditions of River Valley projects - **Presentation before EAC**.

As per the decision taken in the Ministry, standardization of Specific EC conditions for River Valley Projects has been presented before the EAC by the EAC secretariat. After deliberations and considering the presentation made by the EAC Secretariat, the Committee decided that the standardization of Specific EC conditions for River Valley Projects may be circulated again to all the Members so that they may offer their comments. The matter shall be considered again in the next EAC meeting. The proposal has accordingly been **deferred.**

Item No. 8.11 Any other item with the permission of the Chair

As, there was no Agenda Item left for discussion, the meeting ended with thanks to the Chair.

****

Subject: **Approved minutes - 8th meeting (RVH)**
To: "Dr S. Kerketta" <s.kerketta66@gov.in>,
"Dr S. Kerketta" <suna1466@rediffmail.com>

Date: 09/29/17 09:33 AM
From: Sharad Jain <s_k_jain@yahoo.com>
Reply-To: Sharad Jain <s_k_jain@yahoo.com>

8th_EAC_Meeting_22.09.2017_Approved minutes.docx (95kB)

Dear Dr Kerketta,
I am sending the approved minutes of the 8th meeting of EAC (RVH). I assume that all the data and information reported in the minutes has been carefully checked by you and is correct.

Regards,

Sharad Jain

NIH Roorkee