Minutes of the 16th Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects held on 27.07.2018 at Teesta Meeting Hall, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi–3.

The 16th meeting of the re-constituted EAC for River Valley & Hydroelectric Projects was held on 27.07.2018 with the Chairmanship of Dr. Sharad Kumar Jain in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, 1st Floor, Vayu Wing, 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. J.A. Johnson	-	Representative of WII
5.	Dr. A.K. Sahoo	-	Representative of CIFRI
6.	Shri Chetan Pandit	-	Member
7.	Dr. D.M. More	-	Member
8.	Dr. Poonam Kumria	-	Member
9.	Prof. Govind Chakrapani	-	Member
10.	Dr. S.R. Yadav		Member
11.	Dr. S. Kerketta	-	Member Secretary

Dr. R. Vasudeva, Dr. T.P. Singh, Dr. Vijay Kumar and Dr. J.P. Shukla, could not be present due to pre-occupation. The deliberations held and the decisions taken are as under:

Item No. 16.0 Confirmation of the Minutes of 15th EAC meeting

The minutes of the 15th EAC (River Valley Hydroelectric Project) meeting held on 28.06.2018 were confirmed.

Item No. 16.1 Expansion of Parwan Major Multipurpose Irrigation Project from CCA 1.31 lakh ha to CCA 2.01 lakh ha area (Phase II), Jhalawar, Rajasthan, Water Resources Department of Rajasthan- **reg. TOR/Scoping Clearance**. **F.No. J-12011/17/2018-IA.I, Proposal No. IA/RJ/RIV/75576/2018.**

The PP applied online on 25.06.2018 for grant of ToR/Scoping clearance. The project proponent made a detailed presentation on the project and *inter alia* provided the following:

The PP informed that the proposed project is an expansion to the existing project for which the Ministry has already accorded environmental clearance vide letter No. J-12011127/2007-1A-I dated 25.11.2011 to provide irrigation facility in 1.31 lakh ha CCA through flood irrigation technique. Now, the construction of the existing project, for which environmental clearance has been given, is in progress. It has been informed that the Government of Rajasthan vide Budget announcement for the year 2015-16 has enacted policy for switching irrigation water application to pressurized water application method on all forthcoming as well as existing irrigation projects. Accordingly, the aforesaid project switched over to micro irrigation techniques which resulted in saving in irrigation water and thereby the proposed command area was increased from 1.31 Lacs ha to 2.01 Lacs ha.

The PP provided the details of the existing project (Phase I) *vis-à-vis* changes proposed (Phase II) in the present proposal -

S. No	Particulars	Details as per EC dated 25.11.2011	As proposed in Phase I	Proposed modification
1	Location of Dam/head works	Akawad Kalan, District Jhalawar	No Change	No Change
2	Height of the Dam	38 m	No Change	No Change
3	Gross storage	490 million m^3	No Change	No Change
4	Live storage	462 million m^3	No Change	No Change
5	GCA	8,242 km^2	No Change	No Change
6	CCA	1,31,400 ha	No Change	2,01,166 ha
7	Project Cost	Rs. 1,114 Cr	Rs 2,435.93 Cr	Rs. 7,355.23 Cr
8	**Water use planning**			
i.	Drinking water	50 million m^3	No Change	No Change
ii.	Industrial water	94 million m^3	79 million m^3	79 million m^3
iii.	Wildlife	16 million m^3	No Change	No Change
iv.	Irrigation water	302 million m^3	317 million m^3	317 million m^3
v.	**Total water use**	**462** million m^3	**462** million m^3	**462** million m^3
9	**Irrigation water application**			
i.	Irrigation Water application methods	Flood irrigation	No change	Pressurized water application
ii.	Main Canal	Gravity based	No Change	Gravity based
iii.	Distribution system	Gravity based distributaries & minors	No Change	Pressurized pipe irrigation network

For the existing project, work order for construction of Dam and Tunnel amounting to Rs 673 Cr has been issued on 19.05.2017. Now, construction work of dam and tunnel is in progress and it shall be completed on or before 28.05.2021. Similarly, work order for construction of canal network in Phase-I command area of 1.31 Lac ha amounting to Rs 2170.08 Cr has been given to complete the work on or before 27.05.2022.

Regarding acquisition of submergence area, an award amounting to Rs. 702.50 Cr of 17 no's completely submerged villages (10 Jhalawar and 7 Baran) has already been given. Besides, award for land acquisition of all 30 nos. partially submerged villages of Jhalawar and Baran districts amounting to Rs 1049.81 Cr has been given and distribution of compensation are in progress. R&R plan of all 28 no's affected families has been approved for both Jhalawar and Baran districts. House compensation of Akawad Kalan village, which is coming under Dam line, has been issued amounting to Rs 1.65 Cr and has already been distributed. R&R award of Akawad Kalan village amounting to Rs 18.60 Cr has been issued and has also been distributed. To rehabilitate the displaced families of Baran district, an area of 193 ha land in village Chhatrpura Tehsil Atru on Atru–Kawai Highway has been allotted by the Government of Rajsthan. An area of 211.11 ha has also been allotted in village Akawad Kalan, Mahua Kheda, Shiv Nagar Dhani, Chandaliya and Bharatpur by the Government to rehabilitate the displaced families of Khanpur Tehsil. Further, an area

of 3.90 ha has been allotted in village Jamunia Kalan of Aklera Tehsil of Jhalawar district. Land allotment for R&R is completed as of now. R&R works are in progress and to be completed simultaneously with water impounding in Dam. **Total project expenditure to the tune of Rs 1660.70 Cr has been made till June, 2018.**

For the expansion of the existing project, no forest land and wildlife area are involved. Similarly, there is no submergence under Phase II command area. Land proposed for utilization under this project is mostly the existing drainage network of Kalisindh, Ujjar, Parwan, Parwati, Kharand rivers and existing drains. There are two feeders. The first one is from left main canal and second one is from right main canal of the existing project. The feeder canal of 6.50 km long emerges from the right main canal near village Antana and drains into Parwati river and then water is lifted through five rainwater harvesting structure constructed enroute to this river so as to provide irrigation facility in an area of 24,515 ha CCA on both the flanks of Parwati river. Similarly, the feeder canal emerges from the left main canal near village Sarola Kalan (8.2 km long canal) and drains into Ujjar river near village Banya at Anicut Pugahesi (4.88 km long canal) and then to Nangili river near village Mohanpura at Alampura Anicut (4.77 km long canal) and finally drains into Kalisindh river. Water is be distributed through eight lifts from eight rainwater harvesting structures to irrigate in an area of 45,602 ha CCA on both the command areas of both right and left flanks of Kalisindh river. The total land to be used for all the feeder canal will be about 73.08 ha. **There will be no submergence and land acquisition is envisaged in the proposed expansion of the project.**

The revised total cost of the proposed project including the existing project is Rs.7,355.238 Cr as per the letter No. F 3(12)AS/I/Cell/96/XVII/139th SLEC meeting/299 dated 22.05.2018 of Govt. of Rajasthan. The sanctioned cost of the proposed project is Rs. 682.98 Cr.

EAC deliberated on the proposed project in detailed based on the information provided by the PP and **recommended for grant of ToR/Scoping clearance** with the following additional conditions:

i. All the statutory clearances to be implemented shall be incorporated in the EMP.
ii. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines. Private land shall be acquired as per provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
iii. Certified report on the point-wise EC compliance conditions of the existing project to be obtained from the Regional Office, MoEF & CC, Lucknow and presented during appraisal of the proposed project for environmental clearance.

Item No. 16.2 Kosi-Mechi Intrastate Link Project (Construction of canal (76.20 km) on the existing barrage beyond existing Eastern Kosi Main Canal (41.30 km) for irrigation purpose under Kosi-Mechi Intrastate Link Project in the State of Bihar- **reg. Fresh Environmental clearance. File No. J-12011/22/2016-IA.I, Proposal No. IA/BR/RIV/57622/2016.**

The PP applied online on 07.07.2018 for grant of environmental clearance to the proposed project. The project was considered as per provisions of EIA Notification, 2006 and amendments thereof. The project proponent and the Consultant, Centre for

Envotech and Management Consultancy Ltd., Bhubaneswar, made a detailed presentation on the project and *inter alia* provided the following:

The Kosi-Mechi Intrastate link project is proposed on River Kosi in Supaul and Araria Districts of Bihar by Water Resources Department, Government of Bihar. The Eastern Kosi-Mechi Canal (EKMC) is an existing canal of 41.30 km long having headworks (barrage) at Hanuman Nagar, Nepal passing through Supaul and Araria Districts of Bihar providing irrigation facility to the Districts of Supaul, Saharsa, Madhepura and partly in the District of Purnia, Araria and Katihar. The present proposal is an extension of EKMC from RD 41.30 up-to river Mechi, i.e. up-to RD 117.50 km which will connect river Kosi to river Mechi (a tributary of Mahananda river).

The proposed gross command area of the project and culturable command area are 2.75 lakh ha and 2,14,812 ha (CCA 2.15 ha), respectively spread over in the districts of Araria, Kishanganj, Purnia and Katihar in the state of Bihar. The Kosi-Mechi Link Project envisages diversion of part of surplus water of Kosi River through existing Hanuman Nagar barrage to Mahananda basin. Main components of the project involve remodeling of existing EKMC up-to 41.30 km and construction of a new canal from RD 41.30 km to 117.50 km long. The FSL of link canal at head is 74.371 m and at tail end is 54.238 m.

The project involves no displacement of population and there is no acquisition of any forestland in the canal alignment. This canal project at RD 3.66 km is having a hydroelectric power project component of 19.20 MW capacity. The total land requirement is about 1,396.81 ha. No National Park, Wildlife Sanctuary, Eco-sensitive areas, etc. are present within 10 km radius of the project. The total project cost is about Rs. 4,900 Crores.

Environmental flows have been calculated based on 90% dependable year (1992-93). The total monsoon flow is estimated as 33,281.27 MCM and the 30% monsoon flow has been calculated as 9,985 MCM. The same has been assured for river and no water will be drawn into the canal in the non-monsoon season.

The public hearing for the project was conducted in 4 Districts viz., Kishanganj on 26.2.2018, Purnia on 27.2.2018, Katihar on 28.2.2018 and Araria on 28.2.2018 by the Bihar State Pollution Control Board, Bihar. The main issues raised during public hearing are – aggravate flood situation, release of excess water will create problem, de-silting work/de-siltation be intensified, R&R Policy 2013 be implemented within one year, employment under this project, flood control, etc. The project proponent clarified all the queries/issues pertaining to them.

To ameliorate the negative effects of the project construction and overall improvement of the environment following management plans are formulated based on predicted impact, actual requirement and incorporating suggestions of local people, stakeholders, etc. with the details as provided in the table:

Table: Cost estimates for implementation of EMP

S.No.	**Plans**	**Cost**

		(Rs. In Lakh)
1	Free fuel to Labourers	16.35
2	Ground Water management	85.82
3	Public Health Management	1,526.78
4	Environmental Monitoring Plan during construction (5 years)	53.80
5	Plantation	62.00
6	Training of Project Staff	7.50
7	On site Farmers training	2.00
8	Drainage	14,448.00
9	Escapes	1,696.37
10	Communication	16,654.96
11	Environmental Monitoring Programme	53.60
Grand Total		**12,439**

After detailed deliberations, EAC recommended for a site visit by a Sub-committee and ***deferred the proposal***. The sub-committee will consist of the following EAC members:

S. No.	Name	Designation
1.	Dr. D.M. More	Chairman
2.	Dr. S.R. Yadav	Member
3.	Dr. A.K. Sahoo	Member
4.	Dr. S. Kerketta	Member Secretary

After getting the site visit report, the proposal be further considered for environmental clearance. Further, the PP will address the following:

1. EMP cost be revised based on the mitigative measures suggested including reappropriation of capital budgets on different heads of the EMP.
2. Environmental matrix provided in the EMP be revisited and revised accordingly.
3. PP may consider conjunctive use of water.
4. Information on fish species from secondary sources be collected and included in the EIA report. The species may be categorized on the level of conservational importance as per standard Ref. like IUCN and NBFGR. Correspondingly, EMP should be developed for the VC, NT, EN and CR species. Migratory path may be delineated and should be protected under EMP.
5. Plan be prepared to irrigate minimum 10% of CCA through pressure irrigation technique.
6. CAD plan be revised based on actual ground reality and accordingly the EIA/EMP report be revised and submitted.

Item No. 16.3 Kirthai Stage I (390 MW) in Kishtwar District of Jammu & Kashmir by JKSPDC Ltd., Govt. of Jammu & Kashmir – **For reconsideration of Environment clearance-reg. File No. J-12011/6/2008-IA-I, Proposal No. IA/JK/RIV/64942/2012.**

The PP applied online on 02.06.2018 for grant of environmental clearance to the proposed project. Kirthai Stage I HEP (390 MW) is proposed across Chenab River in Kishtwar District of Jammu & Kashmir and the project to be implemented by JKSPDC Ltd., Government of Jammu & Kashmir. The Project was considered as per the provisions of EIA Notification, 2006 and amendments thereof. The Project Proponent and the Consultant, EQMS India Pvt. Ltd., Delhi, made a detailed presentation on the project and *inter alia* provided the following:

It is proposed to construct 165 m high concrete gravity dam across Chenab River near Gulabgarh village in Kishtwar District of Jammu & Kashmir to generate hydropower with an installed capacity of 390 MW. Total land requirement is about 321 ha, out of which 236.78 ha is reserved forestland, 42.19 ha is private land and 42.03 ha is revenue land. Total submergence area is 210 ha. An underground powerhouse is proposed with 4 units of 95 MW each + one unit of 10 MW dam-toe powerhouse to facilitate to release environmental flow. No archaeological monument/ national park/ sanctuary/defense establishments within 10 km of the project area exist. The estimated cost of the project is Rs. 2,304.04 Crores and it is proposed to be completed in 5 years. About 1,200 persons -- professionals, technical, skilled and unskilled persons -- will be employed during construction period.

The Scoping/ToR clearance to this project was accorded on 10.6.2013 for a period of 2 years, which expired on 09.06.2015. Presently, the ToR validity for River Valley & HEP projects is 4 years. Thereafter, the Ministry granted extension of validity of ToR for the 5th year, i.e. 09.06.2018.

The public hearing for the project was conducted by the J&K State Pollution Control Board on 28.10.2017 in Gulabgarh village, District Kishtwar in Jammu & Kashmir. The main issues raised during public hearing are – on R&R Policy and adequate compensation at par with the provisions proposed in Kishan Ganga Project, employment, school and hospital should be opened, free electricity, infrastructure, crushers and mixing plant should not be established within the vicinity of the habitation, proper training to locals etc. The project proponent clarified all the queries/issues pertaining to them.

The river course beyond Dulhasti Dam in the downstream up to Salal has already been affected due to cascade development of hydropower projects on Chenab river which has largely disturbed the propagation of fishes. The construction of the projects like present one, has no specific bearing on the migration of fishes as the upstream and downstream courses are having HEPs. However, Bhut nallah shall continue a habitat for the indigenous fish species. To ameliorate the negative effects of the project construction and overall improvement of the environment following management plans are formulated based on predicted impact, actual requirement and incorporating suggestions of local people, stakeholders, etc. with the details as under:

Table: Cost estimates for implementation of EMP

S. No.	Plans	Cost (Rs. In Lakh)
1	Catchment Area Treatment Plan	3434
2	Compensatory Afforestation Scheme	11454
3	Wildlife and Bio-diversity Management plan	100
4	Fisheries Management Plan	720
5	Resettlement & Rehabilitation Plan	8026
6	Green Belt Development Plan	36
7	Reservoir Rim Treatment Plan	794
8	Muck Management Plan	1639
9	Restoration Plan for Quarry Sites & Landscape plan	133
10	Disaster Management Plan	55
11	Water, Air and Noise Management Plan	85
12	Public Health Delivery Plan	125
13	Labour Management Plan	85.00
14	Sanitation and Solid Waste Management Plan	475.00
15	Local Area Management Plan	1135.00
16	Environmental Safeguards during Construction Activities	35.00
17	Energy Conservation Measures	305
18	Environmental Monitoring Plan	77
Grand Total		**28,713**

After detailed deliberations, EAC ***deferred the proposal***. The following additional information shall to be incorporated in the EIA/EMP report and submitted to the Ministry for reconsideration:

1. One season baseline data shall be collected afresh and EIA/EMP report be revised. The resultant pollution loads from all the possible pollution sources be estimated and based on the findings, mitigative measures be suggested including allocation of capital budgets on different heads.
2. A few environmental parameters have been described in the EIA/EMP report which the PP intends to take up for environment management. Therefore, commitment be made as to how to reduce the additional pollution load during post-project scenario.
3. Environmental matrix provided in the EMP be revisited and revised accordingly.
4. Deep pools and seasonal migratory path for fish spawning sites, etc. be provided. Information on fish species from secondary sources be collected and included in the EIA report.

Item No. 16.4 Kirthai Stage II (930 MW) in Kishtwar District of Jammu & Kashmir by JKSPDC Ltd., Govt. of Jammu & Kashmir – **For reconsideration of Environment clearance-reg. F.No. J-12011/6/2012-IA.I, Proposal No. IA/JK/RIV/64947/2012.**

The PP applied online on 02.06.2018 for grant of environmental clearance to the proposed project. The project was considered as per the provisions of EIA Notification, 2006 and amendments thereof. The Project Proponent and the

Consultant, EQMS India Pvt. Ltd., Delhi, made a detailed presentation on the project and *inter alia* provided the following:

Kirthai Stage-II HEP (930 MW) proposed across Chenab River in Kishtwar District of Jammu & Kashmir submitted by JKSPDC LTD., Government of Jammu & Kashmir. It is proposed to construct 121 m high concrete gravity dam across Chenab River near Gulabgarh village in Kishtwar District of Jammu & Kashmir to generate hydropower with an installed capacity of 930 MW. Total land requirement is about 225 ha, out of which 142.25 ha is reserved forestland, 43 ha is private land and 40 ha is revenue land. An underground powerhouse is proposed with 6 units of 140 MW each + one unit of 90 MW dam-toe powerhouse to facilitate to release environmental flow. No archaeological monument/ national park/ sanctuary/defense establishments within 10 km of the project area exist. The estimated cost of the project is Rs. 5,158 Crores and proposed to be completed in 5 years. About 2,100 persons -- professionals, technical, skilled & unskilled persons -- will be involved during construction period.

The Scoping/ToR clearance to this project was accorded on 05.06.2013 for a period of 2 years, which was expired on 04.06.2015. Presently, the ToR validity for River Valley & HEP projects is 4 years. Thereafter the Ministry granted extension of validity for the 5th year, i.e. till 04.06.2018.

The public hearing for the project was conducted by the J&K State Pollution Control Board on 30.10.2017 in Gulabgarh village, District Kishtwar in Jammu & Kashmir. The main issues raised during public hearing are – implementation of R&R Policy and adequate compensation at par with the provisions proposed in Kishanganga Project, employment, school and hospital should be opened, free electricity, infrastructure, crushers and mixing plant should not be established within the vicinity of the habitation, proper training to locals, etc. The project proponent clarified all the queries/issues pertaining to them.

To ameliorate the negative effects of the project construction and overall improvement of the environment following management plans are formulated 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.	**Plans**	**Cost (Rs. In Lakh)**
1	Catchment Area Treatment Plan	5000
2	Compensatory Afforestation Scheme	6856
3	Wildlife and Bio-diversity Management plan	110
4	Fisheries Management Plan	760
5	Resettlement & Rehabilitation Plan	7202
6	Green Belt Development Plan	29
7	Reservoir Rim Treatment Plan	828
8	Muck Management Plan	6687
9	Restoration Plan for Quarry Sites & Landscape plan	125
10	Disaster Management Plan	55
11	Water, Air and Noise Management Plan	95
12	Public Health Delivery Plan	160

13	Labour Management Plan	96
14	Sanitation and Solid Waste Management Plan	500
15	Local Area Management Plan	1135
16	Environmental Safeguards During Construction Activities	40
17	Energy Conservation Measures	346
18	Environmental Monitoring Plan	82
Grand Total		**30,106**

After detailed deliberations, EAC ***deferred the proposal***. The following additional information shall to be incorporated in the EIA/EMP report and submitted to the Ministry for reconsideration:

1. One season baseline data shall be collected afresh and EIA/EMP report be revised. The resultant pollution loads from all the possible pollution sources be estimated and based on the findings, mitigative measures be suggested including allocation of capital budgets on different heads.
2. Environmental matrix provided in the EMP be revisited and revised accordingly.
3. Deep pools and seasonal migratory path for fish spawning sites, etc. be provided. Information on fish species from secondary sources be collected and included in the EIA report.

Item No. 16.5 Kamala HEP (1,800 MW) in Kamle (Formerly Lower Subansiri) district of Arunachal Pradesh by M/s Kamala Hydroelectric Project Co. Ltd – **reg. Scoping/ToR Clearance. File No. J-12011/18/2018-IA.I(R), Proposal No. IA/AR/RIV/75829/2018**

The PP applied online on 17.07.2018 for grant of ToR/Scoping Clearance. The Project Proponent and the Consultant, WAPCOS India Pvt. Ltd., Gurgaon, made a detailed presentation on the project and *inter alia* provided the following:

Earlier ToR for the proposed project was granted on 05.06.2014. But due to non-provision of certain information by the PP, the draft EIA couldn't be completed and thus, PH was held up. In this process, the PP has completely exhausted four years i.e. the normal validity period of ToR for submission of EIA report including holding of the public hearing. Then, as the provision exists, the PP applied online on 11.04.2018 for extension of validity period of submission of draft EIA report for one more year. Vide Ministry's letter dated 29.08.2017, the PP can request online for extension of validity of ToR which the Ministry can consider without referring to the EAC for grant of extension of validity of ToR. The proposal was examined in the Ministry and the Competent Authority didn't consider to grant the validity of extension of ToR for further period of one more year (beyond four years) because **"the PP cannot complete the assessment of Flood Moderation of Kamala river within one year including the process of holding of Public Hearing."**

Kamala Hydroelectric Project (IC 1,800 MW) is proposed for development on Kamala River, a major tributary of river Subansiri. The project is located in Lower Subansiri District of Arunachal Pradesh, just upstream of Tamen village which is about 55 km from Ziro, the district headquarters of Lower Subansiri. There are no wildlife sanctuaries located within 10 km radius. The dam site is located at latitude $27^0$46'18" N and longitude at $93^0$59'19" E. The project is conceived as a multipurpose

project with the twin objectives of power generation and flood moderation. To meet these objectives, a 216 m high concrete gravity dam is proposed which is designed to provide storage for power generation and is also provided with a 15 m exclusive cushion above the full reservoir level to facilitate flood moderation. The project is thus conceived between Maximum Water Level EL 470 m (FRL as EL 455 m) and normal Tail water level as EL 285.5 m. The main power plant, comprising eight generating units of 216 MW, each, is housed in an underground cavern located in the left bank about 600 m downstream from the dam axis. Two additional generating units of 36 MW, each, are proposed in a dam-toe-surface powerhouse on the right bank. These units will be used for the mandatory requirement to maintain environmental release from the dam. The total installed capacity of the project is 1,800 MW. Power generated from the project shall be taken to a pooling point through a 400 kV double circuit transmission line and transmitted to the National Grid.

The project was initially identified and planned by the Brahmaputra Board in consultation with CWC and GSI and was subsequently assigned to NHPC for development. As a first step, NHPC carried out a Feasibility Study and confirmed the general suitability of the identified area to develop the project. A comprehensive field investigation program was ensued by NHPC and a Detailed Project Report was prepared wherein a 221 m high Concrete Faced Rockfill Dam was proposed along with an underground powerhouse arrangement with an installed capacity of 1,600 MW. The report, however, was not submitted for statutory clearances as the Government of Arunachal Pradesh decided to get the project implemented through private participation. Accordingly, Govt. of Arunachal Pradesh, in August, 2009, approved the development of Kamala HEP by Hydro Power Development Corporation of Arunachal Pradesh Limited (HPDCAPL) in JV with Jindal Power Limited (JPL) under Joint Venture route as per State Hydro Power Policy, 2008 on BOOT basis for an initial lease period of 40 years from the commercial operation date (COD). Special Purpose Vehicle (SPV) namely Kamala Hydro Electric Power Company Limited (KHEPCL), was incorporated for development of Kamala HEP. The initial equity shareholding of the parties in the JV is as JPL – 74% and HPDCAPL – 26%.

The project is located on River Kamala, a major right bank tributary of Subansiri river in Lower Subansiri District of Arunachal Pradesh and falls in the Lower Himalaya region. Kamala river valley is almost entirely hilly and mostly covered by forests. The dam site as proposed in the present DPR is located around 4 km upstream of Tamen village and 1 km downstream of Komperjio village. Tamen village is located about 55 km away from Ziro headquarters of Lower Subansiri district. The dam site is approachable through a black-topped road on left bank of Kamala. Besides, an unmetalled road also exists on the right bank at a higher elevation. Both these roads take off from the Tamen-Daporijo road near Tamen village. The Border Road Organization (BRO) is maintaining all the roads. Ziro, the District headquarters is about 130 km from North Lakhimpur, headquarters of Lakhimpur district. A paved road of relatively in good condition goes from North Lakhimpur to Ziro and further to Daporijo via Tamen. North Lakhimpur is connected to Guwahati by road as well as by air; the airport is at Lilabari, about 5 km from North Lakhimpur.

Land has already been identified for the project and is being acquired in accordance with the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. The total land to be acquired for the project is 3,279 ha which includes 2,775 ha of submergence up to FRL of EL. 455 m. The permanent and temporary land acquisition is 3,163 ha and 116 ha, respectively. Based on the ownership status of land to be acquired for the project,

appropriate compensation shall be provided in accordance to the Act. However, if the land between FRL and MWL (EL. 470 – EL. 455) is also to be acquired then additional 300 ha over and above 3,279 ha shall also be included in land requirement.

The Forest proposal is submitted to the State Forest Department and the process of completion of Part-II of the Forest proposal is in progress by them.

Salient features of the Project

S. No.	Particular	Value
1.	Top Level of the Dam (m)	RL 475.00
2.	Maximum Water Level (m)	RL 470.00
3.	FRL (m)	RL 455.00
4.	Dead Storage Level (m)	RL 430.00
5.	Deepest River Bed level (m)	RL 275.00
6.	Height of the Dam (m)	216.00
7.	Gross Storage Capacity (MCM)	2,365.88
8.	Live Storage Capacity (MCM)	1,927.60
9.	Dead Storage Capacity (MCM)	1304.04
10.	Length of Main Dam (m)	628.00
11.	Length of Spillway (m)	176.25
12.	No. of Main Spillway Gates	7 (6x10.5 m)
13.	No. of Auxiliary Spillway	1 (6x13.0 m)

DPR of the project has accepted for review by the Central Electricity Authority (CEA) in December, 2013. Around 24 Clearances are required from the different departments such as CEA, CWC, GSI, Central Soil and Material Research Survey), etc. Till date, a total of 17 clearances have already been obtained. Now as per the direction of CEA, Geo-technical Investigations are in progress at the project site and the results shall be submitted shortly. As per the DPR, total power benefits with flood moderation, from the Project works out to be 7,338 MU. The Project Cost for power component is Rs. 17,469.56 Crores and the cost towards **flood moderation on account of increased dam height and loss of energy is Rs. 2,671.21 Crores**. Thus the total project cost (Power Component+ Flood moderation compensation) is Rs. 20,140.77. However, this is yet to be finalized by CEA. The project will be completed in 7.5 years. The peak manpower strength is 3000. During operation phase, about 220 persons will be employed. The tariff of only power component is Rs. 5.25 per unit.

As the ToR has already been granted on 05.06.2014, M/s WAPCOS, the EIA consultant have collected three seasons field data, viz., Monsoon, Post- Monsoon (Winter) and the Pre-Monsoon (Summer). EIA/EMP draft reports were accordingly prepared; however, since the SIA studies for project affected families were not initiated by State Govt., the entire report could not be finalized including the flood moderation of Kamala river.

EAC during the meeting, deliberated on the proposed project based on the information provided by the PP and **recommended for grant of ToR/Scoping clearance** with the following additional conditions:

i. All the statutory clearances to be so implemented shall be incorporated in the EMP.
ii. The baseline data so collected may also be used in the preparation of EIA/EMP report, apart from fresh three seasons base line data.

iii. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines. Private land shall be acquired as per provisions of Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.

Item No. 16.6 Hanota Irrigation Project (40,000 ha CCA) on Bina river at Hanota village, Khurai Tehsil, Sagar district by Water Resources Department, Govt. of Madhya Pradesh, Madhya Pradesh – **reg. Scoping/ToR Clearance. File No. J-12011/19/2018-IA.I(R), Proposal No. IA/MP/RIV/75828/2018**

The PP applied online on 17.07.2018 for grant of ToR/Scoping clearance to the proposed project. The Project Proponent made a detailed presentation on the project and *inter alia* provided the following:

The proposed project has been conceived during early 2018, therefore, no major projects have been developed on Bina river. Bina river is tributary of Betwa river and again Betwa river is tributary of Yamuna river. It originates at Dahgaon village in Gairatganj tehsil of Raisen district of Madhya Pradesh. The proposed project shall be developed on Bina river and is located in Hanota village of Khurai tehsil of Sagar district in Madhya Pradesh. The dam site is located at latitude $24^0$00'22.07" N and longitude at $78^0$16'48.25" E. It falls in Earthquake Zone-III. The proposed site is located at about 5 km away from Khurai tehsil headquarters. The dam site is easily approachable by a district road from Hanota village (1 km distance). The nearest railway station is at Khurai.

The proposed project consists of four main components such as Head works (Dam with Central Spillway and Appurtenant works), Pump House, Distribution Chamber and the Pressurized Canal Works. It envisages construction of an earthen dam with Canal Spillway. Pump house on submergence with rising main. The detailed features are provided below.

The total catchment area of the river at dam site is 2,252.14 km^2. The total yield is worked out to be 608.81 MCM at 75% dependable year. Design flood has been calculated to be 11,511.80 MCM. The total area under submergence is 3,560.02 ha, of which 2,810.52 ha is private land and 749.50 ha is government land. No forestland is involved. A total of 46 villages of Sagar and Vidisha districts are being submerged, of which two villages are fully submerged. A total of 485 households and 776 families are affected. The total cost of the project is Rs. 1,392.42 crores of BC ratio (@10% interest) of 1.52.

Salient features of the Project

S. No.	Particular	Value
1.	Top Level of the Dam (m)	RL 433.00
2.	Maximum water Level (m)	RL 429.00
3.	FRL (m)	RL 428.00
4.	Dead storage Level (m)	RL 416.00
5.	Deepest River Bed level (m)	RL 405.00
6.	Top width of the Dam (m)	6.00
7.	Height of the Dam (m)	27.20
8.	Gross Storage Capacity (MCM)	150.22

9.	Live Storage Capacity (MCM)	146.84
10.	Dead Storage Capacity (MCM)	3.38
11.	Length of Main Dam including Earthen Bund (km)	5.01
12.	Length of Saddle Dam (m)	800.00
13.	Length of Spillway (m)	176.25
14.	No. of Spillway Gates	11(10x12.5 m)
15.	Length of Rising Main (km)	12.40
16.	Max. Diameter of Rising Main (m)	3.00

This project will help in maximum utilization of water in the concerned areas facing high scarcity of water for irrigation, resulting in the development of the area. Major of the command area of Hanota Irrigation project lies in the deep black cotton soils and is very water scarce region of Bina Basin. Besides providing irrigation facility in the region, it will also provide water for industrial use. Therefore, this project will certainly improve the livelihood of the local people of the area in manifolds.

EAC deliberated on the proposed project in detail based on the information provided by the PP and **recommended for grant of ToR/Scoping clearance** with the following additional conditions:

i. All the statutory clearances to be implemented shall be incorporated in the EMP.
ii. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines. Private land shall be acquired as per provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
iii. Recharge of groundwater in the command area be planned and included in the EMP.
iv. Plan be made and included in the EMP for development of agro based Industries, Food Processing Units, Employment Generation and Development of Tourism during post-construction phase to ensure a long term livelihood generation of the local people.

Item No. 16.7 Majhgaon Medium Irrigation project (CCA: 9,000 ha), Panna district, Madhya Pradesh, Water Resource Department, Madhya Pradesh – **reg. Fresh environmental Clearance (General Condition applies) File No. J-12011/4/2014-IA.I(R), Proposal No. IA/MP/RIV/61490/2018**

The PP applied online on 02.06.2018 for grant of environmental clearance to the proposed project. The project was considered as per the provisions of EIA Notification, 2006 and amendments thereof. The Project Proponent and the Consultant, Enviro Infra Solutions Pvt. Ltd., Ghaziabad, made a detailed presentation on the project and *inter alia* provided the following:

Majhgaon Medium Irrigation project is proposed on Bada Nala in Panna District of Madhya Pradesh by Water Resources Department, Madhya Pradesh. The project envisages construction of composite dam on Bada Nala (a tributary of Ken River) near Narayan Chua village to provide irrigation facility in Panna District of Madhya Pradesh. It is proposed to construct 3 dams on Bada Nala: a 8,261.50 m long composite dam comprising of 1,123 m (left bank) and 3,237 m long (right bank)

earthen dam with a maximum height of 36.35 m across Bada Nala and two saddle dams of length 2,171.5 m and 1,620 m are also to be constructed. The Culturable Command Area (CCA) is 9,900 ha and irrigation facility is proposed in Rabi Season is 9,900 ha and Kharif Season is 2,700 ha benefitting 34 villages in Ajaigarh tehsil. The total land requirement for project is 1523.70 ha. The total submergence area is 1489.39 ha, out of which 426.763 ha is forestland, 166.197 ha is Government land and private land is 930.80 ha. The Stage-I FC clearance for diversion of 426.73 ha forestland has been granted vide letter No. F.8-37/2017-FC dated 03.05.2018. About 8 villages consisting of about 1,696 families are likely to be partially affected due to this project. The estimated cost of the project is about Rs. 358.99 Crores.

The CCA of the project is 9,900 ha and it is a Category-B project. The Panna Gangau Sanctuary and Ken Gharriyal Sanctuary are situated at a distance of 8.25 km and 5.25 km, respectively. Therefore, the General Conditions are applicable to this project and hence it was submitted at Central level. The project was granted scoping/TOR clearance on 16.05.2017 by the Ministry of Environment, Forest & Climate Change.

The total catchment area of the river is 28,058 km^2. Out of this, 24,472 km^2 is in Madhya Pradesh and remaining 3,586 is in Uttar Pradesh. The gross storage is 112.62 MCM and the live storage is 105.23 MCM of water. The total volumetric requirement of water during Kharif and Rabi Seasons is 15.08 MCM and 27.38 MCM, respectively. The Micro-irrigation by sprinkler shall be adopted in 100% command area.

The public hearing for the project was conducted by the Madhya Pradesh State Pollution Control Board on 28.05.2018 at Primary School, Majhgaon village, District Panna in Pradesh. The main issues raised during public hearing are – R&R Policy and adequate compensation for land, houses, garden/trees, disaster management plan and inadequate allocation of grants, proper channelizing without any disturbance to the downstream for surplus discharge, etc. The project proponent clarified all the queries/issues pertaining to them.

To ameliorate the negative effects of the project construction and overall improvement of the environment following management plans are formulated based on predicted impact, actual requirement and incorporating suggestions of local people, stakeholders, etc. with the details as under:

Table: Cost estimates for implementation of EMP

Sl. No.	**Plans**	**Cost (Rs. In Lakh)**
1	Catchment Area Treatment Plan	450
2	Command area development plan	7492
3	Compensatory Afforestation Scheme	4477
4	Wildlife and Bio-diversity Management plan	25
5	Fisheries Management Plan	222
6	Resettlement & Rehabilitation Plan	6656
7	Green Belt Development Plan	36
8	Reservoir Rim Treatment Plan	25
9	Muck Management Plan	7
10	Restoration & Landscape plan	4

11	Restoration plan for quarry sites	25
12	Disaster Management Plan	8
13	Water, Air and Noise Management Plan	16
14	Public Health Delivery Plan	75
15	Labour Management Plan	18
16	Sanitation and Solid Waste Management Plan	54
17	Local Area Management Plan	180
18	Environmental Safeguards During Construction Activities	20
19	Energy Conservation Measures	21
20	Environmental Monitoring Plan	30
Grand Total		**12,439**

After detailed deliberations, and considering all the facts of the project as presented by the PP, **EAC deferred the proposal** for want of the following additional information and shall be reconsidered in the subsequent meeting:

1. One season baseline data shall be collected afresh and EIA/EMP report be revised. The resultant pollution loads from all the possible pollution sources be estimated and based on the findings, mitigative measures be suggested including allocation of capital budgets on different heads of the EMP.
2. Environmental matrix provided in the EMP be revisited and revised accordingly.
3. Information on fish species from secondary sources be collected and included in the EIA report. The species may be categorized on the level of conservational importance as per standard Ref. like IUCN and NBFGR. Correspondingly, EMP should be developed for the VC, NT, EN and CR species. Migratory path may be delineated and should be protected under EMP.
4. There is no plan for conjunctive use of water in the project area. PP is advised to prepared such a plan and incorporate in the EIA/EMP report.
5. CAD plan be revised based on actual ground reality and accordingly the EIA/EMP report be revised and submitted.

Item No. 16.8 Proposed Kanhar Barrage Project (CCA: 53,283 ha) near village Khuri under Ranka Block under Garhwa district, Jharkhand- **for Fresh Environment Clearance- reg. File No. J-12011/17/2015-IA.I, Proposal No. IA/JH/RIV/29061/2015.**

The PP applied online on 14.07.2018 for grant of environmental clearance to the proposed project. The Project Proponent and the Consultant, Manteck Consultants Pvt. Ltd., Noida, made a detailed presentation on the project and, *inter alia* informed the following:

The Kanhar Barrage is proposed across Kanhar river (tributary of Sone River) near village Khuri, around 12 km downstream of Barwadih in Jharkhand This barrage site is located at latitude 23^{0}57'08" N and longitude at 83^{0}32'05" E. It has been envisaged to impound water up to FRL of EL. 368.60 m. Diversion of river water from the right bank is done through a 17.10 km long Main Trunk Canal and shall terminate in the upstream reservoir of Lawadoni dam, i.e. after negotiating a fall of 60 m. An Earthen Dam of 29.58 m height has been proposed as balancing reservoir at Lawadoni

village with an ungated chute spillway. This will ensure diversion of river water to the Lower Main Canal (82.22 km) and Right Main Canal (46.97 km). A branch canal, called Pratappur Branch Canal emerges from LMC at RD 20.62 km of 25.7 km long. The gross command area (GCA) of the project is 63,647.29 ha and culturable command area (CCA) is 53,283 ha.

The project is having a barrage at Khuri village where water will be stored at EL 368.60 m and a balancing reservoir of earthen Dam at Lawadoni village to store water up to EL 307.00 m. The total land requirement is about 1086.48 ha, of which 348.25 ha is forestland and 738.23 ha is non-forest land. Forest clearance is in progress and is pending at the State level. An area of 172.31 ha will be under submergence both in Jharkhand (111.27 ha) and Chhatishgarh (61.04 ha) states. The project affected families will be rehabilitated and resettled as per Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. A total of 10 Blocks are likely to be affected from two districts of Garhwa and Palamu. The details are as provided below:

Table: Project Affected Families details

Sl. No.	**Type of Project Oustees**	**No.**
1.	Household in Garhwa district	2,443
2.	Households in Palamu district	138
	Total Household	2,581
3.	PAFs in Garhwa district	12,457
4.	PAFs in Palamu district	838
	Total PAFs	13,295
5.	Agricultural land Losers	2,146
6.	Land & Structure Losers	96
7.	Non-agricultural Losers	306
8.	Squatters	15
9.	Title Holders	2,566
10.	Non-title holders	15

The catchment area of Kanhar river up to project site is about 3,375 km^2, out of which **6,685** km^2 catchment area lies in Jharkhand and remaining **862** km^2 lies in Chhatishgarh. The Interstate clearance/consent of Chhatishgarh has already been accorded by the Govt. of Chhatishgarh and U.P. Total estimated cost of the project is about Rs. 1,968.00 Crores at the Price Level of February, 2010. The BC ratio (including the cost of CAD Plan) of irrigation is 1.03 and that by excluding the cost of CAD plan is 1.09. The salient features of the Project are provided below:

S. No.	**Items**	**Phase-II**
(a) Khuri Barrage		
1.	Catchment area of the Project (km^2)	3,375
2.	Maximum Water Level (m)	EL 368.75
3.	FRL of the Barrage (m)	EL 368.60
4.	Crest Level of Undersluice Bays (m)	EL 361.00
5.	Crest Level of Other Barrage Bays (m)	EL 362.00
6.	Top of Barrage (m)	EL 370.75
7.	Live Storage Capacity (MCM)	2.90
8.	Height of the Barrage (m)	8.00

9.	Length of the Barrage (m)	224.00
10.	Length of the Main Trunk Canal (km)	17.10
11.	No. of Undersluice Bays	2 (12x7.6 m)
12.	No. Other Barrage Bays	15 (12x6.6 m)
(b) Lawadoni Dam		
1.	Height of the Earthen Dam (m)	29.58
2.	FRL of the Dam (m)	EL 307.00
3.	Dead Storage Level of the Dam (m)	EL 289.40
4.	Live Storage Capacity (MCM)	3.39
5.	Length of the Left Main Canal (km)	82.23
6.	Length of the Right Main Canal (km)	46.97
7.	Length of the Pratappur Branch Canal (km)	25.70
8.	Proposed CCA (ha)	53,283
9.	Irrigation facility in number of blocks	10

Water requirement for various uses from this proposed project is given below:

Sl. No.	**Particulars**	**Water Requirement**
1.	For Kanhar Barrage Project (ham)	23,481.77
2.	Augmentation of Existing Irrigation Schemes (ham)	3,874.19
3.	For drinking & Municipal Supply (ham)	4,344.00
4.	For Industrial Use (ham)	3,300.00
Total (ham)		**34,999.96**

The cropping pattern before and after irrigation is provided below:

Crop	**Name of Produce**	**Irrigation facility**	
		Before	**After**
		Area in ha	
Kharif	Paddy	28,140	20,247.54
	Maize	0	20,247.54
	Urad	0	6,926.79
	Groundnut	900	3,196.79
	Til	0	2,664.15
Total		29,040	53,283.00

As per the provisions of EIA Notification, 2006, the public hearings were conducted at Khuri village, Jharkhand on 25.11.2017 by the Jharkhand State Pollution Control Board, Jharkhand and at Anirudhapur village, Chhatishgarh on 14.03.2018 by Chhatisgarh State Environment Conservation Board, Chhatishgarh.

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 (3) season data (**Winter**-December, 2015 to February, 2016, **Pre-monsoon**- March, 2016 to May, 2016 and **Monsoon**-June, 2016 to September, 2016) 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 IMD station is located at Daltonganj. The annual average rainfall is **1028** mm and that in monsoon is **970** mm. Maximum Relative Humidity ranges from 70% (May) to 91% (December). Similarly, minimum Relative Humidity ranges from 36% (April) to 82% (August). Maximum temperature ranges from 24^{0}C (December) to 40.3^{0}C (May) and minimum temperature ranges from 12.5^{0}C (January) to 34.7^{0}C (May). Ambient air quality during the study period reveals that the average concentration of PM_{10} is found to be 101.58 -105.72 μg/m^3. The average concentration of PM_{10} (<10μ) is estimated to be 47.25-54.69 μg/m^3. The average values of SO_2: 11-13 μg/m^3 and NO_2: 1966-22.63 μg/m^3. Noise levels meet the both daytime and nighttime noise level standards. The surface water quality at all the 10 locations reveals that BOD and total coliforms are recorded to be more than the standards. Similarly, the groundwater quality at all the locations reveal that Alkalinity as $CaCO_3$, TDS, Total hardness and Calcium are found to be more than the prescribed limits and even sometime Mg also exceeds the standards.

There are 10 Schedule-I species found in the study area, which includes four mammals (Leopard, Sloth Bear, Indian Bison and India Pangolin), four birds (Indian Peafowl, Indian Grey Hornbill, Pariah Kite and Sikrra) and two reptiles (India rock Python and Monitor Lizard). Wildlife management plans both in core zone and buffer zone have been made for their *in-situ*/*ex-situ* conservation measures.

The total muck generation in the proposed project is 31.07 lakhs m^3 (considering 1.08 as swelling factor), of which 2.4 lakhs m^3 shall be used for road construction and the remaining muck (28.6 lakhs m^3) shall be taken to the 8 dumping sites of LMC, 10 dumping sites of MTC, 9 dumping sites for RMC and 3 dumping sites for Pratappur Branch Canal. Similarly, 5 quarry sites have been identified for borrow materials to be used in the project. Rs 45 lakh and Rs.115 lakhs have been earmarked for implementation muck disposal plan and quarry restoration plan, respectively. An area of 208.94 ha of land to be acquired for quarry areas (5 locations).

A total of 22 fish species belonging to 10 families have been recorded from different stretches of the Kanhar river. The dominant family is found to be *Cyprinidae* with 11 species. The common fishes found are Rohu, Katla, Mangur, etc. Water will be fed through gravity flow to Annraj Reservoir Scheme, Chataniaghat Reservoir Scheme, Danro reservoir Scheme and Lawadoni Reservoir Scheme and annual benefit of Rs.18.69 crores shall be derived as a part of implementation of Fish Management Plan.

Environmental matrix for various activities for both during Construction and Operations Phases has been provided along with the potential impact on Environmental Parameters. The environmental Matrix is found to be indicative only. Based on the approved water series from CWC of 36 years from 1976 to 2012, the 90% dependable year is found to be the year of 1976-77. Vide MoWR letter No. Z-23011/4/2014-Ganga dated 20.02.2014, in case of any action which adversely affect the lean season flow in river Ganga at Farakka (January to May) then the PP shall have to obtain clearance from MOWR, RD & GR. Therefore, the e-flow for different seasons are -

Season	Months	% of e-flow
Lean	December-March	20
Monsoon	June-September	30
Non-lean-Non-monsoon	October-November & April-May	25

The catchment area treatment is proposed in 3,375 km^2 of area which is found to have very high priority sub-watershed. Various engineering and biological measures have been proposed in this area. An amount of Rs. 3.92 crores has been allocated for the purpose. The compensatory afforestation programme will be taken-up in 696.50 ha which is double the forestland diverted for the project. Local plant species will be planted for the programme. Total amount estimated for this purpose is Rs. 35.16 crores. Green belt will be developed in the project area i.e. at Khuri Barrage site, Lawadoni Reservoir, in and around Office Complex and colony area, etc. and Rs. 50 lakhs has been earmarked for this purpose.

The EMP has been prepared based on predicted impact, actual requirement and incorporating suggestions of local people, stakeholders, etc. with the details as provided in the table below:

Table: The cost estimated for implementation of EMP (Rs. in crores)

S. No	Environment Management Plan	Amount
1.	CAT Plan	3.92
2.	CAD Plan	108.17
3.	Compensatory Afforestation	35.16
4.	Greenbelt Development Plan	0.50
5.	Muck Management Plan	0.45
6.	Quarry Restoration & Landscape Mgmt. Plan	1.15
7.	Water and Air Quality Management Plan	1.50
8.	Public Health Management Plan	0.75
9.	Solid waste Management Plan	0.55
10.	Environment Monitoring Plan	1.30
11.	R & R Plan	9.98
	Grand total	163.43

After detailed deliberations, and considering all the facts of the project as presented by the PP including the Public Representations, the EAC has recommended the ***proposal for grant of environmental clearance*** with the following conditions:

i. As the submergence area is very large, micro-climatic change conditions in the project area during construction/post-construction period to be brought-out/reported at regular intervals.
ii. As diversion of 348.25 ha of forestland is envisaged in the project, Stage-I Forest Clearance is to be submitted for processing of grant of Environmental Clearance from the Competent Authority.
iii. Necessary permission to be obtained for quarrying borrow materials for the proposal as per the EIA Notification, 2006 and subsequent amendments thereof.
iv. Solid waste generated, especially plastic waste, should not be disposed of as landfill material. It should be treated with scientific approach and recycled. Use of single-use plastics may be discouraged.
v. Construction work to be carried out after following due procedure of the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
vi. Six monthly compliance reports shall be submitted to Regional Office, MoEF & CC, Chennai until completion of the modernization works.

vii. EIA/EMP report to be revised based on fish species availability from the secondary sources and presence of Tor sp.

Item No. 16.9 Any other items with the permission of the Chair.

During the meeting, the following decisions were taken regarding preparation of EIA/EMP reports and their presentation. Instructions are to be given to the PPs to follow these:

1. Hardcopies of the DPR or the detailed EIA, EMP etc. need not be sent to the EAC members. Only an Executive Summary (it should not normally exceed 25 pages) may be sent to the EAC members, preferably as a soft copy by email. This will save papers.
2. The Executive Summary should be sent at least 7 days before the meeting. Since the meeting are normally held around 27th day of the month, the target date for sending the Executive Summary would be 20th of the month. The PP are expected to abide by this time schedule.
3. There is no need to provide print copy of all documents to all members during the meeting. However, a few print copies may be kept ready for the EAC members who may ask for these.
4. Presently, the presentation sequence is: first the baseline data is presented for each aspect (air quality, noise, water quality, etc.); then the possible impacts are presented for each aspect; next, the mitigation measures are explained for each aspect; and finally financial provisions are stated.
5. Instead, organization of the information should be aspect wise. For any aspect, say water quality, present the baseline data, recommended norms for the various parameters for that aspect, the possible impacts, mitigation measures, the status of each parameter that will be achieved as a result of mitigation measures, and finally financial provisions.
6. Thus, it would be possible to better understand the present and future status of each aspect in one glance, without having to turn the page back and forth.
7. A new heading "status of each parameter that will be achieved as a result of mitigation measures" be included in the EMP report and its presentation. At present there is only a description of the mitigation measures, and financial provisions for the same. It is difficult to say whether the various parameters will be contained in reasonable limits or not. The *measurable impact* of mitigation measures, is crucial and *without this information the proposal will not be granted EC*.
8. The information provided under "status of each parameter that will be achieved as a result of mitigation measures" will be treated as a commitment by the project proponent and this commitment shall be the yardstick for any future assessment of the success, or otherwise, of proposed mitigation measures.
9. EAC encourages and expects the project proponents to give presentation; the consultants will provide support and may present a few aspects which the proponents find difficult to cover.

As no agenda item was left for discussions, the meeting ended with thanks to the Chairman.

LIST OF MEMBERS

16th MEETING OF RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) FOR RIVER VALLEY & HYDROELECTRIC PROJECTS

DATE : **27th July 2018**

TIME : **10:30 am onwards**

VENUE : **TEESTA HALL, INDIRA PARYAVARAN BHAWAN, NEW DELHI**

Sl.No.	Name of Member	Signature
1.	Prof. Sharad Kumar Jain, Chairman	
2.	Shri. T. P. Singh Member	Abs
3.	Shri. Sharvan Kumar, Member	
4.	Shri N. N. Rai, Member	
5.	Dr. J.A.Johnson, Member	27/7/18
6.	Dr. B. K. Das/ Dr. AK Sahoo Member	27.07.18
7.	Dr. Vijay Kumar, Member	Abs
8.	Prof. Govind Chakrapani, Member	G.J. Chakrapani
9.	Dr. Chetan Pandit, Member	
10.	Dr. Dinkar Madhavrao More, Member	
11.	Dr. R. Vasudeva, Member	Abs.
12.	Prof. S.R. Yadav, Member	
13.	Dr. Jai Prakash Shukla, Member	Abs
14.	Dr. Poonam Kumria Member	
15.	Dr. Kerketta, Member Secretary Director (IA-1)	27.7.2018