

Minutes of the 26th Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects held on 20.08.2019 at Narmada Meeting Hall, Ground Floor, Jal Block, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-3.

The 26th meeting of the re-constituted EAC for River Valley & Hydroelectric Projects was held on 20.08.2019 with the Chairmanship of Dr. S.K. Jain in the Ministry of Environment, Forest & Climate Change at Narmada Meeting Hall, Ground Floor, Jal Block, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-3. The following members were present.

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| 1. Dr. S.K. Jain | - Chairman |
| 2. Shri N.N. Rai | - Representative of CWC |
| 3. Dr. D.M. More | - Member |
| 4. Dr. S.R. Yadav | - Member |
| 5. Dr. (Mrs.) Poonam Kumria | - Member |
| 6. Dr. S. Kerketta | - Member Secretary |

Shri Chetan Pandit, Shri Sharvan Kumar, Dr. J.A. Johnson, Dr. Vijay Kumar, Prof. R.K. Kohli, Dr. A.K. Sahoo, Dr. J.P. Shukla and Dr. Govind Chakrapani could not present due to pre-occupation. The deliberations held and the decisions taken are as under:

Item No. 26.0 Confirmation of the minutes of 25th EAC meeting.

The Minutes of the 25th EAC (River Valley & Hydroelectric Projects) meeting held on 19.07.2019 were confirmed.

Item No. 26.1 Bokang Bailing Hydroelectric Project (200 MW) at Pithoragarh, Uttarakhand by M/s THDC India Limited-regarding grant of fresh ToR

File No. J-12011/13/2019-IA-1 (R), Proposal No. IA/UK/RIV/113906/2019

The Project Proponent (PP) applied for grant of ToR for preparation of EIA/EMP report and conduct of Public Consultation online on 08.08.2019. The PP along with the consultant (M/s WAPCOS Limited, 76-C, Institutional Area, Sector-18, Gurugram-15, Haryana) made the detailed presentation on the project and *inter-alia*, provided the following information:

The proposed Bokang-Bailing HEP is located in Kumaon Himalayas in Pithoragarh district of Uttarakhand at the d/s of confluence of Lassar Yankti with Dhauliganga river (80°31'35" E and 30°16'13" N). It is the upper most projects in the cascade development of the Dhauliganga / Darma River Basin in Uttarakhand. The river Dhauliganga is the northernmost tributary of river Kali, the border river between India and Nepal. The project is being proposed as the RoR scheme with 200 MW (3x66.67 MW) capacities by utilizing approximately 400 m head. It envisages construction of a concrete gravity dam of 65 m (as proposed by THDCIL) from river bed level and an underground Power House. Approx. 9.46 km long HRT has been envisaged to carry the required flow to the Power House.

The proposed dam under the Bokang-Bailing HEP is located near village Dhakar across river Dhauliganga. The project is located in Pithoragarh district in Uttarakhand. The site is about 82 km from Dharchula. Dharchula is a town and a Nagar Panchayat in Pithoragarh district, Uttarakhand.

Project Components includes low level Sluice Spillways (4 nos.) to pass the design flood discharge as well as for silt flushing. The intake structure is proposed at the face of concrete dam.

A semi-circular arrangement of Trash rack is proposed. The intake sluice are proposed at El 3,175 keeping in view the requirement of Power Intake like sufficient cushion of water, reservoir siltation, etc. One steel lined conduit is proposed to carry water from Intake to HRT portal. A 9.45 km long circular shaped HRT (1 no., diameter: 5 m) has been provided to carry the required flow to the Surge Shaft. The Tunnel alignment has been so fixed that it has adequate rock cover at each nallah location. A restricted orifice type Surge Shaft is proposed just before the Power House to take care of sudden load acceptance and rejection. The Power House site is located at Latitude 30°11'37.06" N and Longitude 80°34'1.62"E. The underground Power House complex comprises of two separate Caverns approximately 40 m apart.

Total Catchment Area is 690.14 km². Maximum and minimum average discharges at Dam site are 62.83 cumecs and 15.28 cumecs, respectively. An area of 24.87 ha will be submerged at FRL (3,200 m). A total land of 280 ha (Forestland: 250 ha + Private land: 30 ha) is required to create the necessary facilities and infrastructure and other activities under Bokang Bailing HEP. The required land are as follows –Reservoir: 28.33 ha, Dam & Apertures: 32.5 ha, Quarry area: 101.5 ha, Muck disposal area: 40 ha, Road: 42 ha, Colony: 5 ha, Office infrastructure: 22 ha and others: 8.67 ha.

The Local Population will get benefitted from the infrastructure works such as Roads, Bridges for the Project, etc. In accordance to the provisions indicated under Right to Fair Compensation and Transparency Land Acquisition Rehabilitation and Resettlement Act, 2013, various benefit shall be extended to project affected population. Project will also undertake various Community Development activities viz.; Construction of Path, Electrification, Water Supply Activities, Widening & Strengthening of Road, Construction of Waiting Shelters, Nala Protection Works, Procurement of Items for Community, providing Solar Street Lights for Villages, Procurement of Furniture & Sports Kit for Community & at District level, Conducting Awareness Programmes on Social & Environment aspects, Participation & Contribution towards National Pulse Polio Drive etc. Tentative project cost is Rs. 1374.88 Cr. (excluding IDC and FC) up to June, 2019 and shall be proposed to be commissioned by March, 2023.

EAC observed that Hon'ble Supreme Court in August, 2013 issued directives to MoEF&CC and GoUK not to grant any Environment/Forest clearances for development of any HEP in the State of Uttarakhand till further orders. Further, Hon'ble Supreme Court, in its Judgement dated 12.10.2015, vacated its earlier order of not granting any environmental and forest clearances except for 24 projects proposed/developed in Alaknanda-Bhagirathi river basin. Since, Bokang Bailing HEP is not in the list of 24 projects, the MoU for implementation of the project was extended up to March, 2023 by GoUK. EAC further observed that in the instant project components are outside the ESZ of Askot Musk Deer Sanctuary besides Power House site and is located in the ESZ.

After detailed deliberation on the information submitted and as presented, the EAC **recommended** for grant of standard ToR to the proposed project with the following additional ToR conditions:

1. 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.
2. The project involves diversion of about 250 ha of forestland. Forest clearance shall be obtained as per the prevailing norms of Forest (Conservation) Act, 1980.
3. Application to obtain prior approval of Central Government under the Forest (Conservation) Act, 1980 for diversion of forest land required should be submitted as

soon as the actual extent of forest land required for the project is known, and in any case, within six months of issuance of this letter.

4. All the tasks including conducting public hearing shall be done as per the provisions of EIA Notification, 2006 and as amended from time to time. Public hearing issues raised and compliance of the same shall be incorporated in the EIA/EMP report in the relevant chapter.
5. Funds allocation for Corporate Environment Responsibility (CER) shall be made as per O.M. No. 22-65/2017-IA.III dated 01.05.2018 for various activities therein. The details of funds allocation and activities for CER shall be incorporated in EIA/EMP report.
6. Consolidated EIA/EMP report is to be submitted as per the generic structure (Appendix III & IIIA) given in the EIA Notification, 2006.
7. Compliance shall be made as per the provisions made in the notified ESZ of Askot Musk Deer Sanctuary as powerhouse is located within the proposed ESZ and NBWL Clearance shall be obtained.
8. Impact of the proposed project on the nearest Wildlife sanctuary/Askot Musk Deer Sanctuary shall be studied and proper conservation plan/mitigation measures shall be included in the EIA/EMP report.
9. Conservation plan for the Scheduled I species, if any, in the project study area shall be prepared and submitted to the Competent Authority for approval.

Item No. 26.2 Kaleswaram Lift Irrigation Scheme near Kannepally village, Mahadevpur Mandal, Jayashankar Bhoopalpally district, Telangana – **regarding reconsideration of Environmental Clearance**

File No. J-12011/20/2017-IA-1(R), Proposal No. IA/TG/RIV/65564/2017

The Project Proponent (PP) applied for grant of Environmental Clearance (EC) online on 09.02.2019. The project was appraised on 11.03.2019 before the EAC and certain additional information were sought in this EAC meeting. The PP submitted the additional information online on 24.07.2019. The project was re-considered in this EAC meeting for grant of EC. The PP and the Consultant (M/s Environmental Health and Safety Consultants Pvt. Ltd, Bangalore Karnataka, accredited by the QCI-NABET) made a presentation on the project and *inter-alia*, provided the following:

The Godavari Water Dispute Tribunal has allocated water for each state. GWDT allocated 1,480 TMC to the erstwhile Andhra Pradesh. Out of which, Telangana State share is 855 TMC and Andhra Pradesh share is 625 TMC. The project envisages lifting of 4.5 TMC of water from Godavari River to fill 14 Minor irrigation tanks in Mahadevpur, Katram, Mahamuttaram and Malhar rao mandals of Jayashankar Bhoopalpally district (previously Karimnagar) to benefit 18,211 ha of command area under the existing MI tanks. Out of 4.5 TMC of water, the project envisages supply of 0.3 TMC for drinking to the enroute villages. This scheme benefits 63 villages belonging to four Mandals. 10% of the total command area will be brought under micro irrigation scheme.

Construction work involves intake canal, pumping stations, pressure main and gravity canals. An intake canal of length 200 m will be used to convey water to the Pumping station - I. The water will be lifted through pump house and with the help of pressure main (pipelines) and the water will be conveyed to tanks through pipelines buried underground. Gravity canal network will be constructed under each tank to convey the water to the fields. The project has been accorded administrative approval vide order No. G.O. MS No. 220 dated 11.10.2007 for Rs. 443 Crores. Administrative approval was revised vide order No.158 dated 30.07.2008 and the

total revised cost of the project is now Rs. 499.23 Crores. During construction, 750 people (120 technical and 580 construction workers) will be employed.

Total land requirement is 1,467 ha, out of which 258.028 ha is forestland, 568 ha government land and 640 ha is private land. Diversion of 258.028 ha of forestland for laying pipelines for which Stage-II Forest Clearance has been accorded by the Ministry on 27.12.2017. The project doesn't involve submergence and hence no Rehabilitation and Resettlement. Right to fair Compensation and Transparency in land Acquisition, Rehabilitation and resettlement Act, 2013(Central Act No.30 of 2013)- Amendment by the Telangana Amendment Act, 2016 (Act No.21 of 2017) will be followed for compensating the land losers. The boundary of Pranahita Wildlife (Black buck) Sanctuary is located at a distance of 12 km from the lift point and the ESZ boundary of the Sanctuary is at a distance of 7 km from the lift point.

CWC vide letter dated 30.10.2017 confirmed the availability of 284.3 TMC of water at the Kaleshwaram Irrigation Project at 75% dependability from the period 1971-72 to 2011-12. Hence, after due consideration of the water requirement of Kaleshwaram Irrigation Project of 180 TMC, still there will be surplus flow of 100 TMC in the Godavari river. Out of this, 4.5 TMC will be utilized for this project.

The Scoping/ToR clearance for the project was accorded on 04.08.2017. Public Hearing (PH) was held on 24.09.2018 at the premises of BLM Gardens (Functional Hall), near MRO office, Garepally, Kataram, Jayashankar Bhupalpally district as per the procedure laid down in EIA Notification, 2006 and its amendments. Major issues raised were regarding land acquisition and compensation, employment. PP submitted the compliance on the issues raised during the PH.

In order to assess the baseline environmental status, command area, 10 km radius from the lift component and command area were considered and the data was collected for three seasons namely Monsoon (July, 2017-September, 2017), Post-Monsoon (October, 2017 - December, 2017) and Pre-Monsoon (January, 2018-March, 2018). Ambient Air Quality Monitoring was carried out at 3 locations as per NAAQ guidelines. The observed values well within the CPCB standards. The Ambient Noise Level Monitoring was carried out at 3 locations as per CPCB guidelines. Overall, the noise levels in all the seasons were observed to be well within the CPCB standards.

The surface water samples were collected in 4 locations as per CPCB guidelines and the results were compared with CPCB water quality criteria. In the entire study area 4 surface water samples were collected in each season, totalling to 12 SW samples (for three seasons), of which 1 sample collected at Downstream of Godavari river near Bhramapalli during Monsoon season conform to Criteria "A". 2 samples collected at Downstream of Godavari river near Bhramapalli and at Rudraram Cheruvu conforms to Criteria "B". Three samples have been collected at Lift Point, Rudraram Cheruvu and at Downstream of Godavari river conforms to 'C' criteria and 6 samples collected at Yellapur Cheruvu, Lift point and Rudraram Cheruvu conforms to "D" criteria. Overall about 50% of the surface water samples conform to "D", however, all the water samples analyzed conform to satisfy irrigation needs. The ground water samples were collected at four locations as per CPCB guidelines. Overall the groundwater quality results were compared with BIS 10500:2012 (second revision) in all the seasons and the results were observed to be well within the standards.

A total of 35 tree species were recorded during the study. In addition to this, 112 species of herbs, 30 species of shrubs and 21 species of climbers were recorded during Monsoon season. A total of 89 species of herbs, 30 species of shrubs and 11 species of climbers were recorded during Post Monsoon season. Similarly, 147 species of herbs, 29 species of shrubs and 24 species of climbers were recorded during pre-Monsoon season. All the species recorded were common to the region. *Tephrosia purpurea* (L.) was the only endangered species found both in the riverine

stretches and command area and *Ammannia baccifera* (L.) subsp. *Baccifera* was the only species that belongs to nearly threatened category (as per IUCN conservation status, 2019). However, these species were not endemic to the region.

Similarly, a total of 85 avifaunal species and 61 butterfly species were recorded during monsoon season, 86 avifaunal species and 74 butterfly species were recorded during Post monsoon season and 92 avifaunal species and 37 butterfly species were recorded during the Pre monsoon season. Pied tit, Black-headed ibis and Painted stork are the avifaunal species belonging to Vulnerable and Near Threatened category as per IUCN conservation status, 2019. In addition to this, Black-shouldered kite and Oriental honey buzzard are the only avifaunal species belonging to Schedule I of Wildlife (Protection) Act, 1972. Butterflies such as Common pierrot, Blue pea, Common gull and Common crow are the only species belonging to Schedule I, II and IV of Wildlife (Protection) Act, 1972. All other species are common to the local area.

Mega faunal species such as sloth bear, wild boar, fox, barasingha, nilgai, sambar deer, jungle cats, etc. are the commonly recorded species in the study area due to the presence of Mahadevpur Reserved Forest nearby. As per IUCN Conservation status, 2019 two vulnerable species namely, sambar deer and sloth bear were recorded. Of which, Sloth bear and Sambar Deer belongs to Schedule-I and Schedule-III of Wildlife (Protection) Act, 1972 respectively. However, no such mega faunal species were recorded during the study. Quantity of muck generated from various project activities like earthwork, excavation for foundation is 1,16,673 cum. The muck generated will be completely reused for embankment, filling trenches, land levelling, service path, etc.

PP further informed to the EAC that the project is a tank filling project through gravity pipelines by lift. Short term impacts on Air, Water, Noise, Muck and Biodiversity is anticipated. However, with the implementation of Mitigation measures, the impacts can be minimized.

Risk Management and disaster Management:

- a) Floods: Flooding can be caused by heavy inflows into the Pranahita River, which merges with Godavari River at Kaleshwaram. Around 15 villages will be disconnected due to overflowing of the river viz., Peddampet, Sarvaipet and Pankena rivulets in Mahadevpur Mandal. However, the project command area is located at a distance of 53.48 Km from the proposed flood prone villages.
- b) Earthquake: During July 2015 mild tremors were felt for 3 minutes in the Rayakal zone, Ramojipeta, Vadeyalingapur, Thatlavaya, Katnapur, Chinthluru and Borupalli. Other places of Karimnagar district were also affected with this mild tremor. The district lies in seismic Zone III i.e. 'Moderate' zone.
- c) Landslides: From the landslide zone map given by National Disaster Management Authority (NDMA), GoI, it is noted that Himalayas of Northwest and Northeast India and the Western Ghats are two regions of high vulnerability and are prone to landslides. The project site in Telangana state falls under "Very Low Hazard Zone".

The cost estimates for implementation of EMP during construction phase and operational phase are as follows:

Sl. No.	Particulars	Cost in Rs.
1	Catchment area treatment plan	38,44,25,500/-
2	Command area development	45,00,000/-
3	Green belt development	27,38,89,500/-
4	Construction of embankment for intake canal	3,50,000/-
5	Fisheries conservation and management plan	15,00,000/-
6	Land acquisition	70,23,00,000/-

7	Local Area Development	33,80,000/-
8	Public health delivery system	4,00,000/-
9	Sanitation and Solid waste management plan	1,00,000/-
10	Energy conservation measures	5,00,000/-
11	Environmental safeguard measures for mitigating air and noise pollution	17,35,250/-
12	Muck management plan	4,00,000/-
13	Environmental monitoring programme	37,50,520/-
Total		137, 72, 30, 770/-

As per Ministry of Environment, Forest and Climate Change, New Delhi O.M. No.22-65/2017-IA.III, dated 01.05.2018 issued for green field project with capital investment between > 100 crores to ≤ 500 crores, such projects have to allocate 1.5% for Corporate Environmental Responsibility and the same is considered and Rs 750 lakhs is earmarked for CER and the committed activities will be implemented with the help of Rural Development, Tribal Welfare Department, Health Department and Education Department, Govt. of Telangana.

Project benefit includes recharging of Groundwater and rejuvenation of MI tanks. Altogether 88,608 households in the command area will be benefitted directly under the scheme, the proposed project aims at providing drinking water to projected population of 1,83,824 by the year 2051.

Earlier, the project was considered in the 22nd EAC meeting. The EAC after detailed deliberations and considering all the facts of the project as presented by the PP, deferred the proposal and sought some additional information as below:

- (i) The committee opined that the PP shall relook at the matrices and update them. For each activity, weights should be assigned carefully. Updated matrices shall be submitted to the Ministry for reconsideration in the EAC.
- (ii) List of fish species like Hilsa needs to be rechecked.
- (iii) Cost estimate for implantation of fisheries management plan needs to be clarified and basis for calculation of fingerling stocking of fishes is to be submitted.
- (iv) Plant diversity has to be documented properly and attention has to be paid to especially RET & endemic species the region.
- (v) Certificate from Chief Wildlife Warden regarding distance of Pranahita Wildlife (Black buck) Sanctuary and Sivaram Wildlife Sanctuary from the project site (all components) is to be submitted.
- (vi) Wildlife Conservation plan for all Schedules I species is to be prepared and submitted.
- (vii) Cost of green belt plan and conservation plan for Schedule I species under Environmental Management Plan be separated and therefore revised EMP cost is to be submitted.
- (viii) Cost for handling muck under Muck Management plan is to be envisaged and incorporated in Environment Management Plan.

PP submitted the above information, as sought by the EAC in 22nd meeting, to the Ministry on 24.07.2019 and presented the same before the EAC during the present meeting. EAC noted that name of the consultant in the 22nd meeting was inadvertently mentioned M/s Enviro Infra Solutions Pvt. Ltd., Ghaziabad in place of M/s Environmental Health and Safety Consultants Pvt. Ltd, Bangalore Karnataka.

EAC deliberated on the information sought in this meeting. Based on the information submitted and as presented, EAC **recommended the proposal for grant of Environmental**

Clearance subject to compliance of applicable Standard EC (RIV &HEP sector) and following additional conditions:

- i. The Environmental Management Plan (EMP) shall be strictly adhered to and a sum of Rs. 137,72,30,770/- (Construction Phase: Rs. 98,19,85,070/- & Operational Phase: Rs. 39,52,45,700/-), the budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also updated proportionately.
- ii. The project proponent shall comply with the provisions contained in this Ministry's OM vide F. No. 22-65/2017-IA.III dated 1st May 2018 regarding Corporate Environment Responsibility. Project proponent shall require to invest 1.5 % of the total project capital investment i.e Rs. 7.5 Crore. The activities under CER shall be in accordance with the submission made in the EIA/EMP report.
- iii. Necessary permission/clearance to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and subsequent amendments thereof.
- iv. 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.
- v. Wildlife Conservation plan for all Schedules I species shall be implemented with the approval of the Competent Authority.
- vi. 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.
- vii. Prior clearance shall be obtained from the Standing Committee of the National Board for Wildlife, if any component of the project falls within the Wildlife Sanctuaries and Eco-Sensitive Zone of the Wildlife Sanctuary.

Item No. 26.3 Damanganga (Ekdare)-Godavari intrastate link project at Nashik district, Maharashtra by M/s Executive Engineer, Minor Irrigation Division-**regarding Fresh ToR.**

File No. J-12011/03/2019-IA-1 (R), Proposal No. IA/MH/RIV/88394/2018

The Project Proponent (PP) applied for grant of ToR online on 08.07.2019. The PP and National Water Development Agency (NWDA) made the presentation and *inter-alia*, submitted the following information:

Damanganga (Ekdare)-Godavari intra-state link project, envisages diversion of 143 million m³ of water from the Damanganga basin to the water short Gangapur Reservoir of Nashik District in the Godavari Basin. Ekdare Dam is proposed to store water in monsoon. Ekdare Dam project is located in the Peint tehsils of Nashik District. The Catchment area at the proposed site is 200 km² and the proposed submergence area is 620 ha. At 75% dependable Annual yield is 199.10 MCM, while 143 MCM is the proposed diversion.

The monsoon storage from proposed Ekdare Dam site to the existing Gangapur reservoir in Godavari valley, by lift in two stages (103 m and 115 m with total static head of 218 m) and then through a tunnel of length 5.65 km by gravity. The total length of link is of about 13.55 km. Out of the total diversion of 143 MCM, 70% of water i.e. 100 MCM is allocated for irrigation. The existing Gangapur Irrigation Project provides annual irrigation to an area of 9,509 ha only out of

16,505 ha CCA. The link proposal will provide annual irrigation benefits to an area of 15,625 ha. Out of remaining 30% water, about 22 MCM would be used for domestic and 21 MCM for industrial purposes. The total cost of project is estimated Rs. 45,908 lakhs at 2008-09 price level.

Total Land under submergence is 620 ha. Forestland requirement is about 200 ha. The total energy required for lifting 143 MCM of water to 218 m, is 151.35 MU annually. The power required for pumping is around 32 MW. The benefit cost ratio of the project is estimated as 1.44.

Observation of EAC

As per the presentation made by the PP, EAC observed that the presentation is very sketchy, there was no clarity was on the proposed location including no environmental settings presented from where base line data can be collected. In the absence of any maps and .kml file during presentation, the locations of the reservoirs for the proposed and the existing could not be explained properly. Nandur-Madmehashwar Wildlife Sanctuary falls within 10 km of the project and no environmental issues were highlighted in the presentation. EAC opined that PP should revisit all the alternate sites once again as the static height of the lifts for the proposed location is found to be very high.

After deliberation, the project was deferred. EAC opined that the PP shall have to come prepared with a detailed presentation about the scheme and the other sites / alternates so as to reduce the static head and requirement of power.

Item No. 26.4 Damanganga-Vaitarna-Godavari Intrastate Link project by M/s Executive Engineer, Nandpur, Madhyameshwar Project Division, at Thane district, Maharashtra- regarding reconsideration of ToR.

File No. J-12011/02/2019-IA-1 (R), Proposal No. IA/MH/RIV/83263/2018

The Project Proponent (PP) applied online on 28.08.2019 for grant of ToR. The PP and National Water Development Agency (NWDA) made the presentation and *inter-alia*, provided the following information:

As per the Pre-feasibility report of the Damanganga (Val & Vagh) - Vaitarna (Kalampada, Dulachiwadi, Udhare and Upper Vaitarna) - Godavari (Kadva, Dev) link project, hereafter called "Damanganga - Vaitarna - Godavari link project", is an Intra-state link project proposed by Govt. of Maharashtra to divert the surplus waters of west flowing rivers of Damanganga and Vaitarna basins to east flowing Godavari river basin to cater the domestic & industrial and irrigation need of drought prone Sinnar taluk of Nasik district in Upper Godavari sub-basin.

The project envisages diversion of 202 million m³ of water from Damanganga and Vaitarna basins to Dev river, a tributary of Godavari in Upper Godavari sub-basin. In this proposal, it is proposed to divert the surplus water of 5 identified storage reservoirs viz.; Val & Vagh in Damanganga basin located on Vagh river, a main tributary of Damanganga river, Kalampada, Dulachiwadi & Udhare reservoirs in Vaitarna basin located on tributaries of Pinjal river, a main tributary of Vaitarna river. The total surplus water proposed for diversion from these five reservoirs is 186 million m³. Further, as per water balance study carried out by NWDA, it is possible to divert another 16 million m³ of surplus water from the existing Upper Vaitarna reservoir. The water of Val reservoir (57 million m³) would be lifted by 180 m static head in two stages through a raising main of 1.94 km length and then transferred through a tunnel of 3.08 km length to Upper Vaitarna reservoir to cross the ridge between Damanganga and Vaitarna basins. Similarly, the water of Vagh reservoir (45 million m³) will be lifted by 268 m lift in three stages

through a raising main of 8.26 km length and then transferred through a tunnel of 1.17 km length to Upper Vaitarna reservoir.

The water from Kalampada reservoir (35 million m³) will be diverted to Dulachiwadi reservoir through a lined canal of 3.56 km length by gravity. The water of Dulachiwadi reservoir (18.50 million m³) and the water received from Kalampada reservoir will be lifted by 232 m in three stages into Upper Vaitarna reservoir. Further, the water of Udhare reservoir (31 million m³) will also be lifted by 240 m in three stages into Upper Vaitarna reservoir. The combined water transferred from the five reservoirs and the balance available for diversion from Upper Vaitarna reservoir will be transferred to existing Kadva reservoir through a lined canal of 30.244 km length by gravity. Further, a net quantum of 196.73 million m³ (after transmission losses) will be diverted into Dev River by 150 m lift in two stages for further use in Sinnar taluk of Nasik district. Out of this, a quantum of 22.51 million m³ is earmarked for domestic water supply to serve 4.59 lakh people and 2.90 lakh for livestock, 73 million m³ for Delhi-Mumbai Industrial corridor uses, 41.50 million m³ for other industrial uses and 59.73 million m³ for irrigation in 11,480 ha CCA mainly in semi-critical drought prone Sinnar taluk under the RBCs of proposed Sonamba and Phalak reservoirs on Dev river. The transmission losses in the link project is estimated to be 5.27 million m³. Further, an area of 16,840 ha can also be brought under irrigation with recycled water received from the regenerated water of domestic and industrial uses as per the policy of Govt. of Maharashtra.

It is proposed to transfer the water from all the reservoirs during non-monsoon period i.e. from November to May every year. The total power requirement to lift the water from all the reservoirs is 65.04 MW and the total energy consumption is estimated to be 303.34 MU. The total cost of the project is estimated to be Rs. 2690.23 crores (with Alternative -I Canal) and Rs. 2708.27 crores (with Alternative -II Canal) at 2015-16 price level, which includes the cost of head works at Rs.1577.75 crores, the cost of conveyance system at Rs.580.45 crores (with Alternate-I canal) and Rs.598.49 crores (with Alternate-II) and the cost of lifting arrangements is Rs.532.03 crores. The annual cost after duly considering the annual power requirement for lifting arrangements works out to Rs. 372.05 crores (with Alternate-I canal) & Rs.374.04 crores (with Alternate-II canal). The direct benefits from the link project due to irrigation, domestic & industrial water supplies, fisheries development and animal husbandry are estimated to be Rs. 616.01 crores. The benefit-cost ratio (BCR) of the project works out to 1.656 (with Alternate-I canal) and 1.647 (with Alternate-II canal) whereas the Internal Rate of Return (IRR) works out to be 14.38% (with Alternate-I canal) and 14.31% (with Alternate-II canal).

Observation of EAC

As per the presentation made by the PP, EAC observed that the presentation is very sketchy, there was no clarity on the proposed locations including no environmental settings presented from where baseline data can be collected. In the absence of any maps and .kml file during presentation, the location of the reservoirs for the proposed and the existing could not be explained properly. The PP also could not properly reply on the issue of water availability for Jaikwadi project, located downstream of the proposed scheme, which is already facing water scarcity. EAC opined that PP shall revisit all the alternate sites once again as the static height of the lifts for the proposed locations is found to be very high.

After deliberation, as presented by the PP and NWDA, the project has been **deferred** and opined that in the subsequent EAC meeting, the PP shall have to come prepared with a detailed presentation about the scheme and the other sites / alternates so as to reduce the static head and requirement of power. Besides, details of environmental settings shall also be presented regarding collection of baseline data.

Item No. 26.5 Renuka Dam Project (40 MW) in the district Sirmaur, Himachal Pradesh by M/s Himachal Pradesh Power Corporation-regarding extension of validity of EC

File No. J-12011/53/2008-IA-I, Proposal No. IA/HP/RIV/110367/2019

The Project Proponent (PP) applied online on 09.07.2019 for grant of ToR for extension of validity of the period of Environmental Clearance. The PP made a brief presentation on the status of the construction of the project and *inter-alia*, presented the following reasons of delay of the completion of the Project:

Environment clearance (EC) for the project was accorded on 23.10.2009 for a period of 10 years. Subsequently, local people challenged the EC before the National Environment Appellate Authority (NEAA) (later on National Green Tribunal) during November, 2009 and also before the High Court, Shimla in 2010. Three PILs were also filed before the Hon'ble High Court on the similar issues. The petitions and PILs in Hon'ble High Court have been transferred and clubbed with the case in NGT. Hon'ble NGT disposed of all the appeals by a common judgment on 02.02.2016 and constituted a 8-member committee to study and examine the sufficiency of all compliances on the Project and directed the Committee to submit the report. Based on the report of the Committee, the Hon'ble Tribunal pronounced to approach the Ministry for the revised EC. The report of the Committee was placed before the EAC and a revised EC was granted on **15.01.2019**. In-Principle FC Stage-I (909 ha) was obtained on **20.02.2015**. Renukaji dam Project is a storage project and water shall be shared by beneficiary states as per MoU dated 12.05.1994 to codify the rights and liabilities of all stake holders "Interstate Agreement" was required to be signed which took certain time and could be signed only on **11.01.2019**. Therefore, the PP couldn't start the work at site even after the grant of revised EC.

Brief of Project:

Renukaji Dam Project (40 MW) is a water storage project on river Giri, a tributary of river Yamuna. It will help control floods of river Yamuna including supply of 23 cumecs of water to National Capital Delhi. The total land requirement of the project after detailed investigation and survey and physical verification under Sections 6, 7 & 8 of Land Acquisition Act has been re-assessed to be as 1988.27 ha instead of 1477.78 ha as earlier envisaged. Out of which, 909 ha is forestland (Territorial Forest = 646.00 ha, Sanctuary area = 49.00 ha, Deemed forest (Govt. land) = 80.00 ha, Kisam jungle jhadi = 134.00 ha), 1064.27 ha is private and 15 ha is Government Land. Out of total land to be acquired, an area of 1508.04 ha will be submerged. The project cost was revised based on March, 2015 PL and CWC finalized the cost to be as Rs. 4,596.76 crores with following apportionment:

Water Component = Rs.4325.43 crore

Power Component + Rs.271.33 crore

Observation of EAC

EAC after brief deliberation, **recommended for extension** of the validity of EC for another period of three more years i.e. up to 22.10.2022 as per the provision of the EIA Notification, 2006 and amendment thereof. In case, the construction work is not completed by October, 2022, then the proposal shall be considered as *de-novo*.

Item No. 26.6 Munjri Irrigation Project in Sheopur district of Madhya Pradesh by M/s Madhya Pradesh Water Resources Department-regarding reconsideration of ToR.

File No. J-12011/07/2019-IA.I(R), Proposal No. IA/MP/RIV/101717/2019

The Project Proponent (PP) applied for grant of ToR online on 08.04.2019. The PP along with the consultant (R.S. Envirolink Technologies Pvt. Ltd) made the detailed presentation on the project and *inter-alia*, provided the following information:

Munjri Irrigation Project is proposed to be constructed in Karahal tehsil, District Sheopur. Munjri irrigation project is proposed for development by Water Resources Department, Government of Madhya Pradesh to cater the need of farmers in Karahal and Baroda tehsil of Sheopur district. The dam is proposed on Aheli river near Munjri village, which is a tributary of Parbati river of Chambal sub-basin and Yamuna basin, to store water during monsoon and serve the command of 11575 ha (CCA) during Rabi season. Command is spread in Karahal and Baroda tehsil.

Project component includes Construction of 6960 m long dam (6830 m earthen, 130 m concrete/masonry), earthen dam with maximum height of 32.5 m and 27.65 m for concrete and earthen portions respectively. 4.3 Km long rising mains (3 km + 1.3 km) to lift water from DC/Pump houses and distribute to command through a 6 Km long gravity main and distribution network. The project will supply water for irrigation during Rabi season for a total command of 11,575 ha (9,825 ha Baroda tehsil; 1,750 ha Karahal tehsil). Total Catchment area of the reservoir is 300.71 km². Gross storage and live storage capacities of the reservoir are 56.247 MCM and 54.528 MCM, respectively.

PP informed that CA of the project is 11,575 ha which makes it a category B project, however it qualifies to be category A project due to applicability of General Condition as the distance of interstate boundary with Rajasthan is less than 5 km. PP further informed that No riparian rights issue with Rajasthan, as Aheli river flows within Madhya Pradesh.

Total land requirement of the project is 900 ha out of which Private Land is 135 ha, Forest Land is 740 ha and Government Land is 25 ha. Total submergence area is 890 ha and 10 ha will be required for Canal network. Project Benefit involves Irrigation in 11,575 ha (CCA) during rabi season in Sheopur district by efficient pressurized piped network to facilitate farmers with assured water and head for adopting micro irrigation techniques.

Project proponent informed that private land coming under submergence belongs to two villages viz. Bukhari and Chakmajidpur of district Sheopur. No population displacement will take place, as no houses are coming under submergence. Total 34 villages will benefit by the proposed scheme. Total cost of the project is Rs. 414.79 crores (Unit I Head Works: Rs. 265.44 Crore & Unit II Canals: Rs. 149.35 Crore).

The EAC noted that the Project Proponent (PP) applied for grant of ToR/Scoping Clearance for the proposed project online on 08.04.2019 and this was considered in the 23rd EAC meeting held on 23.04.2019. However, the project could not be appraised as the PP was not having NABET accredited Consultant for presentation of the project including finalization of sampling locations based on the downwind direction for preparation of EIA/EMP report. PP informed that R.S. Envirolink Technologies Pvt. Ltd (NABET Accredited) has been appointed for the proposed study.

After detailed deliberation, the EAC **recommended** for grant of standard ToR to the proposed project with the following additional ToR:

1. 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.
2. The project involves about 740 ha of forestland. Forest clearance shall be obtained as per the prevailing norms of Forest (Conservation) Act, 1980.
3. A reasonable number of samples will be collected and analyzed.
4. Application to obtain prior approval of Central Government under the Forest (Conservation) Act, 1980 for diversion of forest land required should be submitted as soon as the actual extent of forest land required for the project is known, and in any case, within six months of issuance of this letter.
5. All the tasks including conducting public hearing (as per the provisions of EIA Notification, 2006 and as amended from time to time). Public hearing issues raised and compliance of the same shall be incorporated in the EIA/EMP report in the relevant chapter.
6. Fund allocation for Corporate Environment Responsibility (CER) shall be made as per Ministry's O.M. No. 22-65/2017-IA.III dated 1st May, 2018 for various activities therein. The details of fund allocation and activities for CER shall be incorporated in EIA/EMP report.
7. Consolidated EIA/EMP report is to be submitted as per the generic structure (Appendix III & IIIA) given in the EIA Notification, 2006.
8. Conservation plan for the Scheduled I species in the project study area, if any, shall be prepared and submitted to the Competent Authority for approval.

Item No. 26.7 Banda Major Irrigation Project (CCA: 80,000 ha) in Sagar district of Madhya Pradesh by M/s Madhya Pradesh Water Resources Department- Regarding reconsideration of Environmental Clearance.

File No. J-12011/08/2018-IA-1 (R), Proposal No. IA/MP/RIV/73548/2018

The Project Proponent (PP) applied for grant of ToR online on 08.08.2019 M/s Water Resource Department, Government of Madhya Pradesh (Project Proponent) along with the consultant M/s R.S. Envirolink Technologies Pvt. Ltd, 402, Bestech Chamber Commercial Plaza, B Block, Sushant Lok I, Gurgaon, Haryana presented the proposal before the EAC and *inter alia*, provided the following:

Online application was applied on 17.03.2018 for grant of fresh Terms of Reference to the Project for preparation of EIA/EMP report. The EAC considered the same in its meeting held on 27.04.2018. After recommendation of EAC, ToR was issued by MoEF & CC on 14.05.2018 to irrigate 72,000 ha CCA. Then, revised Scoping Clearance due to change in project capacity (from 72,000 ha to 80,000 ha), submergence area and related connecting parameters was issued by MoEF & CC on 11.03. 2019. After preparation of draft report and completion of public consultation process with two Public Hearing meetings held on 02.03.2019 at Village Uldan in Sagar District and at Village Bakswaha in Chhatarpur District, Madhya Pradesh, online application was filed on 19.06.2019 for grant of environmental clearance to the proposed project.

The project site is located at latitude 24°4'35.11" N and longitude 78°45'43" E. The site is situated about 45 km away from Sagar district headquarters and about 25 km away from Banda

Tehsil headquarter. Dam site is approachable from Uldan village of Banda tehsil (3.5 km) by major district road. It envisages construction of 23 m high composite dam having concrete gravity dam including earthen bund of 710 m across Dashan River (tributary of Betwa River) near village Uldan in Sagar District of Madhya Pradesh to store 301 MCM of water to irrigate 80,000 ha CCA. The Central Spillway is 196 m long and 50 m NOF including key wall (on both sides) with 11 Nos. of Radial Gates of size 14x8.6 m with a maximum discharge capacity of 5,920 cumecs. There is a 661.50 m long earthen section on either sides of the dam portion. The gross storage is 301 MCM and the live storage is 282.31 MCM of water with approximately 20% of post monsoon flow in river. The catchment area of the project is about 1490.70 km². Total submergence area is 4,699.08 ha (Forestland is 505.50 ha, private land is 3,645.13 ha and government land is 548.45 ha). The project ensures use of micro-irrigation techniques by the users. A total of 28 villages consisting of 2,845 families are likely to be affected by this project. The total cost of the project is about Rs. 2,610.54 Crores and proposed to be completed in 5 years.

The 75% dependable yield is computed as 540 MCM by considering 24.65 MCM as upstream utilization. The net yield at the dam site comes to 515.35 MCM; whereas live storage/proposed utilization is only 282.31 MCM. More than 50% of the water stored will be available as surplus water downstream of the dam. Pressurized pipe canal system with micro network system has been proposed to irrigate 80,000 ha CCA in both Sagar and Chhatarpur districts of M.P. The command area is spread over in Banda, Malhoni, Sagar and Shahgarh tehsils of Sagar district and Buxwaha tehsil of Chhatarpur district. A total of 318 villages will be benefitted due to this project, out of which 237 villages are benefiting from Sagar district and 81 villages from Chhatarpur district. A total 155.00 km network of gravity main and rising main for DC1 (Delivery Channel-1), DC2 and DC3 to irrigate an area of 28,400 ha, 15,600 ha and 36,000 ha, respectively. The total power required for the project is 28.23 MW.

Total land requirement for the project is 4,699.08 ha; out of which 548.45 ha is Government Revenue Land, 505.50 ha is forestland and 3,645.13 ha is Private land. The Stage-I forest clearance for diversion of forestland is under process; the proposal has been submitted to MoEF & CC vide letter dated 26.09.2018. The entire forest area proposed to be diverted falls under Sagar North (T) Forest Division. Process of private land acquisition has been initiated by the District Authorities as per Right to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement Act, 2013 (LARRA); Section 11 has been completed, notification under Section 19 has been issued.

Baseline Data was collected for 3 seasons during Pre-monsoon (May, 2018), Monsoon (August, 2018) and Winter/lean (December, 2018) for preparation of EIA report.

After detailed deliberations on 19.07.2019 meeting, EAC made the following observations:

1. NOC from Govt. of Uttar Pradesh has not been obtained and submitted during the final presentation of EIA/EMP report.
2. The environmental impacts be assessed on the basis of Environmental Matrix and the same should be detailed out in the report.
3. Point-wise response to issues raised during Public Hearing should be submitted.
4. Corporate Environment Responsibility Plan should be prepared in detail and submitted with break up.
5. Specific activities should be suggested and budget to be taken under CSR activities proposed to be implemented.

The project proponent submitted the additional information online on 09.08.2019. After submission of the additional information, the proposal has been reconsidered for Environmental

Clearance. The Project Proponent and the Consultant made a presentation on the additional information and inter-alia, provided the following:

1. NOC from Govt. of Uttar Pradesh has not been obtained and submitted during the final presentation of EIA/EMP report.

The matter was discussed in detail by EAC and project proponent explained that Banda project is proposed as an irrigation project by WRD, Govt. of MP on river Dhasan, which originates in Madhya Pradesh near Jashrath village in Raisen district of Madhya Pradesh and merges into River Betwa near Dheer in Jhansi district of UP after traversing a distance of 365 km. During its journey, it flows for more than 240 km in Madhya Pradesh and then makes common border of 54 km with UP and finally flows for about 71 km in UP before merging into River Betwa.

Banda dam site is located at a distance of about 110 km from the origin of the Dhasan river. Catchment area of the Banda project is only 1490.72 km² while the total catchment area of the river is about 11808 km². At Banda dam site, 75% dependable yield is 540 MCM, out of which only 282.82 MCM shall be stored as live storage in Banda dam, remaining water will be released downstream of the dam.

Further, 84 km downstream of proposed project, there is an existing major irrigation project named Bansujara Multipurpose Project of Water Resources Department, Govt. of Madhya Pradesh, which got environment clearance vide letter No. J-12011/42/2012-IA.I dated 24/02/2014 from MoEF&CC. As informed by the PP, construction work of this project is nearing completion and it will be soon commissioned. Even after Bansujara dam, Dhasan river flows in Madhya Pradesh for about 100 km before making common boundary and entering into UP.

EAC deliberated the issue in detail and considered the fact that Banda dam is proposed far upstream on Dhasan river, tapping only about 12% of the entire catchment of Dhasan river. Downstream of proposed Banda dam, river flows for over 80 km freely up to Bansujara dam, with this intermediate catchment remains untapped. Downstream of Bansujara dam, river flows in MP for about 100 km. Therefore, any project downstream of Bansujara might raise the concern of downstream riparian rights.

2. The environmental impacts be assessed on the basis of Environmental Matrix and the same should be detailed out in the report.

A standard Environment Impact Matrix was provided in Chapter – 05, Table 5.3 of EIA report, however, the quantification and scoring part was missing. The matrix has been revised based on Leopold, et al. (1971) design which quantifies each impact linked to a particular project activity based on its magnitude and significance. Magnitude is rated on a scale from 1-5 (min to max) and significance from (-)2 to (+)2 (beneficial to detrimental; with zero value for insignificant impact). A product of magnitude and significance gives the final score. Exercise is done for without EMP and with EMP scenario and results are compared to assess the effectiveness of EMP implementation. Negative value indicated beneficial impacts. EAC discussed the matrix and scoping method in details and made observation that method is appropriate, however, overall score i.e. a sum of construction and operation phase impacts is irrelevant.

3. Point wise response to issues raised during Public Hearing should be submitted.

Public Hearings were conducted at two locations viz. at Uldan in Sagar district and Bakswaha in Chattarpur district. Point wise response to issues raised in Public hearing for Chattarpur district was provided in EIA report, however, point wise response for public queries in Sagar district was missing in the report. Signed copy of issues raised and their responses for Public Hearing held Sagar district has been submitted by project proponent and EAC find it satisfactory.

4. Corporate Environment Responsibility Plan should be prepared in detail and submitted with break up.

Proponent/consultant informed that earlier CER Plan was brief and had allocated the budget as per MoEF&CC O.M. No. 22-65/2017-IA.III dated 1st May, 2018. Now CER plan has been updated to make it specific to the needs of local affected people assessed during public consultation (site visits) and demands made during public hearing meeting. Updated Plan has been submitted to MoEF&CC online and was discussed by EAC.

5. Specific activities should be suggested and budget to be taken under CSR activities proposed to be implemented.

Proponent/consultant further informed that specific activities have been identified based on discussions and demands made during public hearing meeting and during socio-economic survey of project affected families as part of EIA study. Education, Medical and skill development has been identified as critical area along with improvement of local infrastructure and requirement of religious and community center. All 28 project affected villages are considered as affected area for CER activities. Total budget allocated for implementing the various activities and program envisaged under CER is Rs. 13.05 Crores (0.5% of Project Investment i.e. Rs. 2610.54 Crores). A detailed budget break up for five year implementation period has been submitted. EAC reviewed the plan and considered it adequate.

The EAC deliberated based on the information provided by the PP and recommended for grant of Environmental clearance to the proposed project with the following additional conditions:

- i. 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.
- ii. 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.
- iii. Preference to be given to the local villagers as per the requirements and suitability, in the job/ other opportunities in the project, etc.
- iv. 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.
- v. A copy of Stage I forest clearance to be submitted for processing of grant of environmental clearance.

Item No. 26.8 Parbati (Rinsi) major Irrigation Project in Rajgarh district of Madhya Pradesh by M/s Executive Engineering, Water Resources Department Narsingharh- Regarding Fresh Environmental Clearance.

Proposal No. IA/MP/RIV/71975/2017, File No. J-12011/01/2018-IA-I

The Project Proponent (PP) applied for grant of ToR online on 08.08.2019. Project proponent along with the consultant (M/s R.S. Envirolink Technologies Pvt. Ltd., 402, Bestech

Chamber Commercial Plaza, B Block, Sushant Lok I, Gurgaon, Haryana-122009, NABET Accredited) presented the proposal before the EAC and *inter-alia* provided the following:

The present project envisages construction of earthen dam with central spillway, three pump houses and rising/gravity mains. Earthen dam is 1050 m long and 23.40 m high across Parbati river. Central Spillway is 311 m long & 10 m key wall (on both side) with 22 Nos. radial gates of size 15.50x12.00 m with a maximum discharging capacity of 19,853.86 cumecs and foundation gallery. There is 789.0 m long earthen section on either side of the Dam portion. Storage formed by the construction of dam will have a gross storage 172.54 MCM live storage of 162.62 MCM with approximately 10 MCM post monsoon flow in river; Culturable Command Area is 48,000 ha, of Rajgarh and Bhopal districts. Total 48.0 km network of gravity main and rising main for GM1, GM2 and GM3 to irrigate area of 18,000 ha, 24,000 ha and 6,000 ha, respectively. Total power required for the project is 16.0 MW.

The proposed Dam site is located on Parbati river near the village Fatehpur in the tehsil of Narsingharh of Rajgarh district of Madhya Pradesh. The total catchment area up to Parbati Dam site is 3150 sq. km. The expected yield (virgin) at the site at 75% dependability on the basis of current data has been worked out to 924.09 MCM by NIH and after deducting upstream utilization of 198.09 MCM, the net yield comes out to 726 MCM. This gives a yield factor of 0.22 MCM/km². The top level of Dam is kept at RL 447.95, with top of gates being at RL 449.50 m, crest of the Dam at 433.45 m to restrict submergence of 3494.64 ha of land at RL 445.45 m. The submergence created on the back of Dam will require about 2290.57 ha of private land, 1204.07 ha of Govt. Land and no forest land. The benefitted area of the project lies in the zone of Lower & Medium part of lower Chambal sub basin. In this part of basin, the existing projects are mostly of medium and minor type. There is no major project constructed on Parbati river neither upstream nor downstream in Madhya Pradesh to the proposed site.

Total 53 villages shall be affected due to acquisition of land for submergence of proposed project. Project would require acquisition of 2290.57 ha of private land leading to displacement of 1125 families. These families will be resettled and rehabilitated as per the provisions of The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. The total cost of the project is about Rs.1815.54 Crores and it is proposed to be completed in 5 years.

Land requirement (Description on different types of land involved in the proposal with their present status):

S. No.	Project Component	Revenue Land (ha)	Forest Land (ha)	Private Land (ha)	Total (ha)
1.	Dam & Reservoir	1204.07	0	2290.57	3494.64
2.	Canal Network		0		
3.	Colony & Approach Road and other project components	10.00	0	-	10.00
4.	Resettlement and Rehabilitation	32.55	0	-	32.55
	Total	1246.62	0	2290.57	3537.19

The Primary data for Baseline Environmental Conditions was collected through field surveys for three seasons: Winter/lean (February 2018), Pre-monsoon (May 2018) and Monsoon (July 2018). The concentrations of PM₁₀, PM_{2.5}, SO_x and NO_x at all the sites were well within the Residential & Rural area permissible limits prescribed by National Ambient Air Quality Standard 2009 notified by CPCB. As per results of ambient noise quality monitoring the noise level in the area are within permissible limits as per CPCB standards 'The Noise Pollution

(Regulation and Control) Rules, 2000 (amended to date)'. This is mainly due to absence of any industrial establishment and low traffic density in the study area. The surface water in the study area at most of the locations fall under Class 'B' i.e. designated best use of outdoor bathing (organized) according to CPCB, Water Quality Criteria. This is because of higher count of total coliform i.e. more than 50 MPN/100 ml but is less than 500 MPN/100 ml in majority of the sites, DO is more than 5 mg/l and BOD is less than 3 mg/l. SAR values from the study area is categorized as excellent class. According to BIS standards for Drinking Water (2012) all the ground water samples collected from the study area fall within permissible limits of the same. Similarly, the Water Quality Index for all the ground water samples fall in Excellent ground water quality class. The land use/ land cover pattern of the study was interpreted from latest satellite data and the classified land use/ land cover categories interpreted. Agriculture land constitutes predominant land use in the proposed command areas. Open Deciduous and Scrub forest, which is mainly found in area around the Narsingharh Wildlife Sanctuary.

During the present study of Parbati Major Irrigation project area in all 121 plant species belonging to 40 families could be recorded. There are very sparse patches of open forests comprised of mixed deciduous forest. Tree species are mostly found near settlements and along the edges of roads outside the sampling area. *Madhucalongifolia var. latifolia*, *Azadirachta indica*, *Mangifera indica*, *Aegle marmelos*, and *Cassia fistula* are the frequently found tree species in the command area. Among the agricultural crops, wheat, gram, soybean, pigeon pea, barley, maize, lentil and linseed are most common.

During the field survey a Jackal (*Canis aureus*), Wild Boar (*Sus scrofa*), Chital (*Axis axis*), Nilgai (*Boselaphus tragocamelus*), Common Hare (*Lepus nigricollis*), Rhesus macaque (*Macaca mulatta*), Common langur (*Semnopithecus entellus*), Field rat (*Rattus rattus*) and Five-striped Palm Squirrel (*Funambulus pennantii*) were sighted in the study area. Common Hoopoe, Red-wattled Lapwing, Common Kingfisher, White-throated kingfisher, Asian Koel, Green Bee-Eater, Pea fowl, Indian Jungle Crow, House Crow, Rufous Treepie, Black Drongo, Indian Robin, House Sparrow, Baya weaver, Common Myna, Cattle Egret and Pond Heron were most frequently sighted bird species in the study area.

Different faunal species like mammals, birds and butterflies were assessed for their conservation status according to IUCN Red List categories (Ver. 2019-1) accessed in April 2019 and WPA (1972) Schedules. Among mammals, no schedule I species was sighted in the study area. Forest working plans, prepared for the forest divisions did mention presence of schedule I mammalian species in the districts where project is located, however, their presence in project vicinity could not be established.

Among the birds only one species viz. Pea fowl is listed as Schedule I species. According to IUCN Red List Sarus crane is under vulnerable category. Rest of the species is listed under Least Concern category.

Fish fauna of Parbati river was documented through data collected from secondary sources as well as information collected during field visits. 8 species are found in the study area. Most common are *Cirrhinus mrigala*, *Bangana dero*, *Rita rita*, *Devario devario* and *Chanda nama*. All these species are under Least Concern category of IUCN Red List Ver.2019-1.

PP presented the anticipated environment impacts due to proposed project during the project construction & operation phase. Irrigation schemes in general do not have much impact on air environment during their operation. However, due to construction activities such as excavation, movement of material, operation of construction equipment, storage of material, etc. air pollution occurs requiring control by mitigation measures. In an irrigation project, air

pollution occurs mainly during project construction phase. During operation phase, no major impacts are envisaged.

During construction period sources of noise will be the vehicles and equipment for excavation and construction at the project site. Due to construction activity in the area, noise levels will increase during the period of construction, however, they will remain limited to the work area mainly where large-scale construction activity will progress. Additionally, noise levels will increase on approach roads due to increased traffic. However, no major impacts are envisaged on noise environment during project operation phase.

Water is used in construction activities leading to wastewater generation with high suspended solids. Similarly, effluents due to washing from truck or equipment etc. would have high concentration of oil and grease. Assessment of quantum of wastewater from such activities is difficult, however, they can impact the nearby water bodies if surface run off with high suspended solid is washed into them. The major impacts during operation of project considered as a part of the study are i) Improvement of Ground water level; ii) Impacts on waterlogging and soil salinity; iii) Changes in water quality due to increased use of fertilizers. The ratio of submergence of Culturable land to the proposed irrigation is 7.44%.

Also, Impact Due to Muck Generation, Waste Generation, Land Requirement and change in land-use, Terrestrial Ecology and on Socio-economic Environment were studied.

An amount of **Rs. 13218.16 lakhs** has been allocated for the implementation of Environmental Management Plan and Corporate Environment Responsibility Plan for Parbati Major Irrigation Project are summarized in the table given below.

S. No.	Management Plans	Amount (Rs. in lakh)
A	Environmental Management Plan	
1	Biodiversity Conservation And Wildlife Management Plan	130.00
2	Catchment Area Treatment Plan	360.89
3	Fisheries Conservation and Management Plan	91.00
4	Command Area Development Plan	750.00
5	Rehabilitation and Resettlement Plan	9959.50
6	Landscaping, Restoration and Green Belt Development Plan	78.00
7	Reservoir Rim Treatment Plan	65.00
8	Muck Management Plan	300.00
9	Solid Waste Management Plan	92.50
10	Public Health Delivery System	147.00
11	Energy Conservation Measures	121.50
12	Disaster Management Plan	90.00
13	Implementation of Mitigation and Safety Measures	125.00
Total A		12310.39
B	Corporate Environment Responsibility Plan	907.77
Total (A+B)		13218.16

Terms of Reference to the proposed project was issued by the Ministry vide letter dated 26 Feb 2018. Instant project covers under category A as Narsinghgarh Wildlife Sanctuary is in close proximity of the project; hence general condition is applicable to the project. Revised Scoping Clearance due to change in dam site location so as to avoid project components falling within Narsinghgarh Wildlife Sanctuary was issued by MoEF&CC on 22.02.2019.

As per the provisions of EIA notification, 2006, Public Hearings (PH) for the Parbati Major Irrigation Project were conducted by Madhya Pradesh State Pollution Control Board (MPSPCB) on 02.03.2019 at Gram Panchayat Bhawan, Village: Mangalgarh, Tehsil: Bersia, District: Bhopal; 06.03.2019 at Gram Panchayat Bhawan, Village: Chandbad, Tehsil: Shyampur, District: Sehore and 08.03.2019 at Gram Panchayat Bhawan, Village: Shivpura Jagir, Tehsil: Narsinghgarh, District: Rajgarh. PH at Bhopal and Sehore was presided by the additional District Magistrate, respectively whereas at Rajgarh by Sub Divisional Magistrate.

Project benefit includes annual Rabi irrigation of 48,000 ha, rise in sub-soil water level in the project Area, development of fisheries in the reservoir, and employment to local labour during construction period.

PP submitted that project construction doesn't require acquisition of any forestland. All project components including the submergence area falls outside the boundary of Narsinghgarh WLS. A certificate has also been issued by DFO in this regard.

EAC observed that earlier proposal was considered in the 25th meeting held on 19.07.2019. EAC deliberated on the information provided by the PP and **deferred** the project for want of following information:

- i. An undertaking as part of the EIA report from Project proponent, owning the contents (information and data) of the EIA report with the declaration about the contents of the EIA report pertaining to a project have not been copied from other EIA reports.
- ii. Content of the summary EIA be made as per the Appendix III A of EIA Notification and shall be submitted.
- iii. The details of funds allocation along with the time line and activities under CER as per Ministry's O.M. No. 22-65/2017-IA.III dated 01.05.2018 shall be submitted.
- iv. Environmental matrix during construction and operational phase needs to be submitted.
- v. List of fish species needs to be reviewed with evidence based photographs.
- vi. Both capital and recurring expenditure under EMP shall be submitted.
- vii. Approved conservation plan for Schedule I species from Chief Wildlife Warden should be submitted.
- viii. PH at Rajgarh district was presided by Sub Divisional Magistrate having rank below the Additional District Magistrate. Clarification in this regard is to be submitted.
- ix. Provision of irrigation to kharif crop is to be explored.
- x. Possibilities of fish passages needs to be included for better migration of local fish species.
- xi. Details of Eco Sensitive zone of Narsinghgarh Wildlife sanctuary are to be submitted.
- xii. In EIA report length of central spillway is mentioned 369.65m long with 18 nos. of vertical gates of size 13.80m x 12.0m whereas during presentation length of spillway was mentioned 311 m with 22 radial gates. Clarification is to be submitted in this regard.

- xiii. Maximum dam height mentioned in the EIA report is 25 m whereas in the presentation made before the committee, it was 23.40 m. Clarification is to be submitted in this regard

PP submitted the above information to the Ministry on 09.08.2019, as sought by the EAC in the 25th meeting, and same was presented before the Committee. EAC noted that PP has now submitted the activities, which shall be taken under CER along with the budgetary provision. Total budget allocated for implementing the various activities and program envisaged under CER is Rs 9.08 Crores (0.5% of Project Investment i.e. Rs 1815.54 crores). Further, PP submitted the break up of total cost of EMP (Rs. 12310.39 lakhs) towards capital (Rs. 10822.00 lakhs) & Recurring (Rs. 1488.39 lakhs).

The matter was discussed in detailed where project proponent explained that project area is spread in 3 districts viz. Bhopal, Sehore and Rajgarh; therefore three Public Hearing meetings were conducted. As project proponent, WRD has fully complied with the applicable legal requirement and have submitted the draft report along with requisite fee to Pollution Control Board for conduct of Public Hearing Meetings as per the EIA notification. Bhopal and Sehore meetings held on 02.03.2019 and 06.03.2019, respectively were Chaired by respective ADMs; however, Rajgarh meeting held on 08.03.2019 was chaired by SDM due to last minute non-availability of ADM. They further confirmed, that they have taken up the matter with Collector's office and sought clarification as directed by EAC. Collector has responded in writing clarifying that the Public Hearing meeting conducted on 08/03/2019 at Rajgarh was presided with permission by Shri Sidharth Jain, (IAS), SDM. Project proponent submitted a letter signed by the Collector in this regard. EAC deliberated on the matter and opined that two Public Hearings conducted at Bhopal and Sehore are as per procedure and requirement. For Rajgarh Public hearing proper procedure has been followed in all except that it should have been chaired by an ADM rank officer or equivalent, however, only as a one-time exception this should be accepted keeping in view that this is an irrigation project which will benefit 132 villages (including 121 villages of Rajgarh district).

EAC in view of the PP submission on PH issue, opined that since out of three PHs, two were presided by the Additional District Magistrate and only one was presided by the officer below the rank of Additional District Magistrate, therefore repeat PH at Rajgarh district may not be required for the instant case. However, Ministry may take a separate call in this regard.

EAC deliberated on the information sought in the 25th meeting. Based on the information submitted and as presented, EAC **recommended the proposal for grant of Environmental Clearance** subject to compliance of applicable Standard EC (RIV &HEP sector) and following additional conditions:

- i. The Environmental Management Plan (EMP) shall be strictly adhered to and a sum of Rs. 12310.39/- lakhs (Capital: Rs. 10822.00/- lakhs & Recurring: Rs. 1488.39/-lakhs), the budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also updated proportionately.
- ii. The project proponent shall comply with the provisions contained in this Ministry's OM vide F. No. 22-65/2017-IA.III dated 1st May 2018 regarding Corporate Environment Responsibility. Project proponent shall require to invest 0.5 % of the total project capital investment i.e. Rs. 9.08 Crore. The activities under CER shall be in accordance with the submission made in the EIA/EMP report.
- iii. Necessary permission/clearance to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and subsequent amendments thereof.

- iv. 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.
- v. Wildlife Conservation plan for all Schedules I species shall be implemented with the approval of the Competent Authority.
- vi. 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.

Subject: **Re: Draft Minutes of 26th EAC meeting of River Valley Projects- reg.** Date: 09/09/19 09:21 AM
To: Dr S Kerketta <s.kerketta66@gov.in> From: Sharad Jain <s_k_jain@yahoo.com>
Reply-To: Sharad Jain <s_k_jain@yahoo.com>

26th EAC Hydro MOM_27.08.2019.docx (92kB)

Dear Dr Kerketta,
I am sending the approved minutes of the meeting.

Regards,

Sharad K Jain / शरद कुमार जैन
Director
NIH Roorkee
Tel: 01332 272106

On Wednesday, 4 September, 2019, 05:45:12 pm IST, Dr S Kerketta <s.kerketta66@gov.in> wrote:

Sir,

Draft Minutes of 26th EAC meeting of River Valley Projects is attached. It is being sent after getting comments from the EAC Members. It is requested to kindly approve the same, in case it is in order.

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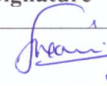
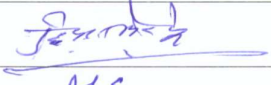
regards,

Dr. S. Kerketta
Director- IA (Thermal, River Valley & HEP)
MoEF&CC, New Delhi
Phone: 011-24695314 (O), 26113096 (R)

LIST OF MEMBERS

26th MEETING OF RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) FOR RIVER VALLEY & HYDROELECTRIC PROJECTS

DATE : 20th August 2019
TIME : 10:30 am onwards
VENUE : Narmada Hall, Indira Paryavaran Bhawan, New Delhi

Sl.No.	Name of Member	Signature
1.	Prof. Sharad Kumar Jain, Chairman	 20/8/19
2.	Shri. T. P. Singh Member	Resigned
3.	Shri. Sharvan Kumar, Member	ABS
4.	Shri N. N. Rai, Member	 20.8.19
5.	Dr. J.A.Johnson, Member	ABS
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	
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	
15.	Dr. Kerketta, Member Secretary Director (IA-1)	 20/8/2019