

Minutes of the 20th Meeting of the Expert Appraisal Committee for River Valley & Hydroelectric Projects held on 27.11.2018 at Teesta Meeting Hall, First Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-3.

The 20th meeting of the re-constituted EAC for River Valley & Hydroelectric Projects was held on 27.11.2018 with the Chairmanship (Acting) Dr. D.K. More in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, First Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-3. The following members were present:

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| 1. | Dr. D.M. More | - | Chairman (Acting) |
| 2. | Shri Sharvan Kumar | - | Representative of CEA |
| 3. | Shri N.N. Rai | - | Representative of CWC |
| 4. | Dr. J.A. Johnson | - | Representative of WII |
| 5. | Shri T.P. Singh | - | Member |
| 6. | Prof. S.R. Yadav | - | Member |
| 7. | Dr. S. Kerketta | - | Member Secretary |

Dr. S.K. Jain, Shri Chetan Pandit, Dr. A.K. Sahoo, Dr. Vijay Kumar, Prof. S.K. Kohli and Dr. (Mrs.) Poonam Kumria could not be present due to pre-occupation.

The deliberations held and the decisions taken are as under:

Item No. 20.0 Confirmation of minutes of 19th EAC meeting.

The Minutes of the 19th EAC (River Valley & Hydroelectric Projects) meeting held on 26.10.2018 were confirmed.

Item No. 20.1 Cumulative Impact Assessment and Carrying Capacity Study of Beas River Basin, Himachal Pradesh- Reconsideration of the study report before the EAC

Further to discussion on Cumulative Impact Assessment and Carrying Capacity Study of Beas River Basin, Himachal Pradesh in 19th EAC meeting, where Directorate of Energy, Government of Himachal Pradesh had made a presentation on the pending concerns of EAC. EAC deliberated in detailed and sought further information from Directorate of Energy to which they made presentation before EAC on the pending issues. As per the presentation including the facts presented by the Director of Energy, the Committee discussed the following:

Jobrie HEP (12 MW) – Govt. of Himachal Pradesh (GoHP) confirmed that as recommended by EAC, the HEPs will be developed as per the applicable norms and restrictions of project development in protected areas and Eco-sensitive Zones.

Manalsu HEP (21.9 MW) - A newly identified project falls within Manali WLS and was therefore recommended for dropping. However, on representation by the PP, EAC had asked State Govt. to submit the details of the locations of the project features of the Manalsu HEP *vis-a-vis* the boundary of the Manali WLS for further consideration of the EAC. Government of Himachal Pradesh submitted that diversion structure as well as part of tunnel falls within the Manali WLS while the rest of the components including powerhouse is outside the WLS. The project

envisages a drop type trench weir structure in the protected area thus involves minimum construction in the protected area. GoHP further submitted that it will be ensured that while executing the construction of intake structure, utmost care will be exercised to avoid any infringement to wildlife, etc. under any circumstances.

The matter was discussed in detailed by the EAC. It was deliberated that generally during the basin studies, consideration of overall impact of development of HEPs in the entire basin is taken and, projects falling in protected areas are out rightly dropped and therefore, Manalsu HEP was also recommended to be dropped and was accepted by EAC & Govt. of H.P. It was further discussed that while the project is considered on the request of the state government, the project will require wildlife clearance. It has been opined that let the matter be discussed in the State Board of Wildlife whether the portion of the project coming in the WLS be permissible activities and accordingly Wildlife Clearance be obtained from the Standing Committee on National Board of Wildlife. Accordingly, it has been opined that let the project be placed before the NBWL for its viability.

Bujling HEP (20 MW) – GoHP has submitted that they have accepted the recommendation that all the components of revised Bujling project should be outside the protected area as well as ESZ and it will be finalized after the final notification of ESZ of Dhauladhar WLS is notified.

Makori HEP (20.8 MW) - GoHP agreed with the recommendation of the report and confirmed that the allotment of project will be cancelled.

Palchan Bhang HEP (9 MW) and Bhang HEP (9 MW) - EAC asked the GoHP to submit a clear location map produced by a GIS showing contours in the region. GoHP has submitted the map as required for inclusion in the basin study report.

Four projects on Parbati River viz. Parbati HEP (12 MW), Sharni HEP (9.6 MW), Sarsadi HEP (9.60 MW) and Sarsadi-II HEP (9 MW) – GoHP presented that they have revised the project configurations and now only two projects are being planned on this stretch to ensure adequate free stretch between these two projects. As per the revised schemes, HEP I is 15 MW with a trench weir across Parbati river at around 600 m downstream of confluence of Baladi Nallah with Parbati river at Elevation of 1365 m and powerhouse on right bank at elevation of 1273 m. HEP II will be 20 MW with a diversion barrage across Parbati river downstream of HPPWD RCC bridge at elevation of 1245 m where the good rock is available on right bank. Powerhouse at elevation of 1135 m on right bank opposite to the village Jachani. This arrangement will ensure a minimum of 1 km of free flowing river stretch between FRL and TWL of projects in cascade manner. Once, all the information are provided for both the projects, the e-flow, etc. will be recalculated again and included in the River Basin Study.

Nakhtan HEP (460 MW) – GoHP submitted that an out of court settlement is being worked out, under which Nakhtan will not have diversion of Tosh Nalla. Diversion of Nakhtan project will be only on Parbati river where it should fall outside the boundary of Khirganga National Park as well as ESZ of Great Himalayan National Park Conservation Area (Khirganga National Park is a part). Based on the final project configuration, it will be considered by the EAC during environment clearance process.

Tosh Nalla will have independent schemes as:

Tosh I HEP (20 MW), presently 10 MW from 2280 m to 2480 m.

Tosh II HEP (25 MW), new project from 2490 m to 2690 m.

Tosh III HEP (32 MW), new project from 2700 m to 2960 m.

EAC discussed the matter and concluded that there is no objection to development of such schemes as long as at least 1 km free flow river stretch is available between FRL and TWL of projects in cascade and the projects on Tosh as well as on Parbati remain outside the ESZ of Khirganga National Park.

Kanda Pattan HEP - GoHP submitted that a new project, Kanda Patan HEP has been conceived in Beas basin which was not included in the study. The scheme will maintain the required riparian distance of about 1 to 1.5 km from TWL of upstream project and FRL of downstream project. The diversion site is proposed at around 600 m upstream of Neri bridge on Dharampur-Jogindernagar Road and powerhouse on the right bank at around 11 km downstream of the diversion site. EAC discussed the matter and concluded that the scheme can be considered in the basin study as long as the minimum of 1 km distance of free flow stretch is ensured from FRL of downstream project and TWL of upstream project.

E-Flow:

Based on the observation of EAC, GoHP has now worked out energy loss calculations due to implementation of environment flow recommendations by existing and under construction projects. GoHP has also submitted that some of the older projects do not comply even to the state government norms and are also not complying with NGT's order applicable to all rivers in the country for release of minimum environment flow by HEPs. GoHP requested EAC not to recommend environment flow as assessed in the basin study report for existing and under construction projects and they should be allowed to continue to follow the state government/NGT guidelines, which are comparable.

EAC deliberated the matter in detailed and concluded that environment flow in basin study has been worked out taking basin as a whole and irrespective of the fact whether there exists a project or a project is under construction or a project is proposed in future. It is based on scientific study and such recommendation should remain independent of the legal issues involved in implementation. Therefore, environment flow recommendation as per basin study should be applicable to all projects irrespective of their status of implementation. If GoHP finds it difficult to implement, GoHP can approach NGT or central government and deal with the matter separately.

EAC finally concluded all the discussions on Beas River Basin study and directed the Consultant to update/finalize the basin study report, keeping in view the matter discussed and recorded in various EAC meetings. The final Beas RBS report shall be placed again in the EAC meeting/s for finalization of the various recommendations therein.

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Item No. 20.2 Pinnapuram Integrated RESP-Storage Project in Tehsil Nandyal, District Kurnool, Andhra Pradesh by M/s Greenko Energies Private Limited - **For consideration of appraisal of Environmental clearance**
File No. J-12011/12/2018-IA.I (R), Proposal No. IA/AP/RIV/29585/2015.

The project was considered as per the provisions of EIA Notification, 2006 and amendments thereof. The Project Proponent and the Consultant, made a detailed presentation on the project. Proposed Standalone Pumped Storage Project (1200MW) is a part of Pinnapuram Integrated Renewable Energy Project (IREP) allotted by Government of Andhra Pradesh. EC is being sought for Standalone Pumped Storage component only.

Developer presented that the proposed IREP is a self-identified project and first of its kind in the world which can meet the dynamic needs of DISCOMs/STUs, through Schedulable Power on Demand (SPOD). The scheme envisages:

- 24 Hours Round the Clock (RTC) Base Load Energy
- 18 Hours Base Load Energy as per Demand
- 12 Hour Peak Load Energy (6 hours + 6 hours)
- Energy Storage Service, Grid Management, Frequency Management & Ancillary Services

The project envisages creation of two new reservoirs near Pinnapuram Village in Panyam Mandal, which is about 81 Km from Kurnool, Andhra Pradesh. It involves non-consumptive re-utilization of 1.20 TMC of water to be taken from existing Gorakallu Reservoir (live storage 12.44 TMC) to fill up Pinnapuram Upper reservoir. These proposed two new reservoirs are not located on any river course, the Gorakallu reservoir (existing) is a balancing reservoir and is located on a canal network.

The scheme envisages construction of:

- Rock fill embankments of average height of around 12 m to 14 m with maximum of 33 m height in lower reservoir and 35 m in upper reservoir for very short reach
- 45 m high RCC Intake structure
- 6 Nos. of 760 m long and 7.0 m dia. inclined circular steel lined Penstock/ Pressure Shaft five for each unit of 200 MW and one bifurcated into two penstocks to feed two units of 100 MW.
- A surface Power house having an installation of 7 Nos. reversible Francis turbine - 5 each of 200 MW capacity and 2 each of 100 MW capacity; operating under a rated head of 119.27 m in generating mode and 125.77 m in pumping mode.
- 70 m wide concrete lined Tailrace channel with FSD of 6.00 m and 1300 m long connecting Tail race channel to the lower reservoir.

Total land requirement is about 713.65 ha, out of which 365.66 ha is forestland, 119.65 ha is Private land and 228.34 ha is Government/ Assigned Land. Online

application for diversion of 365.66 ha of forestland has been submitted vide proposal No. FP/AP/HYD/35371/2018 dated 28.08.2018. The private land to be procured for the Project does not involve any resettlement. Private land acquisition will be as per the provisions issued through the **G.O.MS. No. 389 dated 20-11-2014** by the Government of Andhra Pradesh. The private land required for the project is to be purchased through direct negotiations between landowner and Project Proponent.

The break-up of the required land (in ha) details are as below:

| Sl. No. | Components | Total Area | Forest Land | Non-Forest Land | |
|--------------|---|------------|-------------|-----------------|-----------------|
| | | | | Pvt. | Govt./ Assigned |
| 1. | Upper Reservoir | 280.17 | 0.00 | 107.00 | 173.17 |
| 2. | Intake Structure | 10.61 | 8.02 | 0.00 | 2.59 |
| 3. | Penstock | 6.96 | 6.96 | 0.00 | 0.00 |
| 4. | Power House & TRC Outlet | 22.50 | 22.50 | 0.00 | 0.00 |
| 5. | Tail Race Channel | 16.83 | 2.43 | 0.48 | 13.92 |
| 6. | Lower Reservoir | 319.02 | 319.02 | 0.00 | 0.00 |
| 7. | Pot Head Yard | 0.25 | 0.00 | 0.00 | 0.25 |
| 8. | Roads | 10.76 | 6.73 | 0.00 | 4.03 |
| 9. | Contractor facilities, cement and E & M stores, temporary colony area, etc. | 10.50 | 0.00 | 4.93 | 5.57 |
| 10. | Muck disposal areas | 21.00 | 0.00 | 7.24 | 13.76 |
| 11 | Pumping & Other facilities | 15.00 | 0.00 | 0.00 | 15.00 |
| 12 | Magazine | 0.05 | 0.00 | 0.00 | 0.05 |
| TOTAL | | 713.65 | 365.66 | 119.65 | 228.34 |

There is no National Park/Wildlife Sanctuary within 10 km radius of the project area. Total cost of the project is about Rs. 5468.03 Crores including 1289.75 crores interest during construction.

First Scoping Clearance for Pinnapuram Pump Storage Scheme with capacity of 1000 MW (as part of Integrated Renewable Energy Project) was issued by MoEF&CC on 17.05.2018. Revised Scoping Clearance due to change in project capacity from 1000 MW/8000 MWH to 1200 MW/9600 MWH, other project features, location and land requirement, was issued vide letter No. J-12011/12/2018-IA.I (R) dated 25.09.2018. Baseline Data was collected for 3 seasons – lean (January 2018), Pre-monsoon (May 2018) and Monsoon (August, 2018).

For collection of baseline data, study area has been delineated as per approved ToR i.e. area within 10 km radius of the main project components like Pump house, Power House, Balancing reservoirs and approach road, etc. Primary data was collected through field surveys in different seasons i.e. winter/lean season, pre-monsoon/summer and monsoon for soil fertility, ambient air quality, ambient noise level, traffic density, water quality (surface as well as

groundwater), flora and fauna with in the study area. Baseline data was discussed in detailed along with impacts during construction and operation phase of the project. To mitigate the potential impacts, mitigation measures are suggested and environment management plans have been proposed along with budget for implementation. Following activities are proposed under Environmental Management Plan:

- (i) For Biodiversity Conservation & Management plan budgetary provisions of Rs. 310.00 lakhs have been allocated for activities like Wildlife Habitat Preservation & Improvement, Establishment of Eco Park, Sowing of Grass, Biodiversity monitoring, Awareness promotion, Strengthening of Infrastructural Facilities of Forest Department, etc.
- (ii) Muck Dumping & Management plan has been prepared for dumping of excavated muck. The total quantity of muck likely to be generated from excavation is about 9.73 million m³. About 7.61 million m³ of excavated muck is expected to be utilized for rockfill and aggregate for construction. Total quantity of muck proposed to be disposed in designated muck disposal area, after considering 40% swelling factor would be 2.97 million m³. For the disposal of 2.97 million m³ of muck an area of 21 ha has been identified. A provision of Rs 480.85 lakhs have been earmarked for muck management.

Other Components of EMP were also discussed along with the budget provisions. Total amount proposed for implementation of Environmental Management Plan (EMP) is Rs. 128.92 Cr with the details as under:

| S. No. | Management Plans | Amount (Rs.in Cr) |
|---------------|--|--------------------------|
| 1. | Biodiversity Conservation & Wildlife Management Plan | 3.10 |
| 2. | Muck Dumping and Management Plan | 4.81 |
| 3. | Solid Waste Management Plan | 2.01 |
| 4. | Public Health Delivery System | 1.68 |
| 5. | Energy Conservation Measures | 1.8 |
| 6. | Landscaping, Restoration & Green Belt Development Plan | 1.67 |
| 7. | Compensatory Afforestation Plan* | 101.69 |
| 8. | Air, Water & Noise Management Plan | 1.63 |
| 9. | Environmental Monitoring Program | |
| 10. | Corporate Environment Responsibility Plan | 10.53 |
| Total | | 128.92 |

**Actual cost of Compensatory Afforestation will be finalized by forest Department.*

EAC discussed in detailed the activities to be taken under CER and budget thereof. EAC suggested that in consultation with local authorities and affected villages, the project should focus on fully developing few key areas to permanently strengthening basic activities in the project area. EAC also observed that budget proposed for CER is less than that of mentioned in OM No. 22-65/2017-IA.III dated 01.08.2018; which is 0.5% of the capital

investment for greenfield projects with capital investment greater than Rs. 1000 crore and less than equal to Rs. 10,000 crore.

As per the provisions of EIA Notification, 2006, the public hearing was conducted near Mandal Parishad Upper Primary School, Pinnapuram Village, Kurnool, Andhra Pradesh on 02.11.2018 by the Andhra Pradesh Pollution Control Board. Issues discussed and demands raised during Public Hearing were deliberated in detailed by the EAC and it was recommended that for development activities as part of CER, public demand should be considered. PP confirmed that there is no court case pending against the project as of date. After detailed deliberations, and considering all the facts of the project as presented by the PP including the Public Consultation, EAC has recommended the proposal for grant of environmental clearance with the following additional conditions:

1. The EAC deliberated on the Corporate Environment Responsibility (CER) Plan and noted the activity plan and the budget provided under the CER Plan based on the Capital cost of the project, as per the norms of the Ministry's OM F.No 22-65/2017-IA.III dated 01.05.2018 and further emphasized to focus and give priority to provide drinking water facility in the affected villages.
2. All required permissions if any should be taken for the proposed Muck Dumping areas. Adequate protection measures should be taken up to avoid any spillage of muck to the adjoining agricultural fields.
3. Under CER activities, preference should be given to strengthen the basic amenities in the project affected villages like maintaining drinking water supply, providing health care facilities, etc.
4. Preference to be given to the local villagers as per the requirements and suitability, in the job/ other opportunities in the project.
5. Measures to be taken to develop skills of the local villagers particularly with respect to the trades related to construction works such as electrician, welder, fitter, etc.
6. Approval of Central Electricity Authority may be obtained for 1200 MW Pumped Storage Project.

Item No. 20.3 Koshi-Mechi Intrastate Link Project (Construction of Canal of 76.20 km long) on the existing barrage beyond existing Eastern Koshi Main Canal (41.30 km) for irrigation purpose under Koshi-Mechi Intrastate Link Project in the State of Bihar. Discussion on the site visit of the Sub-committee (File No. J-12011/22/2016-IA.I& Online No. IA/BR/RIV/57622/2016)

The ToR for the project was granted by MoEF & CC on 23.09.2016. The project was first deliberated in the 16th meeting of the EAC held on 27.07.2018 for grant of environmental clearance. The project was considered as per provisions of EIA Notification, 2006 and amendments thereof.

The Kosi-Mechi Intrastate link project proposes to connect River Kosi and Mechi passing through Supaul, Araria, Purnia and Kishanganj Districts of Bihar. The project is undertaken 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 km 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 re-modelling 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 forest land in the canal alignment. 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 project proponent clarified all the queries/issues pertaining to them.

The EIA/EMP report was presented in 16th EAC meeting held on 27th July 2018 wherein EAC recommended for a site visit by a Sub-committee for site inspection and examine the revised CAD plans, pressurized irrigation system, fish species, environmental matrix and revised EMP.

Further, EAC asked PP to address the following issues before the proposal is resubmitted for environmental clearance:

1. Environmental matrix provided in the EMP be revisited and revised accordingly.
2. PP may consider conjunctive use of water.
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 reference 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. Plan be prepared to irrigate minimum 10% of CCA through pressure irrigation technique

5. CAD plan be revised based on the actual ground reality and accordingly the EIA/EMP report be revised and submitted.
6. EMP cost be revised based on the mitigative measures suggested including re-appropriation of capital budgets on different heads of the EMP.

The Sub Committee of MoEF&CC visited the Kosi Project from 28.09.2018 to 30.09.2018. The site visit report was deliberated in the 19th EAC meeting.

PP presented the case on 27.11.2018 before the EAC. The main observations/recommendations to the Sub-committee and the reply made by the PP in the meeting are tabulated as follows:

| Observation of EAC sub Committee | Reply of PP |
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| There appears to be no problem from the design and construction point of view in taking up of the works of canal system in the extended portion. The activity seems to be conventional one. | The detailed design of remodeling up to 41.30 km and extended have been duly prepared by NWDA and approved by CWC. |
| It was noticed that freshwater prawn forms major catch in the upstream of the canal which has not been reported in the EIA report submitted for EC. During market survey, it was recorded that migratory fish species such as Tor sp. (Mahseer) distant migrant, Eutropiichthysvacha local migrant fish species, etc. were not mentioned. | Has been incorporated into the report as well as compliance submitted. |
| It was learnt that the capacity was proposed to be enhanced by widening the canal section. For such a venture, the problems to be faced at full cutting, partial cutting and full banking canal sections will be different. | The discharge will increase due to enhancing the bed width as well as lining of entire canal system. The necessary action will be taken to reuse canal system from full cutting to full banking wherever necessary. |
| By providing lining to the existing canal section over the entire length, the carrying capacity of the canal section could be enhanced sizably. If required, FSD of the canal could be raised by raising the bank work suitably. For sections in cutting, there may not be any problem. For better operation of the canal, the FSD could be regulated through the intervention of cross regulators. The extended canal for its entire length of 76.2 km is going to be lined one. | The carrying capacity of the canal will be increased (a) By lining of the canal (b) Increasing Bed width (c) Enhancing depth of canal |

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| <p>The critical issue will be of increasing the carrying capacities of the existing siphon conduits. This has to be dealt with very carefully.</p> | <p>The canal syphon design have been duly prepared by NWDA and available in Vol-II. Various engineering details have been prepared with meticulous details.</p> <p>The list of head regulator upto 4.57km and bridges parallel to syphon will not be changed. However additional bridge spans will be provided for the bridge to cover the extra width of canal.</p> <p>In a specific case for design of syphon at Sanjay Dhar, the following designs are available in DPR Vol-II prepared by NWDA.</p> <p>Hydraulic Design of link canal section for Reach-I (from R.D 4.570km to 13.350 km)</p> <p>Design of Syphon across river Sanjay Dhar at R.D 6.744 km.</p> |
| <p>It would be advisable to observe the performance of the remodelled section with various alternatives on a hydraulic model.</p> | <p>The W.R.D of the Gov. of Bihar proposes to carry out a hydraulic modelling study at the Central Water and Power Research Station (CWPRS) Pune to validate the engineering design and analysis already proposed for remodeling work.</p> |
| <p>The excavated muck from the canal section is dumped on either side in a haphazard way. A proper shape to the spoil banks/ landscaping improves the surroundings and environment. This is to be taken care of.</p> | <p>This aspect has been duly considered and immediate priority action has been initiated.</p> |
| <p>The up-keeping of the canal portion was not to the expected level. Bushes and shrubs were seen growing at rampant on the canal sides.</p> | <p>Maintaining of banks, silt removal, weed clearance, laying good earth on bank, rooting out shrubs, maintaining of service road, providing catch drain and slope drain on bank slope and oiling and greasing of gates of regulator and other would be done as per norms and guidelines of WRD, Gov. of</p> |

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| | <p>Bihar where ever/ whenever required as per site condition.</p> <p>Excavated silt will be disposed in depressed low land, in command area in an orderly manner and this is considered under priority. Further landscaping along the canal will be improved both from safety and aesthetics point of view.</p> |
| <p>The average rainfall in the area is around 1,500 mm and therefore, the proposed irrigation during kharif is going to remain as protective irrigation only. There is no dearth of groundwater. There are shallow bamboo tube wells (of 10 to 15 feet) and groundwater could be utilized for rabi and summer crops. The river Koshi carries sizable discharge even during summer season. The existing irrigation (up to RD 41.3 km) is practiced for Kharif and rabi seasons. It was not understood as to why they have put ban on Rabi irrigation for the extended command. Alternatively small village tanks, farm ponds could be developed in the entire command of the EKMC and Koshi-Mechi canal and decentralized storages could be created in the kharif season with canal water. This stored water could be used for doing irrigation in rabi and hot weather seasons with micro irrigation method. There is ample groundwater at the 3 command of the farmers. The area at places was seen water logged. This will take care of water requirement of perennial crops like banana, sugarcane and so on. With this background in the days to come the system could be converted to perennial one.</p> | <p>Utilization of the non-monsoon water of Kosi is likely to affect Indo-Bangladesh Agreement on Ganga River. This imposes a minimum flow to be maintained in Ganga at the Farakka in lean season.</p> <p>Impact on D/s proposed project installed capacity 26X5=130 MW at Baghmara-30km D/S of barrage on Kosi river. So presently the project is restricted to Kharif season only.</p> <p>The point raised will be duly considered to utilize ground water which is available in plenty. The groundwater of Araria, Purina and Katihar remains between 2 to 5 m bgl. The conjunctive use will be duly considered as it will reduce water logging and help farmers to develop some rabi crops and perennial crops like Banana and sugarcane.</p> |
| <p>In the extended command, about 20% area has been proposed to be developed under micro irrigation system. It is basically for enhancing the productivity and quality of the agri-produce, in addition, it saves plenty of water. More and more area can be planned to be brought under micro irrigation in the</p> | <p>Command area survey work in 10% of CCA has been done and survey plan has also been enclosed in DPR of this project. Further course of action be initiated at the time of implementation of the project. Govt. of Bihar will take</p> |

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| <p>days to come and water could be saved. The water stored in the secondary storages in the command, use of groundwater and also the water saved in micro irrigation could help to transform the entire command into a perennial farming. Additional area from the Mahananda basin (left over as un-irrigated) could also be brought under irrigation with the help of the increased water availability as explained above. The land holding in this area is very small and therefore, it will be very much necessary to support farmers with irrigation facility.</p> | <p>necessary steps to introduce pressurised irrigation as demonstrative steps so that pipelines can be laid underground.</p> |
| <p>The project involves remodelling of existing EKMC up to R.D. 41.30 km and construction of new canal up to RD 117.50 km. The discharge of canal will increase from present 425 cumecs to 573 cumecs. This will also involve remodelling of existing structure like canal siphons and head regulators of the branch canal, distributaries with cross regulators and escapes. PP (WRD, Govt. of Bihar) shall submit their programme to undertake such remodeling work.</p> | <p>The remodeling of canal from 00 km to 41.30 km is under active consideration of government of Bihar after getting EC.</p> <p>It is proposed to continue the remodeling without affecting the existing system as far as practicable. However it is proposed to curtail the rabi irrigation partly and to avail 5 to 6 months in winter and summer months for remodeling works.</p> <p>The WRD, Gov. of Bihar will fully involve NWDA as well as a highly competent organization to workout modalities and time scheduling without much disruption of the work.</p> |
| <p>The maintenance of canal needs improvement. Particular attention should immediately be given in head reaches where the canal needs proper re-sectioning as well as proper dumping of excavated silt with landscaping wherever</p> | <p>As regards disposal of excavated silt at R.D 1.6 km from silt chamber, the same will be disposed in depressed low land, in command area in an orderly manner and this is considered under priority. Further landscaping along the canal will be improved both from safety and aesthetics point of view.</p> |
| <p>Water quality particularly variation of water temp., DO, pH, TS and alkalinity, Phosphate, Nitrate at the site of joining</p> | <p>The details of the same has been provided</p> |

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| of Kosi with Mechi (Upstream and downstream of joining point). E.coli data to be provided. | |
| Fish species available upstream and downstream of joining point in Mechi river to be provided. | Fish species available in Kosi canal has been revised and fish species available upstream and downstream of joining point in Mechi river has also been provided by the proponent. The details of the same has been provided |
| Possibility of fish pass in the Kosi canal (if possible) for efficient migration of Tor sp. to be explored. | The Hanuman Nagar Barrage head regulators of EKMC have 7 Nos. of gates discharging 85 cumecs each. The 7 Nos. of gates will remain fully open in kharif and partly open in rabi season which will act as fish pass, however separately, fish pass may be considered later. |
| Inventorization of fish species available in the Kosi canal to be revisited. | The details of the same has been provided |

Revised EMP cost is tabulated as follows:

Total Cost (in lakhs) Estimates for implementation of EMP

| S.No. | Plans | Cost |
|-------|---|----------|
| 1. | Free fuel to labourers | 16.35 |
| 2. | Ground Water Management | 85.82 |
| 3. | Public Health Management | 1526.78 |
| 4. | Environmental Monitoring Plan during Construction (5 years) | 53.80 |
| 5. | Plantation | 62.00 |
| 6. | Training of the Project Staff | 7.50 |
| 7. | On-Site Farmers Training | 2.00 |
| 8. | Drainage | 12751.09 |
| 9. | Escapes | 1696.37 |
| 10. | Communication | 16654.96 |
| 11. | Environmental Monitoring Programme | 53.60 |
| 12. | Management in Irrigated Areas | 1628.52 |
| | Grand Total | 34539.33 |

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

- i. The EIA / EMP report with the incorporation of the additional / revised data as put up in the meeting be submitted at the earliest.

- ii. Necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and subsequent amendments thereof.
- iii. Solid waste generated, especially plastic waste, etc 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.
- iv. Six monthly compliance reports shall be submitted to Regional Office, MoEF & CC, Ranchi until completion of the modernization works.
- v. The designs of eastern Kosi main canal for its entire length including the existing length of 41.3 km has been prepared by NWDA and approved by CWC. The re-modelling of the old canal involves dismantling of the existing syphon structures for enhancing the canal carrying capacity. In view of the likely difficulties involved in dismantling, etc. an alternative be thought up and relooked accordingly.

Item No. 20.4 Dikhu (186 MW) hydroelectric project in Longleng district of Nagaland by M/s Naga Manu Power Private Limited - For consideration of appraisal of ToR/scoping clearance. File No. J-12011/18/2008-IA.I and Proposal No. IA/NL/RIV/84402/2017.

The Project Proponent (PP) and R.S Enviro Technologies Pvt. Ltd made a detailed presentation on the project and *inter alia* provided the following:

- i. The Dikhu HEP (186 MW) project is proposed on Dikhu river near Tamlu Village in Longleng District of Nagaland. The project envisages construction of 112 m high rock-fill dam about 380 m downstream of the confluence of Dikhu and Yangnyu rivers to generate hydropower with an installed capacity of 186 MW. The catchment area of the project is 2845 Sq. km. The total land requirement for the project is 2440 ha. Total submergence area is about 2320 ha including river bead area. No forest land is involved in the project. The balance area of 120 ha is for project components. The submergence area will be spreading over 19 villages which will be affected due to this project. A surface power house is proposed near toe of the dam with 3 units of 62 MW each. Total estimated project cost is about Rs. 1994.74 crores and proposed to be completed in 52 months.
- ii. The PP informed that the Scoping/TOR clearance to this project was accorded on 26.2.2013. Thereafter, the Ministry extended the validity of TOR 2 time with an outer time limit of 5 years. The PP could not complete the studies within the stipulated time. The PP mentioned that as per MOA, the responsibility of Government of Nagaland (GoN) to acquire the land required for the project. The land survey has not been completed and now a Nodal officer has appointed by Government of Nagaland for processing the work for land acquisition. Therefore, the delay occurred. However, the most of work for preparation of EIA/EMP has been completed in the project. After finalisation of the land survey and acquisition of Government of Nagaland, the socio-economic survey will be incorporated in the report. Hence PP applied for fresh scoping/TOR clearance for the project and submitted online application on 2.11.2018.
- iii. The project proponent informed that out of total 19 villages involved, details for 12 villages have been surveyed and work did not progress much during

2017 in view of the floods and other related issues with the project. Government of Nagaland actively involved and already completed survey in 2 more villages. The complete process is expected to take about 8-9 months. The project financial closer in advance stage of finalisation. It was informed that after completing all the tasks, the PP will apply for environmental clearance. The project proponent also informed that no forest land is involved in the project which was inadvertently mentioned earlier TOR letter.

The EAC deliberated on the proposed project in detailed based on the information provided by the PP and felt that the request made by PP appears reasonable and therefore, **recommended for grant of fresh 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. The PP should complete all the tasks including conducting public hearing and submit the application for final clearance within the stipulated time.

Item No. 20.5 Sita Rama Lift Irrigation Project (Phase I) in Bhadradri Khammam district of Telangana by Irrigation and CAD Department, Government of Telangana- for reconsideration of appraisal for grant of Environmental Clearance. File No. J 12011/16/2017-IA.I (R) and Proposal No. IA/TG/RIV/82147/2017

The detailed of the proposed project is as follows:

The proposed Lift Irrigation project is to divert Godavari River water from upstream of existing Dummugudem Anicut to irrigate 2,72,921 ha (new Ayacut 1,33,085 ha and stabilization 1,39,836 ha) of Bhadradri Kothagudem and Mahaboobabad Districts of Telangana. The Dummugudem Anicut is located at Dummugudem village in Bhadradri Kothagudem District of Telangana. The project is likely to benefit 180 villages in 3 districts of Telangana state. The project is to provide water for irrigation for new command as well as en-route tanks, villages, towns and supplement some of the existing/proposed irrigation schemes. The total land requirement for the project is 8,476.84 ha, out of which 1531.06 ha is forestland, private land is 4818.15 ha and government land is 2127.63 ha. Stage-I forest clearance has been accorded vide letter dated 4-TSA113/2017-CHN/0188 dated 02.02.2018. Recommendation for NBWL clearance has been given vide letter No. 6-26/2018WL dated 18.04.2018. The total submergence area is 1,930 ha. About 157 villages consisting of 9,696 families are likely to be affected due to this project. The total cost of the project is about Rs. 13,384.80 Crores and it is proposed to be completed in 3 years. Rs. 1643.52 crores have been estimated towards EMP cost. A total amount of Rs. 986.90 crores has been earmarked for R & R implementation.

The Scoping/TOR clearance for the project was accorded on 04.08.2017.

The project proponent informed that net water availability at Dummugudem anicut in 75% dependable year is about 1609 TMC of water on prorata basis. After utilizing (i) 180 TMC water for Kaleswaram, (ii) 50 TMC of water for Devadula, (iii) proposed utilization of 364.2 TMC of water for ongoing projects and (iv) proposed utilization of 762.9 TMC of water for future projects, the net availability at Dummugudem in 75% dependable year is about 251.8 TMC of water, out of which 70 TMC of water would be needed for the proposed project. A provision of 3 TMC of water made available for providing drinking water facility in the command area for about 58.18 lakh people. The project envisages construction of Head Regulators only at Dummugudem Anicut to draw water from Godavari river through approach channel with CBL at EL 45 m. No construction of dam and barrage is involved in this project. Main components of the project are:

- i. construction of Head Regulators only at Dummugudem Anicut on River Godavari,
- ii. construction of lined canal of about 372 km,
- iii. construction of 4 pump houses and delivery cisterns,
- iv. laying of pumping main of about 9 km,
- v. cross drainage works across main canal, and
- vi. construction of tunnels and cross regulators and off-take, etc.

The project has been granted Stage-I FC clearance vide letter No. 4-TSA113/2017-CHN/0188 dated 2.2.2018 and has been recommended for NBWL clearance vide letter No. 6-26/2018 WL dated 18.4.2018.

Public Hearings were conducted in all the three districts of Telangana i.e. (i) at Zilla Parishad High School, Patwarigudem (V), Dammapeta (M) in Bhadradri-Kothagudem on 25.8.2018, (ii) at Zilla Parishad High School, Village Manchukonda, Raghunadhapalem in Khammam on 29.8.2018 and (iii) at Agriculture Market committee, Garla (V&M) in Mehabubabad on 6.9.2018 as per the provisions of EIA Notification, 2006.

The PP informed that all the issues raised during the Public Consultation have been incorporated in the EIA/EMP report. Thereafter, the final EIA/EMP reports were submitted to the Ministry for environmental clearance. The main issues raised during public hearing are – implement safety measures in blasting operations & use latest technology in carry blasting operations, dust control measures, implement the 1 of 70 ACT and PESA Act to tribes, pattas to tribes for their cultivated lands, compensation for crops, proper land survey because revenue records are having mistakes, tribes are not getting proper information, Bayyaram tank to made as reservoir, employments to the land losers, provide skill development and education to children, etc. The project proponent clarified all the queries/issues pertaining to them. Majority expressed happiness over the implementation of the project.

The various environmental aspects covering catchment area, submergence area and project influence area, i.e. area within 10 km radius from main project components (including canal network and gross command area) have been considered. The baseline data (monsoon season – September, 2017, winter season – January, 2018 and summer season – April, 2018) has been

collected covering Physico-chemical aspects, biological aspects and socio-economic aspects. Three (3) 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 project proponent informed that at the preliminary survey i.e. at TOR stage, the tentative figures in land requirements have been presented/ projected. While collecting the data & conducting the study, the figures have been firmed-up and the exact land requirements have been projected in EIA/EMP reports.

Break-up of Land details of Sita Rama Project

| Head | At TOR stage (ha) | Study and analysis stage/ firmed-up at EIA/EMP stage (ha) |
|--------------------|--------------------------|--|
| Total land | 4,885 | 8,476.84 |
| Forest land | 1,930 | 1,531.06 |
| Private land | 2,955 | 4,818.15 |
| Govt./Revenue land | -- | 2,127.63 |

The salient features of the project in the EIA/EMP reports are as under:

- i. The R&R Plan – Right to fair Compensation and Transparency in land Acquisition, Rehabilitation and resettlement Act, 2013 and modified Telangana Act, 2016 for Government lands and encroachment land shall be followed for project affected families (PAFs). An amount of Rs. 98690 lakhs have been earmarked for this purpose.
- ii. Local Area development Plan has been proposed – under this up-gradation of educational facilities in 40 primary schools, improvement of public health facilities, improvement of drinking water facilities, construction of community toilets and development of Industrial Training Institute etc. have been proposed. An amount of Rs. 6895 lakhs have been earmarked for this purpose.
- iii. The project is likely to generate 3,46,443 m³ of muck due to excavation, out of which 1,21,255 m³ of muck will be utilized for various project components (all along the canals and at the entry & exist points of the tunnel and either side of the canal) and remaining 2,25,188m³ will be dumped in 2 designated dumping sites covering an area of 13 ha. The sites will be rejuvenated using biological measures and afforestation with suitable local species. An amount of Rs. 2.30 crores are allocated for the purpose.
- iv. The compensatory afforestation programme will be taken-up in 3062.12 ha of degraded forest land which is double the forest land diverted for the project. An amount of Rs.58.47 crores are allocated for the purpose.
- v. The Biodiversity Conservation and Management Plan have been proposed in consultation with State Forest Department. An amount of Rs.8.95 crores are allocated for the purpose.
- vi. About 257.1154 ha of area in Manuguru Forest Division and 185.8437 ha of area in Paloncha Forest Division is falling in ESZ of

Kinnerasani Wildlife Sanctuary. Some important measures stipulated in NBWL clearance vide letter No. 6-26/2018 WL dated 18.4.2018 are as follows:

- a) Provide water from the pipeline passing through wildlife area for filling-up percolation tanks and saucer pits and locations indicated by Forest department.
- b) Works shall be carried-out manually without disturbing flora and fauna.
- c) Debris due to excavation of the work shall be transported out of ESZ area on a daily basis.
- d) User agency shall construct masonry pillars to demarcate the proposed area at every 25 m interval.
- e) Material for carrying-out the proposed works shall be kept outside the Tiger Reserve only.
- f) An amount of Rs.118.216 lakhs are allocated for mitigation measures to minimize the impact on wildlife of the area.
- g) Green belt will be developed around various appurtenances of the project, project colony etc. is proposed with local plant species (fruit, ornamental, shade trees, shrubs, climbers etc.) is proposed about 50 ha of area. A grant of Rs.50.00 lakhs has been allocated for this purpose.

Project includes four lifts in series. The calculations made for economic feasibility for the individual lifts and also for the project as a whole were made available after the EAC meeting.

For running the lifts, the power requirement will be high. However, 11 kV main transmission line is passing near the project, so power supply will be arranged from this TL. The details cost of the lifts are provided below:

| Name & Number of Pump House | Power requirement in MW | Rate/ KWH | Total power charge in Crores | Power Charges (Rs. in cr) | O & M cost (1 % of Initial cost) per year | Annual Cost | Benefit in Crores |
|--|-------------------------|-----------|------------------------------|---------------------------|---|---------------|-------------------|
| SRLIP- Stage-1 (Pump House-1 at km 10.500 near B.G. Kotturu (V), Aswapuram Mandal) | 150 | 6.40 | 230.40 | 77.41 | 8.9759 | 95.36 | 1128.19 |
| SRLIP - Stage-2 (Pump House-2 at km 43.950 near V.K. Ramavaram (V), Mulakalapalli Mandal) | 240 | 6.40 | 368.64 | 117.36 | 8.5896 | 134.54 | 1069.08 |
| SRLIP -Stage-3 (Pump House-3 at km 57.075 near Kamalapuram (V), Mulakalapalli Mandal) | 260 | 6.40 | 399.36 | 125.46 | 11.2036 | 147.87 | 1054.92 |
| Pump House No. 4 at Dippagudem(V), Dammapeta (M) | 40 | 6.40 | 61.44 | 1.94 | 3.88 | 9.70 | 105.81 |

The water availability details for the entire project are as below:

| S.No. | Source of Water | Water available (TMC) |
|-------|-----------------|-----------------------|
|-------|-----------------|-----------------------|

| | | |
|----|---|-------------------|
| 1. | Diversion of water from Godavari River | 69.5 |
| 2. | Use of ground water due to irrigation recharge and to be used conjunctively | 5.35 |
| 3. | Total | 74.85 |
| 4. | Less due to supply of drinking water | 1.05 |
| 5. | Less due to evaporation loss | 4.09 |
| 6. | Net Total | 69.71 (say 70) |

The Project Proponent (PP) and the WAPCOS (Consultant) made a detailed clarification of the additional information sought earlier by the EAC and *inter-alia*, provided the following information:

- i. The CWC vide letter no. CWC ID No. 6/300/2018 – PA(S)/2684-87 dated 30.8.2018, CWC examined report from hydrological angle and mentioned that “*the net average, net yield series available at 50% dependability and yield series available at 75% dependability at Seetharama Project has been worked out as 24545.47 MCM (866.72 TMC), 22021 MCM (777.57 TMC) and 9426.74 MCM (332.87 TMC) respectively. The same may be utilized for further planning purpose of the project*”.
- ii. Cost Estimate of EMP: EAC earlier observed that there are some errors in tabulating EMP cost estimates. The errors have been corrected and a detailed breakup of Environmental Management Planning for the SRLIP Project is provided:

COST ESTIMATES - EMP (AFTER CORRECTION)

| Item | Cost (Rs. Crore) |
|---|-------------------------|
| Compensatory Afforestation and Bio-diversity conversation | 73.72 |
| Environmental Management in labour camp | 14.87 |
| Public health delivery system | 3.76 |
| Restoration and Landscaping of construction sites | 4.05 |
| Greenbelt development | 0.50 |
| Air, Water and Noise Pollution Control Measures | 1.15 |
| Energy Conservation measures | 0.50 |
| Public Awareness Programmes | 0.50 |
| Resettlement and Rehabilitation Plan | 986.90 |
| Local Area Development Plan | 68.95 |
| Monitoring and Evaluation of Social Aspects | 0.60 |
| Muck Management Plan | 2.30 |
| Environmental Monitoring during construction phase | 0.73 |
| Purchase of noise meter | 0.015 |
| Purchase of Meteorological instruments | 0.070 |
| Water Quality Testing Kits | 0.10 |
| Total | 1158.715 |

The EAC after detailed deliberations and considering all the facts of the project as presented by the PP, **the EAC recommended for grant of environmental clearance (EC) for the proposed project** and observed that a

copy of the Inter-state issue considered by CWC be submitted to Ministry before issue of environmental clearance (EC)

Item No. 20.6 Ujh (196 MW) Multipurpose Project Billawar, district Kathua, J & K by M/s JKPDC- For consideration of appraisal of ToR/scoping clearance. File No. J-12011/39/2014-IA.I and Proposal No. IA/JK/RIV/84991/2018.

Ujh Multipurpose Project in District Kathua is a National Project and is being implemented by the J&K State Power Development Corporation as a State sector Project. The Project is a multipurpose project with intended benefits of hydropower, irrigation and drinking water.

Ujh River joins by another other four tributaries at Panjthirithi. The dam site is located in village Barbari about 1.6 km downstream of Panjthirithi. Power House is in village Deoli about 9.5 km downstream of dam site. The barrage is located about 1.5 km downstream of powerhouse.

The installed Capacity of the proposed project is 196 MW (186 MW for the main powerhouse, and 10 MW for Dam toe powerhouse). The project envisages a 116 m high dam to store 925 MCM of water, and a barrage downstream to irrigate 16,743 ha (Culturable Command Area, CCA) through Right Main Canal and Left Main Canal in District Kathua and District Samba in addition to Hydro Power Generation.

The project also has indirect benefits like flood moderation, pisciculture, tourism & other progressive development parameters of these areas. The project shall, thus, enable proper utilization of water, which is going unutilized to Pakistan.

The detailed Project Report for the Project has been prepared/updated by the Indus Basin Organization (IBO) wing of the Central Water Commission. However, EIA/EMP studies have not been completed yet. The Advisory Committee of the Ministry of Water Resources, RD & GR considered the project for appraisal on 16.11.2016. The Committee constituted a team headed by the CE (IBO), Chandigarh, with JKSPDC being represented by the CE, CI&D Wing, Jammu. The team was mandated to explore alternate options for the project with reduced submergence/displacement along with minimum loss of power and irrigation benefits so that the potential of east flowing rivers is utilized as per the Indus Water Treaty.

The team visited the site on 16.03.2017. It was decided that the reduction in the submergence/displacement can be achieved only through reduction in the dam height which in turn has a bearing on the command area. Accordingly, vide letter dated 17.03.2017, the J&K I&FC Department was approached to identify and firm up the Culturable command Area, so that final recommendation of the constituted team can be firmed up. The said information was forwarded to the Central Water Commission, who were requested to work out the project alternatives, while ensuring minimum submergence/ PAFs and maximum utilization of available water for irrigation and power generation purposes.

Accordingly, the CWC revised the DPR and submitted it to J&K Govt. in December, 2017. As per revised DPR, the Maximum Water Level (MWL) is 609.5 m, Full Reservoir Level (FRL) is 608.00 m. The area under submergence has decreased to 34.50 km² from 41 km² and number of families affected due to submergence decreased to 1698 from 2235. The total cost of the project as envisaged in DPR is Rs 4750 crores and B.C. ratio is 1.062.

The Govt. has approved the implementation of Ujh MPP as per revised DPR.

The EAC after the detailed presentation by the PP observed that earlier Ujh MPP proposal for accord of TOR was appraised in Expert Appraisal Committee (EAC) for River Valley & Hydro Electric Power Project (RV&HEP) in its meeting held on 11-12th December, 2014. TOR was issued vide No. J-12011/39/2014-IA-I dated 30.01.2015 with validity of 3 years up to 29.01.2018. Project Proponent informed to the Ministry that EIA studies could not be initiated due to direction for reducing the submergence caused by the reservoir of the project. A fresh DPR has been prepared by Monitoring & Appraisal Directorate, Central Water Commission, Jammu and was submitted to J&K Government in December, 2017. FRL has now been reduced from 614.0 m to 608.00m and reduction in submergence area from 41.00 km² to 34.5 km². Accordingly, PP has made application a fresh for the ToR.

The EAC in its present meeting (20th) after detailed deliberations, recommended for the grant of ToR of the project with the additional conditions covered in TOR issued vide No. J-12011/39/2014-IA-I dated 30.01.2015.

Item No. 20.7 Construction of Thana Plaun HEP (191 MW) Project in Mandi District of Himachal Pradesh by M/s Himachal Pradesh Power Corporation Ltd – for Fresh Environment Clearance- reg. F. No. J- 12011/12/2011-IA.I, Proposal No. IA/HP/RIV/75041/2013.

The proposed Thana Plaun HEP (191 MW) is a storage scheme and the water conductor system of the project is on the left bank of river Beas. The project envisages the construction of concrete gravity dam across river Beas in the Mandi District of Himachal Pradesh, with a live storage capacity of 44.93 MCM to enhance the peaking benefits during the lean months. The entire catchment comprises mountainous terrain with steep hill slopes and is very thinly populated. For construction of the project, about 444.29 hectare land, out of which forest land (forest land, Govt. (Deemed Forest Land) and private (Deemed Forest Kismvani land) altogether constituted 406.79 ha.

The Terms of Reference for carrying out the EIA studies and preparation of EMP as per the provisions of Environmental Impact Assessment Notification 2006 and subsequent Notification in 2009 was approved and permission for pre-construction activities was accorded vide letter No. J-12011/12/2011-IA-I dated 29.11.2012 for Thana Plaun HEP with installed capacity of 141 MW of Mandi District of Himachal Pradesh by M/s. HPPCL.

M/s HPPCL submitted application dated 12.09.2013 for revalidation of approved ToR for the enhanced installed capacity for the project from earlier 141

MW to revised installed capacity of 191 MW which entailed change in layout also. EAC noted that the capacity of the project has been enhanced from 141 MW to 191 MW and it is not a case of merely extension of the validity of TOR. The scope of the project has been changed as the capacity has been substantially revised to 191 MW. Therefore, the project will be reconsidered by the EAC.

The project proponent submitted Form-1 afresh and the same has been presented before the EAC at its meeting held during 20-21 February, 2014. The EAC recommended for a fresh TOR for Thana-Plaun HEP (191 MW) as per MoEF& CC norms and also recommended to use already collected base line data for the purpose of EIA/EMP studies subject to the condition that the data should not be older than 3 years and with some additional TOR conditions. The ToR was accorded on 05.06.2014 for a period of 3 years, which was further extended for one year. Hence, the validity of the ToR was up to 04.06.2018. Public Hearing for the proposed project has been conducted by the Himachal Pradesh State Pollution Control Board, Himachal Pradesh at villages Mahan, Khalanu, Kotli and Kadakalayan, Tarnosh, Kotli and Gram Panchayat Office at Barhi, Dharampur, Mandi during on 22-23 March, 2018.

PP has submitted the application for EC online on 19.05.2018. However, the base line data collected for the EIA / EMP studies is from 1st March 2013 to 31st December, 2013. EAC noted that the data collected for the study is more than three years old and hence could not be considered for appraisal of the project. After detailed deliberation, considering all the facts as presented by the project, EAC in its 15th meeting recommended that PP should collect baseline data for one more season afresh and resubmit the EC application. The following more additional information were also sought:

- I. Recommendation of E-flow and maintenance of free flow stretches between two HEPs as per the CIA and CC of Beas River Basin studies to be followed.
- II. Resultant pollution loads of all the environmental parameters be derived again for all the possible pollution sources. Based on the findings, mitigative measures be suggested including allocation of capital budgets for different heads.

PP has submitted the details sought in the 15th EAC meeting held on 28.06.2018 to the Ministry, accordingly the proposal has been considered in the present meeting wherein PP has informed to EAC that base line studies were conducted within 10km radius during monsoon season in the months of July-August-September 2018. Project Proponent committed that, E-flows have to be followed as per recommendation under CIA & CCS of Beas River Basin studies under consideration with MoEF&CC, GOI. Provisions finally approved in respect of environmental flow will be adhered by the project authorities of Thana Plaun HEP. PP also presented before the Expert Appraisal Committee impacts of the proposed project on environmental attributes such as water, air, noise, land & biological environment and social-economic environment along with mitigation measures.

Summary of total cost estimated towards EMPs under Thana Plaun HEP

| S. No. | Name of the EMPs | Proposed cost (Rs. In Lacs) |
|--|---|--|
| 1 | Catchment Area Treatment Plan | 5560.00 |
| 2 | Compensatory Afforestation Plan | 1011.27 |
| 3 | Green Belt Development Plan | 20.00 |
| 4 | Biodiversity Management Plan | 160.00 |
| 5 | Fisheries Management Plan | 117.00 |
| 6 | Reservoir Rim Treatment | 200.00 |
| 7 | Muck Management Plan | 176.00 |
| 8 | Restoration Plan for Quarry Sites and Landscaping | 35.00 |
| 9 | Plan for Public Health Delivery System | 100.00 |
| 10 | Energy Conservation Plan | 130.00 |
| 11 | Solid Waste Management Plan | 160.00 |
| 12 | Rehabilitation and Resettlement Plan | 3522.00 |
| 13 | Local Area Development Plan* | 3335.00* |
| 14 | Plan for Air, Water & Noise Quality Management | 50.00 |
| 15 | Disaster Management Plan & Risk Assessment | 80.00 |
| 16 | Environment Monitoring Plan | 249.00 |
| 17 | Road Management Plan | 21.00 |
| Total | | 11591.57 say 11592.00 |
| *Cost already included in the project establishment cost | | |

After detailed deliberations, the EAC in its present meeting (20th) recommended for grant of Environmental Clearance to the proposed project subject to the following additional conditions:

1. Environment Clearance in respect of Thana Plaun HEP (191 MW) subject to adhering with the conditions/recommendations under CIA & CCS of Beas River Basin studies under consideration with MoEF&CC, GOI.
2. Submission of FC stage I Clearance to the Ministry.

Item No. 20.8 Any other items with the permission of the Chair

Item No. 20.8 (a) Ashti Lift Irrigation Scheme-III at district Beed, Maharashtra by M/s Water Resource Department, Govt. of Maharashtra, Aurangabad, Maharashtra – For fresh Environmental Clearance. (File No. J-12011/14/2015-IA.I & Online No. IA/MH/RIV/28875/2011)

Earlier the Member Secretary informed the EAC that vide Ministry's letter dated 14.08.2018, Ashti Lift Irrigation Scheme III (Ashti LIS-III) in Beed District of Maharashtra is having culturable command area (CCA) of less than 50,000 ha, which is now to be considered in the State level by SEIAA, Maharashtra. However, the Member Secretary further informed that

- i. Krishna Marathawada Lift Irrigation Project in Osmanabad involves lifting of 21 TMC of water from existing Ujjani Reservoir (acting enroute reservoir) and 2.66 TMC water from Bhima Sub-basin to provide irrigation facility in Marathawada Region in 87,188 ha CCA of area. LIS-1 proposes to utilize water in 5 stages from Ujjani Reservoir. LIS-II proposes to divert 10.41 TMC water through Bhima Sina Link existing tunnel. Remaining 2.66 TMC water is to be utilized from free catchment below Sina Kolegaon project up to Ghatne Barrage on Sina River. The GCA is 1,36,431 ha, the CCA is 1,08,985 ha and irrigable command area (ICA) is 87,188 ha.
- ii. Administrative approval for the above scheme was granted by Government of Maharashtra vide Resolution No.2004/1413 (385/04) (Marathi Language) dated 23.08.2007 for an estimated amount of Rs. 2,382.50 crores for 19 TMC of surplus water availability in Krishna Basin.
- iii. The project subsequently got revised and was approved by the Government of Maharashtra vide letter dated 27.08.2009 for an amount of Rs.4,845.05 crores for utilization of 23.66 TMC of surplus water in Krishna Sub-basin. The project was planned to irrigate 1,14,731 ha in Osmanabad and Beed Districts by 3 lift irrigation schemes i.e. LIS-I, LIS-II and Ashti LIS-III.
- iv. Out of 23.66 TMC of water, 17.9 TMC of water proposed to be utilized in Osmanabad District having 2 lift irrigation schemes and 5.68 TMC to be utilized in Beed District having only one lift irrigation scheme.
- v. The PP has applied the present proposal as a separate project, however vide letter dated 03.10.2015, PP requested the Ministry to reconsider the present proposal as an integral part of Krishna Marathawada Irrigation Project. However, the EAC while apprising this proposal, de-linked the Ashti LIS-III and recommended for grant of EC to Krishna Marathawada Irrigation Project i.e. for two lift irrigation schemes. Subsequently, the recommendation of the EAC was approved by the Competent Authority and the Minisry issued EC vide letter dated 13.08.2015.
- vi. During the process of appraisal, the EAC noted that a violation has occurred in the project and EAC mentioned that the extant procedure may be followed in the Ministry to deal with such violation cases. The EAC was further informed that such cases are separately to be dealt as per the OM Nos. J-11013/41/2006-IA-II (I) dated 12.12.2012 and 27.6.2013 in conjunction with orders of National Green Tribunal.
- vii. While appraising the proposal of Krishna Marathawada Irrigation project, the EAC noted that the construction works of Krishna Marathawada Irrigation Scheme including Ashti LIS-III have already been started. In this regards, the PP informed that as this project was given one administrative approval with LIS-I and LIS-II by the Government of Maharashtra, the construction works have started for Ashti LIS-III also.
- viii. Accordingly, the Ministry issued letters to PP and Department of Environment, Government of Maharashtra. The PP vide letter No. CE(WR)Abad/T-6/Camp/Delhi dated 27.10.2015 mentioned that Asthi-III was part of Krishna Marthawada Irrigation project. At that time, the work of Asthi LIS-III was taken up. Subsequently, the work was stopped along with LIS-I and LIS-II.
- ix. The NGT Order on violation committed/occurred in the project has been stayed by Hon'ble Supreme Court in September, 2015. Therefore, Ashti LIS-III was considered.

- x. The PP applied vide letter dated 03.10.2015, 27.10.2015 and 24.11.2015, for grant of a separate ToR for Ashti LIS-III in Beed district. The proposal of Ashti LIS-III is to utilize 5.68 TMC of water from Ujjani reservoir in 5 stages for providing irrigation facility in 27,543 ha, the GCA is 52,662 ha and the CCA is 35,647 ha. There is no national park/wildlife sanctuary/biosphere reserve/historical monument present in the project area, so General Condition is not applicable. Total estimated cost of the project is about Rs. 1,046 crores. The ToR was accorded on 10.12.2015 for collection of base line data and preparation of EIA/EMP report.

2. As the present proposal applied online as a separate proposal, but now, it is to be linked with Krishna Marathawada Irrigation project as per the revised Administrative Approval as one proposal only, i.e. LIS-I, LIS-II and Ashti LIS-III. During the EAC meeting, it has been opined that release of funds to Ashti LIS-III would be difficult if, EC is granted to this project separately, i.e. as a separate project other than LIS-I and LIS-II. Therefore, the PP shall again request the Ministry for amendment of ToR of Ashti LIS-III stating that it is an integral proposal of Krishna Marathawada Irrigation Scheme. The irrigation technology use for all the above cases is same. Therefore, the Notification dated 14.08.2018 is not applicable.

3. During deliberations in the EAC meeting, the Member Secretary further informed the Committee that vide letter dated 22.10.2018, Chronology of the events taken place in the project since 2009 wherein revised administrative approval has been given by Government Maharashtra commonly for LIS-I, LIS-II & LIS-III with a total cost of the project is Rs.48445.05 crores for which administrative approval was granted by Government of Maharashtra on 27.08.2009 and requested the Ministry that either an amendment to EC of Krishna Marathwada Irrigation Project (KMIP) be considered or clarification for amendment to EC of KMIP be given in this regard.

4. The matter was put up for taking approval of the Competent Authority in the Ministry and the following information were sought on 8.11.2018.

- i) Regional Office, Nagpur has been requested on 2.11.2018 to get the compliance report to the EC conditions of the KMIP for which EC was granted on 24.06.2015 as the present case is integral proposal of KMIP and it will be appraised separately because public hearing & EIA/EMP have already been done.

5. The PP submitted the reply to the Ministry vide dated 16.11.2018 and the matter was again proposed that while issuing the separate EC to the Ashti LIS-III, there would be procedural difficulties in releasing of funds by the Finance Department of the Maharashtra and accordingly Competent Authority has approved one-time exemption to make this as amendment case. Because, Ashti lift irrigation scheme III is an integral part of the main project which had earlier consisted of LIS I and LIS II and hence it has been considered appropriate to view the project in a holistic manner for EC, etc.

7. While the PP and the Consultant presenting their case for EC, the EAC observed the following and sought from the PP the additional information and deferred the proposal:


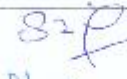

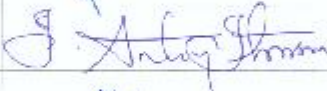
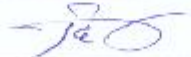


- i. The water required for this irrigation project has been proposed to be diverted from river Nira, a tributary to river Bhima. The work of diversion of water from river Nira (through existing Somanthali and Udhhat barrages) to Bhima Basin (existing Ujjani dam) has already been taken up and vide letter dated 24.02.2015, Ministry has already given exemption for environmental clearance. As the work of diversion of water from Nira also becomes an integral part of Krishna Marathwada project consisting of LIS I, LIS II and LIS III, this portion needs to be included in the whole project and updated accordingly.
- ii. The EC given to Krishna Marathwada Irrigation Project vide dated 24.6.2015 provided that water availability is 23.66 TMC. As the river Bhima is an interstate river, hydrology and water availability of the Krishna Marathwada project be cleared from CWC.
- iii. Compliance to EC conditions of the existing project to be submitted from Regional Office, Nagpur, MoEF&CC, New Delhi.
- iv. No forest area is involved in the project. However, felling of trees from the command area is envisaged for which permission be obtained from the Competent Authority as per the order of Hon'ble High Court, Nagpur Bench.
- v. The project is an eight monthly irrigation project. The cropping pattern proposed consist of perennial crops like sugarcane, horticulture, etc. This anomaly is to be clarified.
- vi. The crops in the command are proposed to be irrigated with micro irrigation system. The provisions made in respect of delta for irrigation, etc. to be made compatible. There will be an increase in the command area in view adoption of micro irrigation.

As there being no agenda item left, the meeting ended with a vote of thanks to the Chair.

LIST OF MEMBERS

**20th MEETING OF RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) FOR
RIVER VALLEY & HYDROELECTRIC PROJECTS**

DATE : 27th November 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 | Abs |
| 2. | Shri. T. P. Singh Member |  |
| 3. | Shri. Sharvan Kumar, Member |  |
| 4. | Shri N. N. Rai, Member |  |
| 5. | Dr. J.A. Johnson, Member |  |
| 6. | Dr. AK Sahoo, Member | Abs |
| 7. | Dr. Vijay Kumar, Member | Abs |
| 8. | Prof. Govind Chakrapani, Member | Abs |
| 9. | Dr. Chetan Pandit, Member | Abs |
| 10. | Dr. Dinkar Madhavrao More, Member (Vc chairman) |  |
| 11. | Prof. R.K. Kohli, Member | Abs |
| 12. | Prof. S.R. Yadav, Member |  |
| 13. | Dr. Jai Prakash Shukla, Member | Abs |
| 14. | Dr. Poonam Kumria, Member | Abs |
| 15. | Dr. Kerketta, Member Secretary Director (IA-1) |  27.11.2018 |