सत्यमेव जयते

Government of India
Ministry of Environment, Forest and Climate Change
IA Division
(River Valley and Hydroelectric Projects)
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Minutes of AGENDA OF 41ST MEETING OF THE EXPERT APPRAISAL COMMI TTEE meeting River Valley and Hydroelectric Projects held from 13/10/202 5 to 13/10/2025 **Date:** 24/10/2025

MoM ID: EC/MOM/EAC/451616/10/2025

Agenda ID: EC/AGENDA/EAC/451616/10/2025

Meeting Venue: N/A

Meeting Mode: Virtual

Date & Time:

13/10/2025	10:30 AM	05:30 PM

1. Opening remarks

The 41st meeting of the EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on through virtual mode, under the Chairmanship of Prof. G. J. Chakrapani.

2. Confirmation of the minutes of previous meeting

The Minutes of the Meeting held on 40th EAC meeting on 12th September, 2025 were confirmed.

3. Details of proposals considered by the committee

Day 1 -13/10/2025

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Saidongar 1 - Karjat Pumped Storage Project by **TORRENT PSH 3 PRIVATE LIMITED** located at **RAIGAD,M AHARASHTRA**

Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/MH/RIV/552857/2025	J-12011/04/2025-IA.I (R)	27/09/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.1.2. Project Salient Features

41.1 The proposal is for grant of Environmental Clearance (EC) to the project for Saidongar 1 - Karjat Open Loop Pumped Storage Project (3000 MW) in an area of 377 Ha at Village Potal, Saidongar, Ambot, etc, Sub District Karjat, District Raigarh, Maharashtra by M/s Torrent Psh 3 Private Limited.

41.1.2: The Project Proponent and the accredited Consultant M/s. Aarvee Engineering Consultants Limited, Hyderabad made a detailed presentation on the salient features of the project and informed that:

i. Saidongar 1 - Karjat Pumped Storage comprising of 3000MW is proposed to be located at village Pati T. Potal, Saidongar, Ambot, Dhak, Bhaliwadi, Sub district Karjat, Raigad District, Maharashtra. It will comprise of two reservoirs. Upper & lower reservoirs with a gross storage capacity of 15.87 MCM & 28.96 MCM respectively, upper reservoir will be constructed on the hilltop with maximum dam height of 27 m to create the desired storage capacity while the lower reservoir will have maximum height of 59 m and shall be constructed across River Pej. This Project envisages non-consumptive re-utilization of 14.77 MCM of water for re-circulation among these two reservoirs.

ii. The proposed Saidongar 1 - Karjat Open Loop Pump Storage Project capacity is 3000 MW (9 x 300 MW + 2 x 150 MW), installed between the upper reservoir and lower reservoir. The proposed project is intended to meet the power demands during peaking time, and the reversible turbines would function as pumps during non-peaking time to pump the water from lower reservoir to upper reservoir.

iii. Torrent PSH3 which is a subsidiary of Torrent Power Limited (TPL has entered into a Memorandum of Understanding (MoU) with the Department of Water Resources, Government of Maharashtra on 03.09.2024 to establish Saidongar 1 - Karjat Open Loop Pumped Storage Project (PSP) of 3000 MW installed capacity located in district Raigad, Maharashtra.

iv. The project has obtained Fresh ToR obtained from MoEF&CC vide letter No. J - 12011/04/2025-IA.I; dated 18.02.2025. Based on the ToR issued by MoEF&CC, the EIA Study has been conducted and detailed in the report considering proposed project as an Open loop project due to change in technical parameters of Project & formation of SPV. Earlier ToR was obtained for Closed loop project from MoEF&CC vide file no. J-12011/42/2023-IA.I (R), dated 23rd September 2023.

v. The geographical co-ordinate of the Upper & Lower Reservoir are:

Upper reservoir: Latitude 18°54'15"N and Longitude 73°24'32"E

Lower reservoir: Latitude 18°54'37"N and Longitude 73°25'34"E.

vi. **Land Requirement**: For the development of Saidongar-1 PSP, land would be required for construction of project components, reservoir area, muck dumping, construction camps and colony, etc. Total land required for the construction of proposed activities is approximately 377 ha (233 ha forest land and 144 ha of non-forest land)

vii. **Demographic details in 10 km radius of project area:**

The project is proposed in Karjat Taluka of Raigad district in Maharashtra. The project consists of land acquisition of 377 ha in which 233 ha is forest area and remaining 144 ha is private land. The table below shows the affected land areas land area (non-forest) due to the proposed project

Affected Villages and Land Requirement

S. No	Name of village	Area (Ha)
1.	Bhaliwadi	2.29
2.	Ambot	1.34
3.	Potal	6.87
4.	Pali	48.14
5.	Saiongar	11.79
6.	Dhak	73.55
	Total	**144**

viii. **Water Requirement:**

Construction Activities: 1060 KLD will be sourced from the private water suppliers through water tankers.

Labour Camps: 540 KLD will be sourced from the private water suppliers through water tankers.

Operation Phase: Total water requirement for the project is 23 MCM for initial filling, and 3 MCM annually to compensate for evaporation losses. This water will be sourced from the self-catchment of Pej River. The Water Availability Certificate has been obtained from the Hydrology Department, WRD Nashik on 13.01.2025, which is the competent authority under the GoMH PSP Policy 2023. It is ensured that this project will not impact downstream existing water users like irrigation or drinking supply.

ix. **Project Cost:** The estimated project cost is Rs. 13,505.15 Crores. Total capital cost earmarked towards environmental management plan is Rs. 73.07 Crores (Capital Cost: Rs. 51.54 Crores & Recurring Cost: Rs. 21.53 Crores for four years).

x. **Project Benefits**

The Saidongar-1 Karjat Open Loop PSP will provide energy storage, load balancing, frequency control, and peak power generation, offering both economic and environmental benefits, including improved air quality through efficient and reliable power generation.

1. Improvements in Physical Infrastructure:

The Saidongar-1 Karjat PSP, with an installed capacity of 3000 MW & average annual generation of 6241.50 MU, is projected to yield total power sale benefits of ₹1,23,821.2 Crores over its 40-year lifespan. After accounting for operating costs, depreciation, and interest of ₹14,399.42 Crores, the net contribution to the national economy is estimated at ₹1,09,431.78 crore.

2. Improvement in Social Infrastructure & Employment Potential:

Local Area Development Plan: Local Area Development Plan will be addressing aspects of local sustainable development like community development & environment protection in and around the proposed Project, with budgetary estimate of **Rs. 500 Lakhs**

3. Creation of Direct and Indirect Employment:

The Saidongar 1 - Karjat PSP is envisaged to create direct & indirect employment of 2000 persons during construction phase of the project.

xi. **Environmental Sensitive area:** There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km radius from the project site.

xii. **MoU/any other clearance/permission signed with State government:** Torrent PSH3 Private Limited is a subsidiary of Torrent Power Limited (TPL). Torrent PSH3 has entered into a Memorandum of Understanding (MoU) with the Department of Water Resources, Government of Maharashtra on 03.09.2024 to establish Saidongar 1 - Karjat Open Loop Pumped Storage Project (PSP) of 3000 MW installed capacity located in district Raigad, Maharashtra.

xiii. **Resettlement and Rehabilitation**: Not Applicable

As per the Government of Maharashtra Gazette notification (Maharashtra Gazette notification No. LQN. 12/2013/C.R. 190/A-2 dated 27th August 2014) the provisions of Rehabilitation and Resettlement under RFCTLARR 2013 will apply only in case of private company purchases land through private negotiations to an extent equivalent or more than 1000 hectares and the project area is less than 1000 Ha.

The analysis of the alternatives for alignment is evaluated using Environmental Impact Assessment Decision Support System (EIADSS). The Impact scoring criteria are mainly categorized into five groups *(viz. Natural Resource Environment, Physical Environment, Biological Environment, Social Environment, & Engineering Environment)*. For option-1, 2, 3 & 4, the cumulative weighted percentage is worked out to be 44%, 46%, 47% and 39% respectively. The minimum weighted percentage indicates the best alternative, and the maximum weighted percentage indicates the poor for the project. So, it is concluded that the minimum weighted percentage obtained to option-4 and is recommended for this project which will have social & environmental acceptability, technically viability and economic & financial feasibility.

Period	From October 2024 to May 2025
AAQ parameters at 6 locations (min. & Max.)	PM10 = 57.4 to 96.3 µg/m3 PM2.5 = 25.4 to 52.6 µg/m3 SO2 = 7 to 18.9 µg/m3 NOx = 14.6 to 33.7 µg/m3 CO = 0.32 to 0.57 mg/m3
Incremental GLC Level	PM10 = Max. GLC : 81.2µg/m3
River & Pond water samples (14 samples)	pH: 6.96 to 8.19, Dissolved Oxygen: 6.1 to 7.8 mg/L Total Dissolved Solids: 96 to 986 mg/L Total Hardness (as CaCO3): 12.8 to 259.4 mg/L Calcium (as Ca): 6.2 to 74.2 mg/L Magnesium (as Mg) : 1.8 to 23.8 mg/L Sulphate (as SO4): 2 to 40 mg/L Nitrate (asNO3) :0.1to 8.4 mg/L Chloride (as Cl) : 9.6 to 81.2 mg/L Iron (as Fe): 1.2 to 4.6 mg/L BOD 0.02 to 0.823 mg/L Heavy metals like Copper (as Cu), Lead (as Pb), Cadmium(as Cd), C

	hromium (as Cr), Manganese (as Mn), Arsenic (as As) and Mercury(as Hg) : Within the IS:2296 Class C Limits
Ground Water sam ples at 12 locations	PH: 7.56 to 9.08; Total Dissolved Solids: 143 to 637 mg/L total Hardness (as CaCO3): 42 to 278 mg/L Total Alkalinity(asCaCO3): 8 to 256 mg/L Calcium (as Ca): 12.27 to 87.95 mg/L Magnesium (as Mg): 2.04 to 32.66 mg/L Sulphate (asSO4): 2.4to 78 mg/L Nitrate (as NO3): 0.1 to 1.5 mg/L Chloride (as Cl): 13.2 to177 mg/L Iron (as Fe): 0.01 to0.82 mg/L Heavy metals like Copper (as Cu), Lead (as Pb), Cadmium(as Cd),Ch romium (as Cr), Manganese (as Mn), Arsenic (as As) and Mercury(as Hg) : Within the IS;10500 Standards
Noise levels Leq (D ay & Night) at 12 l ocations	The Leq values for day time was observed to be 52 to 55.1 dB (A) i n residential area, while during night time 45.1 to 46.3 dB (A).
Soil Quality at 12 L ocations	Bulk density:1.31 to 1.6 gm/cm3; pH range 6.46 to 7.89; Electrical conductivity (EC); 53 to 298 µS/cm; calcium content: 80.4 to 3644 mg/kg; sodium: 54.2 to 134.3 mg/kg; potassium: 28.5 to 790 mg/kg; Nitrogen: 571 to 2528 mg/kg; Phosphorous: 3.2-to 31 mg/kg; Magnesium: 29.2 to 763 mg/kg; Organic Matter: 0.28 to 3.7
Flora & Fauna	Schedule-I species observed in the study area: Mammals (14): Indian Jackal, Indian Fox, Indian Wolf, Jungle Cat, Le opard, Indian Porcupine, Sloth Bear, Bonnet Macaque, Gray Langur, Asian Palm Civet, Small Indian Civet, Four-horned Antelope, and Sa mbar Deer, along with Indian Pangolin, have been reported from th e study area. Birds (6): Indian Peafowl, Brahmini Kite, Osprey, Black Eagle, Whit e-eyed Buzzard and Shikra. Reptiles (6): Asian Chameleon, Russell's Viper, Indian Cobra, Rat Sn ake, Indian Python, and Bengal Monitor.

xvi. Details of Solid waste/ Hazardous waste generation/ Muck and its management, muck generated

Muck Generation

The construction activities of the project would generate muck from excavation of various project structures. The total quantity of muck generated rock excavation is about 110.78 Lakh cum. Total quantity of muck proposed to be disposed in designated muck disposal area, after considering swelling factor, Compaction factor and reuse would be 65.69 Lakh cum. The entire excavated material is proposed to be dumped at three locations identified specifically for this purpose

xvii. Public Hearing for the proposed project has been conducted by the State Pollution Control Board on 03.09.2025. The main issues raised during the public hearing are related to Land Acquisition (Forest & Non-Forest Land), Environmental and Ecological Issues of Concern.

xviii. The salient features of the project are as under:-

1. EAC MEETING DETAILS:		
EAC meeting/s	:	41st Meeting of Expert Appraisal Committee (River Valley & Hydro-Electric Projects)
Date of Meeting/s	:	13.10.2025
Date of earlier EAC meetings	:	29.01.2025 (For Terms of Reference)

2. PROJECT DETAILS:		
Name of the Proposal	:	Saidongar 1 - Karjat Open Loop Pumped Storage Project (3000 MW), Raigad District Maharashtra
Proposal No.	:	IA/MH/RIV/552857/2025
Location (Including Coordinates)	:	State: Maharashtra District: Raigad Tehsil: Karjat The geographical coordinates of the proposed Upper Reservoir Latitude: 18°54'15" N & Longitude: 73°24'32" E Lower Reservoir Latitude: 18°54'37" N & Longitude: 73°25'34" E
Company's Name	:	Torrent PSH3 Private Limited
CIN no. of Company/user agency	:	U35100GJ2023PTC147330
Accredited Consultant and certificate no.	:	NABET/EIA/23-26/SA 0247
Project location (Coordinate	:	The geographical coordinates of the proposed

s /River/Reservoir)		Upper Reservoir at Dhak Village Latitude: 18°54'15" N & Longitude: 73°24'32" E Lower Reservoir at Pali T. Kothal Kalathi Latitude: 18°54'37" N & Longitude: 73°25'34" E
Inter- state issue involved	:	No
Proposed on River/ Reservoir	:	Pej River
Type of Hydro-electric project	:	Open loop
Seismic zone	:	III

3. CATEGORY DETAILS:		
Category of the project	:	A
Capacity / Cultural command area (CCA)	:	3000 MW
Attracts the General Conditions (Yes/No)	:	No
Additional information (if any)	:	Nil

4. ToR/EC Details		
ToR Proposal No.	:	IA/MH/RIV/517008/2025
EAC meeting date	:	29.01.2025
ToR Letter No.	:	J-12011/04/2025-IA.I (R)
ToR grant Date	:	18.02.2025
Cost of project	:	INR 13,505.15 Cr
Total area of Project	:	377Ha
Height of Dam from River Bed (EL)	:	Lower Reservoir - 59m Upper Reservoir - 27m
Details of submergence area	:	Nil
District to provide irrigation facility (if applicable)	:	Not Applicable

Details of tunnels on upper level & lower level and length of canal (if applicable)	:	Tail Race Tunnels Shape – Circular Lining - Concrete DTT & TRT (Big Unit) Numbers – 9 nos. Diameter – 5.8 m Length – 58.50 m Main TRT (Big Unit) Number – 4 nos. Diameter – 7.10 m Length – 275 m DTT & TRT (Small Unit) Number – 2 nos. Diameter – 3.6 m Length – 43 m Intermediate TRT (Small Unit) Numbers – 1 no. Diameter – 5 m Length – 30 m Main TRT (Small Unit) Numbers – 1 no. Diameter – 7.10 m Length – 367 m
No. of affected Village.	:	Nil (No Rehabilitation is envisaged in pro ject)
No. of Affected Families	:	Nil (No Rehabilitation is envisaged in pro ject)
Project Benefits	:	· Contribution to the Growth of National Ec onomy · Creation of Direct and Indirect Employmen t · Reduction of Carbon Emissions · Local Area Development under CER · Other Tangible benefits include · Green Belt Development · Large Scale Plantation · Subsidiary Industrial Opportunities
R&R details	:	The proposed project does not involve R&R activities
Catchment area/ Command area	:	23.4km2
Types of Waste and quantity of generatio n during construction/Operation	:	Muck waste generated during the constr uction phase is 110.78 lakh cum

Material used for blasting and its Composition as per DGMS standards.	:	Cartridge of Gelatine (Nitrate mixture)
E-Flows for the Project		
Is Projects earlier studied in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes then E-flow with TOR/Recommendation by EAC as per CIA&CC study of River Basin.	:	Not Applicable
If not the E-Flows maintain criteria for sustaining river ecosystem.	:	The proposed project envisages a non-consumptive utilization of 23 MCM (one time filling requirement) which will be sourced in 2 -3 year of time during monsoon season. 3 MCM (Annual recoupment requirement) will be sourced each year in the monsoon season. Water availability studies by Water Resource Department, Nasik, Maharashtra was carried out and water availability certificate is issued to the project on 13.01.2025 ensuring the ecological flow & requirement of downstream user
Details on provision of fish pass	:	Specific Fisheries Management Plan is not proposed for the river Pej as the water flows only during the monsoon season or rainy days otherwise remains almost dry, therefore, this stream does not support a significant aquatic life. However, to promote Pisciculture in the surrounding villages, a budgetary estimate of Rs. 60 Lakhs is proposed as per Fisheries Management Plan.
Project benefit including employment details (no of employee)		Construction of the proposed project would create several direct employment opportunities. The construction phase will last for about 45-48 months. The total number of persons engaged in the project including the service population will be about 2000 nos.
Area of Compensatory Afforestation (CA) with tentative no. of plantation.	:	Compensating for the loss of 233 hectares of Class I forest category in Maharashtra requires plantation with native trees at a density of 0.7. The estimated budget for this compensatory plantation is ₹ 4.86 crores including

		the land preparation, saplings, labor, irrigation & four years of maintenance.
Previous EC details	:	Not applicable
EC Compliance Report by R.O, MOEF&CC	:	Not applicable

5. ELECTRICITY GENERATION CAPACITY:		
Powerhouse Installed Capacity	:	3000 MW
Generation of Electricity Annually	:	6241.50 MU
No. of Units	:	11nos (9x300 MW + 2x150 MW)

6. MUCK DISPOSAL DETAILS:		
No. of proposed disposal area/ (type of land- Forest/Pvt land)	:	3 muck disposal sites with an area of 41.88 ha (Non-forest land)
Cross section of proposed muck area, Height of muck with slope.	:	Slope - 30° Height - 26m
Distance of muck disposal area(location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.	:	Proposed Muck disposal Site (Site 5C) 1.60 km from the HFL of proposed lower reservoir. 300 m from HFL of Pej River Other Muck disposal sites (5A & 5B) are 200 & 500 m away from the HFL of the Upper Reservoir
Total Muck Disposal Area	:	41.88 ha
Estimate Muck to be generated	:	110.78 lakh cum
Transportation	:	The generated muck will be carried in dumper trucks covered properly tied to the vehicle in line with international best practices. All precautionary measures will be followed during the dumping of muck. All dumpers will be well maintained to avoid any chances of loose soil from being falling during the transportation. All routes will be periodically wetted with the help of sprinklers prior to the movement of dump trucks. Dumping would be avoided during the high-speed wind, so that suspended particulate matter (PM10) levels could be maintained.

Monitoring mechanism for Muck Disposal Transportation	:	· Muck shall be dumped from bottom in lay ers of 500-700mm depending on size of boulders · Each layer shall be rolled compacted. · A layer of soil shall be spread on top of it to make it suitable for plantation. · All norms of Forest department, SPCB and MoEF&CC and their acts related to muc k disposal shall be complied with. · Design consultant shall be engaged for de signing of retaining structures. · Plantation shall be done on the reclaimed l and and native variety of plants and tree s shall be planted.

7. LAND AREA BREAKUP		
Private land	:	144ha
Government land/Forest Land	:	233 Ha
Submergence area/Reservoir area	:	Upper Reservoir: 115.78 Ha Lower Reservoir: 123.61 Ha
Land required for project components	:	Upper Reservoir: 115.78 Ha Lower Reservoir: 123.61 Ha Water Conductor System: 38.63 Ha

8. PRESENCE OF ENVIRONMENTALLY SENSITIVE AREAS IN THE STUDY AREA		
Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Ye s/ No**	**Details of Certificate/ letter/Remarks**
Reserve Forest/Protected Fores t Land	Yes	Based on the recommendations of the Additio nal PCCF & Nodal Officer, Maharashtra State, Nagpur the Revenue & Forest Department, M antralaya, Mumbai, forwarded the file to the S ecretary, MoEF&CC, GoI on 19.09.2025 vide No. FLD-1325/CR-106/F-10, duly recommen ding the diversion of 233 ha of forest land for the proposed project.
National Park	No	None within 10km radius
Wildlife Sanctuary	No	As per letter dated: 06.06.2025 of the Deputy Conservator of Forest, Alibag, The aerial distance from the project site to th e Bhimashankar WLS is 15.53 Km and Bhimas hankar WLS ESZ is 15.168 Km.

		The same has been confirmed by the Revenue & Forest Department, Mantralaya, Mumbai on 19.09.2025
Archaeological sites monument s/historical temples etc	No	None within 100 – 200 m radius
Additional information (if any)	-	-

Availability of Schedule-I species in study area:

Mammals (14): Indian Jackal, Indian Fox, Indian Wolf, Jungle Cat, Leopard, Indian Porcupine, Sloth Bear, Bonnet Macaque, Gray Langur, Asian Palm Civet, Small Indian Civet, Four-horned Antelope, and Sambar Deer, along with Indian Pangolin, have been reported from the study area.

Birds (6): Indian Peafowl, Brahmini Kite, Osprey, Black Eagle, White-eyed Buzzard and Shikra.

Reptiles (6): Asian Chameleon, Russell's Viper, Indian Cobra, Rat Snake, Indian Python, and Bengal Monitor.

9. PUBLIC HEARING (PH) DETAILS	
Advertisement for PH with date	02.08.2025
Date of PH	03.09.2025
Venue	Gaurkamath Village, Taluka Karjat, District Raigad, Maha rashtra
Chaired by	Additional District Magistrate Shri Sandesh Shirke, in the presence of Shri Bhosale Saheb, Regional Officer, MPCB and Smt. Rutuja Bhalerao, Sub-Regional Officer, MPCB
Main issues raised during PH	Land Acquisition (Forest & Non-Forest Land), Environm ental and Ecological Issues of Concern
No. of people attended	442

10. BRIEF OF BASELINE ENVIRONMENT:	
Particulars	**Details**
Period of baseline data collection/ Sampling period.	Winter (December 2023 to February 2024), Post monsoon (October to December 2024) Pre-monsoon (March to May 2025)
Number of Sampling Locations for Ai r, noise, water, land	Air Quality – 6 locations Surface Water – 14 locations Ground Water – 12 locations Soil Quality – 12 locations Noise Level – 12 locations
Flora and fauna of the project area,	A mix of thorny, succulent and xerophytic bushes are common such as Chromolaena odorata, Urena

	lobata and Hygrophila serpyllum whereas on the slopes and foothills trees such as Butea monosperma, Cassia fistula, Azadirachta indica etc are found. The slopes at the sides of the stream (i.e. lower reservoir) shows good presence of greenery with tree species like Careya arborea, Terminalia alata, Terminalia arjuna, Terminalia bellerica, Euphorbia nivvulia Madhuca longifolia var. latifolia, and Diospyros melanoxylon and Ficus hispida etc. In detail is provided in the EIA& EMP report
Aquatic ecology, etc.	The lower reservoir will be constructed on the river Pej in which water flows only during the monsoon season or rainy days otherwise remains almost dry, therefore, this stream does not support a significant aquatic life and no migratory fish aspects is observed. In detail is provided in the EIA& EMP report
Brief description on hydrology and water assessment as per the approved Pre-DPR:	The proposed PSP is being planned on the allocated water from Pej river reservoir, for utilization by re-circulation. The upper reservoir is away from any river course and do not have any natural streams draining into the reservoirs. The yield into the upper reservoir & lower reservoirs are assumed to be exactly proportional to area, which of the reservoir is 1.15 & 1.23 Sq.km respectively, 3 MCM of water is available at 90% dependability to recoup losses (with one-time filling requirement of 23 MCM) for lower dam of Saidongar-1 PSP of 3000 MW at Karjat, Raigad in Ulhas River sub basin if west flowing river basin. Yield available at proposed Lower dam of Saidongar-1 PSP at 90% dependability is 34.177 MCM as against the demand of 3.0 MCM. The Chief Engineer, Hydrology & Dam safety, Nashik issued a Water availability certificate to the project on 13.01.2025
Additional detail (If any)	--

11. COURT CASE DETAILS:

Court Case	:	Nil
Additional information (if any)	:	--

12. STATUS OF OTHER STATUTORY CLEARANCES

Particulars	**Letter no. and date**
Status of Stage- I FC	Based on the recommendations of the Additiona

	l PCCF & Nodal Officer, Maharashtra State, Nag pur the Revenue & Forest Department, Mantrala ya, Mumbai, forwarded the file to the Secretary, MoEF&CC, GoI on 19.09.2025 vide No. FLD-13 25/CR-106/F-10, duly recommending the diversi on of 233 ha of forest land for the proposed pro ject.
Approval of Central Water Commission	-
Approval of Central Electricity Authorit y	CEA-PS-11-23(23)/2/2025-PSPA-IDivision I/460 58/2025 dated 10.01.2025
Additional detail (If any)	· Wildlife conservation Plan has been prepared and o btained approval on 23.06.2025 from PCCF Mah arashtra State, Nagpur. · Approval for the Large-Scale Plantation obtained fr om the Forest Range Officer Karjat East on 19.0 9.2025
Is FRA done for FC-I	The FRA process is initiated and gram sabha app roval for Dhak village is pending with SDM, Karja t

13. DETAILS OF EMP

S. No	Environmental Pla ns	Capital Cost (L akh)	Recurring Cost (Lakh)				Total C ost (Rs. Lakh)
			Y1	Y2	Y3	Y4	
1	Biodiversity Conse rvation & Wildlife Conservation Plan	326.00	0.00	0.00	0.00	0.00	326.00
2	Fisheries Develop ment Plan	60.00	0.00	0.00	0.00	0.00	60.00
3	Muck Dumping & Management Plan	668.20	626.20	626.20	626.20	626.20	3173.00
4	Landscaping, Rest oration of Constru ction Sites	100.00	25.00	25.00	25.00	25.00	200.00
5	Sanitation and Soli d Waste Managem ent Plan	120.00	10.00	10.00	10.00	10.00	160.00
6	Public Health Deliv	270.00	15.00	15.00	15.00	15.00	330.00

S. No	Environmental Plans	Capital Cost (Lakh)	Recurring Cost (Lakh)				Total Cost (Rs. Lakh)
			Y1	Y2	Y3	Y4	
	ery System						
7	Energy Conservation Measures	175.00	20.00	10.00	10.00	10.00	225.00
8	Labour Management Plan	100.00	5.00	5.00	5.00	5.00	120.00
9	Green Belt Development Plan	115.00	10.00	10.00	7.50	7.50	150.00
10	Pollution Mitigation Measures	81.30	5.00	5.00	5.00	5.00	101.30
11	Environmental Monitoring Program with administrative and logistic costs	0.00	38.00	38.00	38.00	34.35	148.35
12	Reservoir Rim Treatment Plan	50.00	100.00	100.00	100.00	100.00	450.00
13	Disaster Management Plan	250.00	15.00	5.00	5.00	5.00	280.00
14	Watershed Development Plan	359.00	0.00	0.00	0.00	0.00	359.00
15	Catchment Area Treatment plan	382.25	0.00	0.00	0.00	0.00	382.25
16	Large scale Plantation	384.00	0.00	0.00	0.00	0.00	384.00
17	Local Area Development Plan	100.00	200.00	100.00	50.00	50.00	500.00
18	Net Present Value, CA land & CA plantation*	0.00	0.00	0.00	0.00	0.00	0.00
19	Resettlement and Rehabilitation*	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**5154.25**	**663.00**	**533.00**	**480.50**	**476.85**	**7307.60**

S. No	Environmental Plans	Capital Cost (Lakh)	Recurring Cost (Lakh)				Total Cost (Rs. Lakh)
			Y1	Y2	Y3	Y4	
	Capital	5154.25		Recurring	2153.35		7307.60

3.1.3. Deliberations by the committee in previous meetings

N/A

3.1.4. Deliberations by the EAC in current meetings

The EAC during deliberations noted the following:

· The EAC deliberated on the information submitted and presented during the meeting, observing that the proposal is for the grant of Environmental Clearance (EC) to the project for Saidongar 1 - Karjat Open Loop Pumped Storage Project (3000 MW) in an area of 377 Ha at Village Potal, Saidongar, Ambot, etc, Sub District Karjat, District Raigarh, Maharashtra by M/s Torrent Psh 3 Private Limited.

· The project is listed under S.N.1(c) of the Schedule to the Environmental Impact Assessment (EIA) Notification as a Category 'A' project, which requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

· The EAC, constituted under the provisions of the EIA Notification, 2006, and comprising expert members/domain experts in various fields, examined the proposal submitted by the Project Proponent, including the EIA/EMP reports prepared and submitted by the Consultant accredited by QCI/NABET on behalf of the Project Proponent.

· The EAC noted that the Project Proponent has provided an undertaking affirming that the data and information provided in the application and enclosures are accurate to the best of their knowledge, with no suppression of information in the EIA/EMP reports. The proponent also acknowledged that if any part of the data/information submitted is found to be false or misleading at any stage, the project will be rejected, and any Environmental Clearance granted will be revoked at the risk and cost of the Project Proponent.

· The EAC observed that earlier Terms of Reference issued by MoEF&CC, New Delhi vide 12011/42/2023-IA.I (R), dated 23.09.2023 to the project, however due to change in scope of the project, PP has obtained fresh Terms of Reference granted by MoEF&CC vide letter No. J -12011/04/2025-IA.I; dated 18.02.2025

· The EAC noted that the baseline data has been carried out from October 2024 to May 2025 and all the parameters are within the prescribed norms. Additionally, it was noted by the EAC that the total land requirement is about 377 ha ha for the construction of various project components, out of which 233 ha forest land and 144 ha of non-forest land. It was noted that the Stage-I Forest Clearance is still pending for diversion of 233 ha forest land land, however it was informed that based on the recommendations of the Additional PCCF & Nodal Officer, Maharashtra State, Nagpur the Revenue & Forest Department, Mantralaya, Mumbai, forwarded the file to the Secretary, MoEF&CC, GoI on 19.09.2025 vide No. FLD-1325/CR-106/F-10, duly recommending the diversion of 233 ha of forest land for the proposed project.

· The EAC inquired about the land acquisition status required for non-forest land for the proposed project, accordingly PP vide email dated 14.10.2025 submitted that the Non-Forest land of 144ha comprises of private and government land which are under process of transfer through one to one negotiation as per the provision of Maharashtra Land Revenue

Code 1966 read with The Maharashtra Agricultural Lands (Ceiling on Holdings) Act, 1961 and The Maharashtra Land Leasing Act 2017. The status of statement of transfer is stated as under:

S.no	Village	Name of Gram Panchayat	Total Land Area Required		Land Area Acquired		Status of land acquisition
			ha	acre	ha	acre	
1	Hedvali, Sawale, Mandavane	Potal	30.00	75.00	30.00	75.00	Agreement to lease executed with Landowner
2	Gaulwadi	Pali	19.00	47.00	19.00	47.00	MOU executed with Landowner.
3	Pulachiwadi	Bhaliwadi	39.00	97.00	39.00	97.00	Application done to GoM, currently in advance stage of approval.
4	Dhak	Vadap	56.00	138.32	**14.00**	**35.78**	Sale deed Executed.
Total Land Area in ha			**144.00**	**355.68**	**102.00**	**254.78**	

· The EAC noted that the Public hearing was conducted on 03.09.2025 at Gaurkamath Village, Taluka Karjat, District Raigad, Maharashtra and chaired by Additional District Magistrate Shri Sandesh Shirke. Public notice mentioning venue location, date and time published in the three Number of Newspaper (one English daily - Indian express and two vernacular daily - Lokmat & Krushiwal) on 02.08.2025. The EAC discussed the concerns raised during the Public Hearing (PH) and reviewed the action plan submitted by the PP to address these issues. After detailed deliberation, the Committee found the action plan satisfactory, recognizing that the proposed mitigation measures adequately respond to stakeholder's concerns.

· The committee observed that the proposed area of Saidongar 1 - Karjat pumped storage project falls in the Western Ghats, therefore, the EAC sub-committee had carried out a site visit to project site from 21.04.2025 to 23.04.2025. The sectoral EAC has discussed the site visit report in 31st EAC meeting held on 15.05.2025 and made Observations/Recommendations. It was noted that the PP has provided satisfactory information/response to the recommendations of the EAC (Sub -Committee).

· The Committee noted that total water requirement for the project is 23 MCM for initial filling, and 3 MCM annually to compensate for evaporation losses. This water will be sourced from the self-catchment of Pej River. The Water Availability Certificate has been obtained from the Hydrology Department, WRD Nashik on 13.01.2025, which is the competent authority under the GoMH PSP Policy 2023.

· The EAC during the meeting, noted that the project layout had not been approved by the CEA. In response, the PP informed that the layout approval letter had been obtained on the same day of the meeting. Subsequently, the PP vide email dated 14.10.2025 submitted the layout approval letter dated 13.10.2025 issued by the CEA.

· The Committee observed that provision of a piped water supply arrangement and cleaning and rejuvenation of local water bodies, including ponds, is a pressing need for the local villagers and should be considered as part of the project's community development and environmental

management activities.

· The Committee observed that the road width, particularly along straight stretches, can be reduced to 7 meters without any technical constraints, while additional widening may be limited to hairpin bends or U-turns. Such optimization would help in minimizing forest land diversion and saving a significant number of trees.

The EAC after examining the information submitted and detailed deliberations recommended the proposal for grant of Environmental Clearance by the Ministry to Saidongar 1 - Karjat Open Loop Pumped Storage Project (3000 MW) in an area of 377 Ha at Village Potal, Saidongar, Ambot, etc, Sub District Karjat, District Raigarh, Maharashtra by M/s Torrent Psh 3 Private Limited, under the provisions of EIA Notification, 2006 and as amended time to time with subject to compliance of applicable Standard EC conditions and following specific environmental safeguard conditions:

3.1.5. Recommendation of EAC

Recommended

3.1.6. Details of Environment Conditions

3.1.6.1. Specific

Miscellaneous:	
1.	After 5 years of the commissioning of the project, a study shall be undertaken regarding impact of the project on the environment. The study shall be undertaken by an independent agency.
2.	The conditions mentioned in the Western Ghats notification (draft notification no. S.O.3060(E) dated 31.07.2024) for development of hydro-power projects issued by the MOEF&CC shall be complied with.
3.	A dedicated team to oversee environmental management activities (at project site) shall be set up comprising Environment Manager having post graduate qualification in Environmental Sciences/ Environment Engineering along with other supporting staff. The Environment Manager Shall report to Project Head directly.
4.	PP shall procure construction material only from those Organizations having all valid legal/statutory clearances/permissions or necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and as amended thereof.
Socio-economic:	
1.	Land acquired for the project shall be suitably compensated in accordance with the prevailing guidelines of the state government and provisions under Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
2.	RO plant shall be installed in the nearby 5 villages and the maintenance shall be done by the project Authorities.

3.	Solar panel be provided to the families living in rural areas within 10 km radius of project.
4.	School up to 12th Standard shall be established and managed to provide free quality education for children from project affected villages/Tribal villages. Adequate transportation facilities shall also be provided to students to ensure connectivity and ease of access.
5.	50 bed multi-specialty hospital shall be established to cater the need of tribal population/locals. The tribal population within 10 km radius of the project shall be given free of cost medical facility.
6.	Skill development Centre shall be established within 10 km radius of the project and regular training programmes for development and promotion of traditional art/products of tribal/local population. The Skill Development Plan shall mandatorily include the following components: · Capacity building and skill enhancement programs aligned with local livelihood opportunities. · Establishment of linkages with Industrial Training Institutes (ITIs) and other recognized training centres for imparting technical skills. · Provision of free or subsidized access to healthcare facilities in project-supported hospitals and health centres. · Support to educational institutions in the study area through free services, scholarships, infrastructure strengthening, and vocational guidance programs. · Special outreach initiatives for women, youth, and vulnerable groups within the SC/ST communities to ensure inclusive participation and benefits. · The Plan shall be implemented in a time-bound manner with clearly earmarked budgetary provisions, which shall not be diverted for any other purpose.
7.	The PP shall submit annual progress reports on the implementation of the Skill Development Plan and associated community welfare measures to the Regional Office of the Ministry.
8.	Bio-Gas plant shall be installed in the Project affected area for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.
9.	Preference in employment opportunities and admission to ITI institutions shall be given to Project Affected Families (PAFs).
10.	An institutional mechanism to be developed to ensure the preference of jobs to PAFs and SC/ST and also a policy for preferential treatment for award of sundry works to the PAFs and SC/ST and their dependents.
11.	The compliance of above conditions shall be monitored by IRO, MoEF&CC and regularly site visit once in year. The compliance report of IRO shall be regularly submitted to MoEF&CC.
Disaster Management:	
1.	Disposal of the excavated muck and its filling on the low-lying area with proper measures for the stabilization and greenery to minimize the impacts of the generated construction muck shall be taken up pari passu with construction work. A muck transportation plan shall be prepared and implemented. The movement of muck carrying vehicles shall be monitored through latest sensor-based technology to ensure the muck dumping at designated sites.

2.	Stabilization of muck disposal sites using biological and engineering measures shall be taken up immediately to ensure that muck does not roll down the slopes and does not pollute the natural streams and water bodies in surrounding area. The plantation on muck disposal site with local species for restoration of ecology and environment of the project site area.
3.	Necessary control measures such as water sprinkling arrangements, and construction of paved roads leading to muck disposal sites etc. shall be taken up on priority to arrest fugitive dust at all the construction sites.
4.	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.
5.	Technical appraisal of project shall be obtained from CEA in terms of Office Memorandum no. 15-23/3/2021-Hydel-II dated 29.08.2025 issued by the Ministry of Power, before start of construction activities of the project.
6.	Landslide and other heavy rain related disasters shall be taken care of through appropriate preventive measures during construction and operation of project.
Environmental management and Biodiversity conservation:	
1.	Stage-I FC shall be obtained before grant of EC.
2.	The water of rainfall yield of self-catchment of the reservoir shall be released to downstream through body of dam/ barrage/ embankment etc.
3.	The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. 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 be updated proportionately.
4.	The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.
5.	Ambient Air Quality Monitoring Stations for real time data to be installed at project site before commencement of the construction, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.
6.	No vehicle purchase shall be allowed from funds earmarked for implementation of Wildlife Conservation plan. Measures for minimizing the human-animal conflict specially for black bear and leopard be suitably incorporated in the wildlife conservation plan in consultation with State Forest Department.
7.	10000 plants shall be planted around the muck disposal area and the survival of plants shall be submitted with the 6 monthly compliance report.
8.	Plantation of saplings shall be carried out as a part of the tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).
9.	Watershed development plan prepared by ICAR-Indian Institute of Soil and Water

	Conservation Research Centre, Vasad-388306, Anand, Gujarat shall be implemented within 10 km radius of the project. At least one existing water body in each village within the study area shall be conserved/rejuvenate/restore in consultation with the local authorities. Implementation status be submitted in the 6 monthly compliance report to the concerned regional office of the Ministry.
10.	PP shall prepare time bound reclamation and restoration plan for restoration of batching plant in consultation with the Forest Department and same shall be submitted to IRO, MoEF&CC and shall be fully implemented within five years of commissioning of the project.
11.	The reservoir sedimentation study shall be conducted periodically to determine the actual amount of water available in the reservoir.
12.	PP shall optimize the road design by restricting the width to 7 meters along straight stretches and providing additional widening only at hairpin bends or U-turns, wherever essential, so as to minimize forest land diversion and reduce tree cutting to the extent possible.
13.	Piped water supply will be provided to the project affected villages.
14.	All ephemeral and seasonal rivulets and springs in and around the project area shall be preserved in their natural condition without obstruction or diversion. Necessary measures shall be undertaken for their conservation and rejuvenation to maintain natural drainage and ecological flow.
15.	An Wildlife Conservation action Plan shall be prepared for the prominent species identified during the survey and investigation, in consultation with the State Forest and Wildlife Department, and implemented in letter and spirit with adequate budgetary provisions prior to commencement of project activities. The plan shall be submitted to the Regional office, MoEF&CC and implementation status of the same shall be submitted in six monthly compliance report.

3.1.6.2. Standard

1(c)	**River Valley/Irrigation projects**
Statutory compliance	
1.	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
2.	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
3.	The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of Schedule-I species in the study area).
4.	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention

	& Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
5.	NOC shall be obtained from National Commission of Seismic Design Parameters (NCSDS) of CWC.
6.	Necessary approval of CEA shall be obtained for those projects having the project cost more than Rs. 1,000 crores.
Air quality monitoring and preservation	
1.	Regular monitoring of various environmental parameters viz., Water Quality, Ambient Air Quality and Noise levels as per the CPCB guidelines at designated locations shall be carried out on monthly basis and a detailed database of the same shall be prepared and recorded. This shall be used as a baseline data for post construction EIA / Monitoring purposes.
2.	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed standards.
3.	Necessary control measures such as water sprinkling arrangements, etc. bet taken up to arrest fugitive dust at all the construction sites.
4.	Conjunctive use of surface water to be planned in the project to check water logging as well as to increase crops productivity. The field drains shall be connected with natural drainage system (if applicable).
5.	Remodelling of existing natural drains (link drains) and connecting them with irrigated land through constructed field drains, collector drains, etc. are to be ensured on priority basis (if applicable).
6.	Before impounding of the water, Cofferdams for both at the upstream and downstream are to be decommissioned as per EIA/EMP report so that once the project is commissioned; cofferdam should not create any adverse impact on water environment including the rock mass and muck used for the Cofferdam.
7.	As the reservoir will be acting as balancing reservoir and there would be fluctuation of water level during peaking period, efforts be made to reduce impact on aquatic life including impacts during spawning period both at the upstream and downstream of the project.
8.	Water depth sensors shall be installed at suitable locations to monitor e-flow. Hourly data to be collected and converted to discharge data. The Gauge and Discharge data in the form of Excel Sheet be submitted to the Regional Office, MoEF & CC and to the CWC on weekly basis.
9.	Mixed irrigation shall be practised and necessary awareness be given to all the farmers and trained in the use of such systems. Proper crops selection shall be carried out for making irrigation facility more effective (if applicable).
10.	On Farm Development (OFD) works like landscaping, land levelling, drainage facilities, field irrigation channels and farm roads, etc. should be taken up in phased manner prior to the start of irrigation in the entire command area. The Command Area Development Plan should be strictly implemented as proposed in the EIA/EMP report (if applicable).
Noise monitoring and prevention	
1.	All the equipment likely to generate high noise shall be appropriately enclosed or inbuilt noise enclosures be provided so as to meet the ambient noise standards as notified under the Noise Pollution (Regulation

	and Control) Rules, 2000, as amended in 2010 under the Environment Protection Act (EPA), 1986.
2.	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.
Catchment Area Treatment Plan	
1.	Catchment Area Treatment (CAT) Plan as proposed in the EIA/EMP report shall be implemented in consultation with the State Forest Department and shall be implemented in synchronization with the construction of the project.
Waste management	
1.	Muck disposal be carried out only in the approved and earmarked sites. The dumping sites shall be located sufficiently away from the HFL of the river. Efforts be made to reuse the muck for construction and other filling purposes and balanced be disposed of at the designated disposal sites. Once the muck disposal sites are inactive, proper treatment measures like both engineering and biological measures be carried out so that sites are stabilized quickly.
2.	Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead be used for various purposes as envisaged in the EIA/EMP reports. Efforts be made to avoid one time use of plastics.
Green Belt and Wildlife Management	
1.	Based on the recommendation of Cummulative Impact Assessment and Carrying capacity study of river basin or as per the ToR conditions or minimum 15% of the average flow of four consecutive leanest months, whichever value is higher, shall be released as environmental flow.
2.	Detailed information on species composition particular to fish species from previous study/literature be inventoried and proper management plan shall be prepared for insitu conservation in the streams, tributaries of river and the main river itself for which adequate budget provision be made and followed strictly.
3.	Wildlife Conservation Plan approved by the Chief Wildlife Warden shall be implemented in consultation with the local State Forest Department.
4.	To enrich the habitat of the project site, plantation shall be raised as envisaged in the EIA/EMP report. Plantation to be developed along the periphery of the reservoir in multi-layers with local indigenous species in consultation with the local State Forest Department.
5.	Compensatory afforestation programme shall be implemented as per the plan approved.
6.	Fish ladder/pass as envisaged in the EIA/EMP report shall be provided for migration of fishes. Regular monitoring of this facility be carried out to ensure it effectiveness.
Public hearing and Human health issues	
1.	Resettlement & Rehabilitation plan be implemented in consultation with the State Govt. as approved by the State Govt.
2.	Budget provisions made for the community and social development plan including community welfare schemes shall be implemented in toto.

3.	Preventive measures viz. fuming and spraying of mosquito control shall be done in and around the labour colonies, affected villages, stagnated pools, etc. Provisions be made to not to create any stagnated pools to avoid creation of breeding grounds of the vector borne diseases.
4.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
5.	Labour force to be engaged for construction works shall be examined thoroughly and adequately treated before issuing them work permit. Medical facilities shall be provided at the construction sites.
Risk Mitigation and Disaster Management	
1.	Early Warning Telemetric system shall be installed in the upper catchment area of the project for advance intimation of flood forecast.
2.	Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
3.	Emergency preparedness plan be made for any eventuality of the dam failure and shall be implemented as per the Disaster Management Plan.
4.	Stabilization of muck disposal sites using biological and engineering measures shall be taken up to ensure that muck does not roll down the slopes and shall be disposed safely and that it does not pollute the natural streams and water bodies in surrounding area. The engineering measures for the muck disposal arrangements be evolved after carrying out required slope stability analysis.
5.	Catchment area treatment plan shall be prepared and sufficient fund shall be provided for afforestation, rim plantation, pasture development, nursery development.
Corporate Environment Responsibility	
1.	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 30th September, 2020, as applicable, regarding Corporate Environment Responsibility.
2.	Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their long time livelihood generation
3.	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation/violation of the environmental / forest / wildlife norms/conditions and / or shareholders/ stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
4.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
5.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds

	earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
6.	Post EIA and SIA be prepared for the project through a third party and evaluation report be submitted to the Ministry after five years of commissioning of the project.
7.	Multi Disciplinary Committee (MDC) be constituted with experts from Ecology. Forestry, Wildlife, Sociology. Soil Conservation, Fisheries, NGO, etc. to oversee implementation of various environmental safeguards proposed in EIA/EMP report during construction of the project. The monitoring report the Committee shall be uploaded in the website of the Company.
8.	Formation of Water User Association/Co-operative be made involment of the whole community be ensured for discipline use of available water for irrigation purposes
Miscellaneous	
1.	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
2.	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
3.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
4.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
5.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
6.	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
7.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
8.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
9.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
10.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.

11.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
12.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
13.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
14.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
15.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

3.2. Agenda Item No 2:

3.2.1. Details of the proposal

SITAPUR-HANUMANA MICRO IRRIGATION PROJECT by **BHAGWAAN DUTT TIWARI** located at **SIDHI,MADHYA PRADESH**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/MP/RIV/525292/2025	J-12011/35/2025-IA.I(R)	28/09/2025	River Valley/Irrigation projects Multi purpose project with Irrigation Component (1(c))

3.2.2. Project Salient Features

Sitapur-Hanumana Micro Irrigation Project (CCA: 1,29,060 Ha) at Village Hatwa, Murtiha, Orani, Etc, Sub-District Hanumana, Sihawal, Chitrangi, Gopadbanas, etc, District Rewa, Sidhi, Singrauli, Mirzapur, Prayagraj and Sonbhadra, Madhya Pradesh and Uttar Pradesh by M/s Naigarhi Micro Irrigation Project, Division- Rewa, MP.

41.2.2 The Project Proponent and the accredited Consultant M/s. Voyants Solutions Private Limited, made a detailed presentation on the salient features of the project and informed that:

i. The Govt. of Madhya Pradesh through Water Resources Department has decided to implement the Sitapur-Hanumana Micro-Irrigation Project to improve the existing low irrigation intensity (15%) and to have overall development of the rain fed command area covered under four districts viz., Mauganj, Rewa, Sidhi and Singrauli.

ii. The project will provide micro irrigation in 129060 ha by storing the flow from Sone River during monsoon season. To harness the surplus water available in the river during monsoon

and non-monsoon season, an assured source of irrigation during Rabi season is vehemently needed in the area. The project will also supply water for drinking as well as industrial use. The barrage will be constructed at Village-Parsauna Khurd, Tehsil-Sihawal, District-Sidhi, State-Madhya Pradesh.

iii. The coordinates of barrage location are Latitude - 24°30'1.85"N and Longitude - 82°5'48.45"E.

iv. As per MoEF&CC EIA Notification 2006, the proposed project is covered under schedule 1 (c) - Category B-1. However, due to general condition i.e. project area falls within protected area of Son Gharial Wildlife Sanctuary, the project is appraised under Category A to the Ministry of Environment, Forest and Climate Change (MoEF&CC), New Delhi.

v. Sitapur-Hanumana Micro Irrigation Project, proposed across River Son, a tributary of River Ganga, in Tehsil Sihawal, District Sidhi, Madhya Pradesh, envisages construction of 1589 m long composite barrage comprising of 725 m long earthen dam of maximum height 9.50 m above foundation and 784 m long spillway comprising of 39 bays fitted with 16mx14m gates, 40m long non-overflow section on either side of spillway.

vi. It is designed for Gross and Live Storage of 268.90 and 255.746 MCM respectively at FRL 234.00 m above MSL for providing micro irrigation in Rabi season to 129060 ha CCA (Wheat 1MV; Gram N2RA ha) covered in 653 villages in four districts viz., Rewa, Mauganj, Sidhi and Singrauli, through pressurized rising mains up to distribution chambers and thereafter by gravity mains. Besides irrigation, it will cater to drinking and industrial water requirement of 5 MCM each. Approximately 108.647 MW of power is required for lifting water through seven vertical turbines.

vii. **Land requirement:** The total land requirement for the project is 3639.7039 ha of which 22.36 ha is forest land while 3617.3439 ha is non-forest land.

viii. **Demographic details in 10 km radius of project area:** Total population of the study area is 57,887 comprising of Males 29,387 (50.77%) and 28500 (49.23%) females with 5.04 person's average household size. Out of total population 6796 (11.74%) is scheduled caste and 12718 (21.97%) is schedule tribes.

ix. **Water requirement:** During Construction: 1550 KLD; During Operation, Domestic: 35 KLD, Irrigation-268.90 MCM, Industrial and Drinking- 5 MCM each.

x. **Project Cost**: The estimated project cost is INR 416793 Lakhs.

xi. **Project Benefit**: The project has been designed for Gross and Live Storage of approx. 268.90 MCM and approx. 255.746 MCM respectively for providing micro irrigation in Rabi season to 129060 ha CCA for crops of Wheat 1MV and Gram N2RA. The project will benefit farmers of 653 villages in four districts *viz*., Rewa, Mauganj, Sidhi and Singrauli. Due to assured irrigation, there shall be an increase in existing crop production by 3900000 quintals during Rabi season and the gap between demand and supply shall reduce. After implementation of project net annual benefit due to irrigation shall be approx. INR 108944 lakhs. Besides irrigation, it will cater to drinking and industrial water requirement of 5 MCM each. The project will generate direct & indirect employment opportunities during the construction and operation phases which will significantly contribute to uplifting quality of life of people of the region.

xii. **Environmental Sensitive area:** The proposed project envisages construction of Barrage on Son River which is located within protected area of Son Gharial Wildlife Sanctuary.

xiii. **MoU / any other clearance/ permission signed with State government**: The project has been approved by Govt. of Madhya Pradesh vide Letter No: F 22(A)229-15/2024/MPS/31/287 dated 04 March, 2024. The project involves inter-state issue for which the inter-state agreement has been signed between UP, MP and Bihar for sharing of water of Son River.

xiv. **Resettlement and rehabilitation:** A total of 44 revenue villages of Sihawal, Bahari, Gopad Banas and Churahat tehsil of Sidhi district are being affected due to the proposed project. As per initial assessment, approximately 4,198 families are likely to be affected due to land acquisition. The process of land acquisition and Resettlement & Rehabilitation (R&R) is currently underway, and the updated status will be incorporated in the EIA Report.

xv. **Scheduled –I species:** Gharials are present in the Son River which is Schedule-I species as per Wildlife (Protection) Act, 1972 and amendments thereof. Details will be evaluated during EIA/EMP Study and Biodiversity and Wildlife Conservation and Management Plan for the conservation of Scheduled -I faunal species shall be prepared.

xvi. **Alternative Studies:** A comprehensive study was undertaken to evaluate potential alternative locations for the Sitapur-Hanumana Barrage axis. Three locations were identified and analyzed based on their geographic and technical parameters. The three locations proposed are as follows:-

Description	**Coordinates**	**Remarks**
Near Koludih Village	Latitude - 24°29'35.11"N Longitude - 82° 0'9.64"E	U/S Barrage Axis
Near Parsauna Khurd Village	**Latitude - 24°30'1.85"N Longitude - 82°5'48.45"E.**	**Barrage Axis (Proposed Site)**
Near Kunjhun Kalan Village	Latitude - 24°32'25.77"N Longitude - 82°16'58.67"E	D/S Barrage Axis

Description	**U/S Barrage Axis**	**Barrage Axis**	**D/S Barrage Axis**
Gross Storage (MCM)	268.90	268.90	268.90
FRL (M)	238.00 M	234.00 M	231.50 M
Submergence Area (Ha)	5652.29 Ha	3389.1129 Ha	3013.57 Ha
Barrage Axis Length (M)	1730	1589	2581
Pros & Cons	Submergence affects Sone-River Bridge, proposed railway bridge, and causes a significant increase in submergence area.	Most Suitable Location	Increases barrage line length; submergence affects Jogadaha Gharial Sanctuary observation point and high-tension lines.

U/S Barrage Axis: The upstream location near Koludih Village results in substantial submergence, impacting critical structures such as the Sone-River Bridge and the ongoing railway crossing. Additionally, this location increases energy losses in the distribution network due to its greater distance from the command area. This is not recommended.

Barrage Axis: The location of project is deemed the most optimized. It strikes a balance by minimizing submergence impacts and maintaining an efficient barrage line length, making it the most suitable option. The required quantity of water for targeted CCA is found to be easily available at this site. Also, the submergence area of this site does not affect any railway line/road/transmission line crossing on the river. **This is RECOMMENDED**.

D/S Barrage Axis: The downstream location near Kunjhun Kalan Village leads to a significant increase in barrage axis length. While it marginally reduces the submergence area, it adversely affects the Jogadaha Gharial Sanctuary observation point and high-tension transmission lines. Furthermore, the lifting head for pumping increases due to lower bed levels and minimum drawdown levels along the Son River. This is not recommended.

xvii. **Details of Solid waste/ Hazardous waste generation/ Muck and its management.** About 70 TPA and 5 TPA Municipal Solid Waste and HDPE empty cement bags and plastic containers respectively will be generated during construction phase of project. This shall be managed as per applicable Wastes Management Rules. Detailed Solid Waste Management Plan shall be evolved while formulating EMP. The project will generate 1782657 cum of muck which will be re-used in back filling, pitching etc. Hence, no muck disposal site is required. Muck management plan and monitoring mechanism for muck disposal will be provided in EIA/EMP report.

xviii. Status of Litigation Pending against the proposal, if any. No Litigation is pending against the proposal.

xix. The salient features of the project are as under: -

· **Project Details:**

Name of the Proposal	Sitapur-Hanumana Micro Irrigation Project

Location (Including coordinates)	Village-Parsauna Khurd, Tehsil-Sihawal, District-Sidhi, State-Madhya Pradesh. Coordinates

	of project location: Latitude - 24° 30' 1.85" N, Longitude - 82° 5' 48.45" E
Inter-state issu	Yes, Inter-state agr

e involved	e ement has been signed between UP, MP and Bihar.
Seismic zone	Seismic Zone II: Low Damag

	e Risk Zone (Barrage Site, project components & major part of CCA) Seismic Zone III: Mo

	derate Damage Risk Zone (marginal area of CCA and other components)

· **Category Details:**

Category	A

of the project	
Provisions	Project activity is covered at S. No. 1(c)(ii), Irrigation projects, in EIA Notification 14th September 200

	6 and amendments thereof
Capacity/ Cultural command area (CCA)	CCA-1290 60 ha
Attracts the Green	Yes, Project is located

e-KYC
CAF
KYA
DSS
e-Compliance
e-Processing
e-Payments
PARIVESH
CPC GREEN
Nature Protects if She is Protected

eral Conditions (Yes/No)	within the Son Gharial Wildlife Sanctuary.
Additional information (if any)	None

· **ToR/EC Details:**

Cost of project	INR 4167793 Lakh

	s
Total area of Project	3639.7039Ha
Height of Dam from River Bed (EL)	9.5m
Length of Tunnel/Channel	Not Applicable
Details of Submergence area	3389.1129halandwillbesubmerg

	ed
Types of Waste and quantity of generation during construction/ Operation	Municipal Solid Waste During construction: 70.00 TPA HDPE empty cement bags sa

	nd plastic containers During construction: 5.00 TPA
E-Flows for the Project	E-Flow will be maintained as per nor

	ms
Is Projects earlier studies in Cumulative Impact Assessment & Carrying Capacity Studies (CIA&CC) for River in which project located? If yes, then a) E-flow with TOR / Recommendation by EAC as per CIA&CC study of River	No Not Applicable Not Applicable

Basin. b) If not the E-Flows maintain criteria for sustaining river ecosystem	
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	16000

· **Muck Management Details:**

No. of proposed disp	The project will

osal area/(type of land-Forest/Pvt. land)	generate 1782657 cum of muck which will be re-used in back filling, pitching etc. H

e-KYC
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e-Processing
e-Payments
e-Compliance
KYA
PARIVESH
CPC GREEN

	ence, no muck disposal site is required. Storage site will be provided.
Muck Management P	Details will be pro

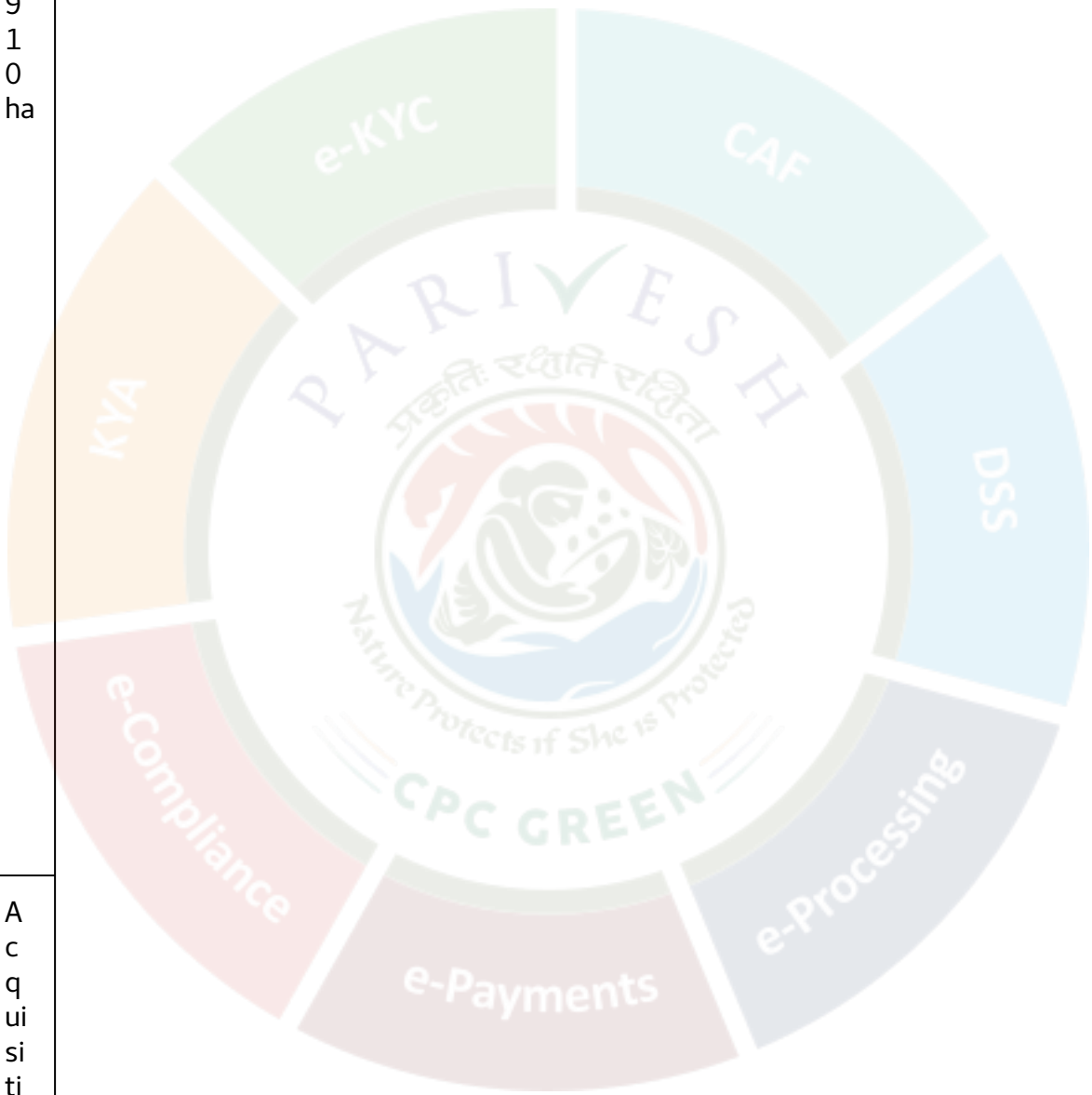
lan	vided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Details will be provided in EIA/EMP report

· **Land Area Breakup:**

Private land	1639.7039 ha

Government land	1977.64 ha
Forest Land	22.36 ha
Total Land	3639.70399
Submergence area/ Reserv	3389.11129 ha

oi ar ea	
La nd re qui re d fo r pr oj ec t co m po ne nt s	2 5 0. 5 9 1 0 ha
Ad di ti o n al in fo r m at io n (i	Ac qu isi ti o n of Pr iv at e La n d



f a n y)	is u n d er pr o ce ss as p er L A R R A c t, 2 0 1 3 an d a p pli ca ti o n fo r f or es t l an d di ve rs io n ha s b ee n su b m

	itted and accepted by PSCL.

· **Presence of Environmentally Sensitive Areas in the Study Area:**

Forest Land/ Protected Area/ Environmental Sensitivi	**Yes/ No**	**Details of Certificate/ letter/ Remarks**

e-KYC CAF DSS e-Processing e-Payments e-Compliance PARIVESH CPC GREEN Nature Protects if She is Protected

tyZone		
ReserveForest/ProtectedForestLand	Yes	The construction of barrage is located on Son River which is within the protecte
NationalPark	No	
WildlifeSanctuary	Yes	

		dareaofSonGharialWildlifeSanctuary.Besidethis,22.36haofforestlandisbeingaffecte

		d due to submergence and project components such as pipelines, powerhouses, a

		proachesetc.

· **Court Case Details: Nil**

· **Previous EC Compliance and Necessary Approvals:**

Particulars	**Letter no. and dd date**
Certified EC compliance report (if applicable)	Not Applicable
Status of	Forest

e-KYC CAF DSS e-Processing e-Payments e-Compliance KYA PARIVESH CPC GREEN Nature Protects if She is Protected

Stage-I FC	Diversion proposal has been accepted by PSC-I and tree enumeration is under progress.
Addi	Non

tional detail (If any)	e
Is FRA (2006) done for FC-I	Under process

· **Miscellaneous:**

Particulars	**Details**
Details of consultant	Voyants Solutions Private Limited, Guru

	gramQCI-NABETCertificateNo.: NABET/EIA/25-28/RA0416, Valid upto: 13th March, 2028
Project Benefits	The project has been designed for Gros

	s and Live Storage of approx. 268.90 MCM and approx. 255.746 MCM respectively for providing micro irrigation in Rabi seas

	onto 1290 60 ha CCA for crops of Wheat 1 MV and Gram N2 RA ha. The project will benefit farmers of 653 villages in four districts *viz.*, Rew

	a, Maugan j, Sidhi and Singraul i. Due to assured irriga tion, there shall be an increase in existing crop produc tion by 3900000 quintals durin

	g Rabi seas on and the gap betw een dem and and supply shall red uce. After imple ment ation of proj ect net annual bene fit due to irri ga tio

	n shall be approx. lNR 1089 44 lakhs. Besides irrigation, it will cater to drinking and industrial water requirement of 5 MCM each. The project

	will generate direct & indirect employment opportunities during the construction and operation phase which will significantly contribute to upl

	ift th e q ual ity of life of pe op le of th e r egi on.
St at us of ot he r s tat ut or y c lea ra nc es	Th e ma nd at or y s tat ut or y c lea ra nc e li ke Fo res t c lea ra nc e f or div ers ion of for est lan d, rec o m

	mendation from NBWL are yet to be obtained. Application for both clearances has been submitted.
R&R details	A total of 44 revenue villages of Sihawal,

	Bahari, Gopad Banas and Churah at tehsil of Sidhi district are being affected due to the proposed project. As per initial assessment, approxi

	mately 4,198 families are likely to be affected due to land acquisition. The process of land acquisition and Resettlement & Rehabilitation (

	R&R) is currently under way, and the updated status will be incorporated in the EIA Report.
Additional detail (If any)	None

3.2.3. Deliberations by the committee in previous meetings

N/A

3.2.4. Deliberations by the EAC in current meetings

The EAC during deliberations noted the following:

The EAC deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA study for Sitapur-Hanumana Micro Irrigation Project (CCA: 1,29,060 Ha) at Village Hatwa, Murtiha, Orani, Etc, Sub-District Hanumana, Sihawal, Chitrangi, Gopadbanas, etc, District Rewa, Sidhi, Singrauli, Mirzapur, Prayagraj and Sonbhadra, Madhya Pradesh and Uttar Pradesh by M/s Naigarhi Micro Irrigation Project, Division- Rewa, MP.

The EAC noted that the present project proposal comes under "B1" category; as per the provisions of the EIA Notification, 2006, as amended as Culturable Command Area (CCA: 129060 ha). However, due to general condition i.e. project area falls within protected area of Son Gharial Wildlife Sanctuary, hence, it requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

As per ESZ notification S.O. 4030 (E) dated 13.12.2016 for the proposed activity is categorised as *'Prohibited (except as otherwise provided) as per applicable laws*'. In this context, it was inquired by the EAC whether the proposed activity is a permissible activity in the Son Gariyal Sanctuary. The PP informed that the project has been approved by Govt. of Madhya Pradesh vide Letter No: F 22(A)229-15/2024/MPS/31/287 dated 04 March, 2024. The project involves inter-state issue for which the inter-state agreement has been signed between UP, MP and Bihar for sharing of water of Son River. It was also informed that PCCF(WL)&CWLW, M.P. vide their letter no. WL/STO-1/28.28/4525 dated 12.06.2025 granted permission under Section 28 of Wild Life (Protection) Act, 1972 for survey work for making 16 bore holes of 100 mm diameter at 16 locations for the construction of barrage near village Parsauna Khurd Amiliya for Sitapur-Hanumana Micro Pressure Irrigation Project on Son river under Son Gharial Sanctuary.

The EAC observed that the proposed Sitapur-Hanumana Micro-Irrigation Project is proposed by the Water Resources Department, Govt. of Madhya Pradesh is designed for Gross and Live Storage of 268.90 and 255.746 MCM respectively at FRL 234.00 m above MSL for providing micro irrigation in Rabi season to 129060 ha CCA (Wheat 1MV; Gram N2RA ha) covered in 653 villages in four districts viz., Rewa, Mauganj, Sidhi and Singrauli, through pressurized rising mains up to distribution chambers and thereafter by gravity mains. Besides irrigation, it will cater to drinking and industrial water requirement of 5 MCM each. Approximately 108.647 MW of power is required for lifting water through seven vertical turbines.

The Committee observed that in the total land required for the total land requirement for the project is 3639.7039 ha of which 22.36 ha is forest land while 3617.3439 ha is non-forest land. Diversion of forest land for non-forest purpose will be involved for construction of proposed project. However, it was further observed that forest Diversion proposal has been accepted by PSC-I and tree enumeration is under progress. The proposed project is located on Son River within the protected area of Son Gharial Wildlife Sanctuary. Hence, recommendation from NBWL under Wildlife (Protection) Act, 1972 shall be obtained.

The EAC based on the information submitted and as presented during the meeting, recommended the proposal for grant of Standard ToR issued by the Ministry for conducting EIA/EMP study with Public consultation for Sitapur-Hanumana Micro Irrigation Project (CCA: 1,29,060 Ha) at Village Hatwa, Murtiha, Orani, Etc, Sub-District Hanumana, Sihawal, Chitrangi, Gopadbanas, etc, District Rewa, Sidhi, Singrauli, Mirzapur, Prayagraj and Sonbhadra, Madhya Pradesh and Uttar Pradesh by M/s Naigarhi Micro Irrigation Project, Division- Rewa, MP, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR.

3.2.5. Recommendation of EAC

Recommended

3.2.6. Details of Terms of Reference

3.2.6.1. Specific

Miscellaneous:	
1.	Pre-DPR Chapters viz. Hydrology, Layout Map Studies duly approved by CWC shall be submitted.
2.	PP shall obtain clearance from the inter-State aspect from the designated authorities as per the procedure.
3.	Undertaking need to submitted on affidavit that regarding no activities has been yet started on the project site and water allocated to this scheme shall not be diverted to other purpose.
4.	Both capital and recurring expenditure under EMP shall be submitted.
5.	The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyse the samples.
6.	Arial view video of project site shall be recorded and to be submitted.
7.	As per Ministry's OM dated 1st August, 2013, PP shall submit application to obtain prior approval of Central Government under the Forest Conservation Act, 1980 for diversion of forest land required for such projects will be submitted as soon as the actual extent of forest land required for the project is known to the project proponent, and in any case, within 6 months of issuance of ToR. However, no proposal will be put up before EAC without submission of application for forest clearance, wherever applicable.
Muck Management:	
1.	Details of quantity of muck generation component wise and disposal site along with transportation plan and its monitoring to be provided.
2.	Details of Muck Management plan prepared along with estimated cost incorporated in EIA/EMP report.
3.	Techno-economic viability of the project must be recommended from CWC.
Socio-economic Study:	
1.	Public Health Delivery Plan including the provisions of drinking water supply for local population shall be in the EIA/EMP Report. Status of the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the need of the labour force and local population.
2.	Declaration by the Project Proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with any State in the project.
3.	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.
4.	Statement on the commitments (activity-wise) made during public hearing to facilitate the discussion on the CER in compliance of the Ministry's OM F. No. 22- 65/2017- IA.III dated 30th September, 2020 shall be submitted.
5.	Tentative no. of project affected families shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared.
6.	Details of settlement in 10 km area shall be submitted
Environmental Management and Biodiversity Conservation:	
1.	The habitat fragmentation effects shall be studied in consultation with WII/expert government research institute in terms of edge effects, increased competition, lower biodiversity, human-wildlife conflict and reduced access to resources emphasising on nesting behaviour of Ghariyals, Indian skimmers and Indian Soft Shell Turtle.
2.	A detailed wildlife conservation plan for Schedule –I species along with mitigation measures for minimizing the human–animal conflict, duly approved by the Chief Wildlife Warden, be submitted. NBWL recommendations shall be submitted along with EIA/EMP report.
3.	Prepare Environmental Cost Benefit Analysis in terms of ecological damage due to diversion of Forest land/ loss of biodiversity and its impacts on ecosystem, water availability, water uses for irrigation in study area (10 km from periphery of Project components).
4.	A study shall be carried out on impact of project activity on the aquatic and terrestrial ecosystem, within project area classifying the impact zones (highly impact/low impact zone) based on seasonal variations and covering the aspects related to impacts on aquatic ecosystem/ primary productivity due to quantity of water to be lifted and thermal stratification. Accordingly, Environment Management plan shall be prepared.
5.	Sampling locations be located to cover villages situated near the reservoir and around boundary of forest area for collection of baseline data and data to be incorporated in EIA/EMP report.
6.	Source of construction material and its distance from the project site along with detailed transportation plan for construction material be elaborated in the EIA EMP report. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report.
7.	In case any wildlife corridor is located within 10 km radius of the project site a detailed study shall be conducted to assess the impact of project on safe movement of wild animals.
8.	Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.
9.	Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for forest land involved in the project shall be submitted within stipulated time.
1	Muck disposal site and other components such as Township, site office, Stacking area and

0.	batching plant shall be located outside the forest area.
11.	PP shall prepare detailed plan for Plantation of saplings under the tree plantation campaign "Ek Ped Ma Ke Naam".

3.2.6.2. Standard

1(c)	**River Valley/Irrigation projects**
Scope of EIA Study	
1.	The EIA Report should identify the relevant environmental concerns and focus on potential impacts that may change due to the construction of proposed project. Based on the baseline data collected for three (3) seasons (Pre-monsoon, Monsoon and Winter seasons), the status of the existing environment in the area and capacity to bear the impact on this should be analysed. Based on this analysis, the mitigation measures for minimizing the impact shall be suggested in the EIA/EMP study.
Details of the Project and Site	
1.	General introduction about the proposed project.
2.	Details of Project and site giving L-Sections of all U/S and D/S Projects with all relevant maps and figures. Connect such information as to establish the total length of interference of Natural River and the committed unrestricted release from the site of Dam/Barrage into the main river.
3.	A map of boundary of the project site giving details of protected areas in the vicinity of 25 km of project location.
4.	Location details on a map of the project area with contours indicating main project features. The project layout shall be superimposed on a contour map of ground elevation showing main project features (viz. location of dam, Head works, main canal, branch canals, quarrying etc.) shall be depicted in a scaled map.
5.	Layout details and map of the project along with contours with project components clearly marked with proper scale maps of at least 1:50,000 scale and printed at least on A3 scale for clarity.
6.	Existence of National Park, Sanctuary, Biosphere Reserve etc. in the study area, if any, should be detailed and presented on a map with distinct distances from the project components.
7.	Drainage pattern and map of the river catchment up to the proposed project site.
8.	Delineation of critically degraded areas in the directly draining catchment on the basis of Silt Yield Index as per the methodology of Soil and Land use Survey of India.
9.	Soil characteristics and map of the project area.
10.	Geological and Seismo-tectonic details and maps of the area surrounding the proposed project site showing location of dam site and canal sites.
11.	Remote Sensing studies, interpretation of satellite imagery, topographic sheets along with ground verification shall be used to develop the land use/land cover pattern of the study using overlaying mapping techniques viz. Geographic Information System (GIS), False Color Composite (FCC) generated

	from satellite data of project area.
12.	Land details including forests, private and other land.
13.	Demarcation of snow fed and rain fed areas for a realistic estimate of the water availability
Description of Environment and Baseline Data	
1.	To know the present status of environment in the area, baseline data with respect to environmental components air, water, noise, soil, land and biology & biodiversity (flora & fauna), wildlife, socioeconomic status etc. should be collected within 10 km radius of the main components of the project/site i.e. dam site and power house site. The air quality and noise are to be monitored at such locations which are environmentally & ecologically more sensitive in the study area. The baseline studies should be collected for 1 season (Preferably Monsoon season). Flora-Fauna in the catchment and command area should be documented. The study area should comprise of the following:
2.	(i) Catchment area up to the dam/barrage site.
3.	(ii) Submergence Area.
4.	(iii) Project area or the direct impact area should comprise of area within 10 km radius of the main project components like dam, canals etc.
5.	(iv) Downstream upto 10 km from the tip of the reservoir.
Details of the Methology	
1.	The methodology followed for collection of base line data along with details of number of samples and their locations in the map should be included. Study area should be demarcated properly on the appropriate scale map. Sampling sites should be depicted on map for each parameter with proper legends. For Forest Classification, Champion and Seth (1968) methodology should be followed.
Methodology for Collection of Biodiversity Data	
1.	The number of sampling locations should be adequate to get a reasonable idea of the diversity and other attributes of flora and fauna. The guiding principles should be the size of the study area (larger area should have larger number of sampling locations) and inherent diversity at the location, as known from secondary sources (e.g. eastern Himalayan and low altitude sites should have a larger number of sampling locations owing to higher diversity).
2.	The entire area should be divided in grids of 5kmX5km preferably on a GIS domain. There after 25% of the grids should be randomly selected for sampling of which half should be in the directly affected area (grids including project components such as reservoir, dam, powerhouse, tunnel, canal etc.) and the remaining in the rest of the area (areas of influence in 10 km radius form project components). At such chosen location, the size and number of sampling units (e.g. quadrates in case of flora/transects in case of fauna) must be decided by species area curves and the details of the same (graphs and cumulative number of species in a tabulated form) should be provided in the EIA report. Some of the grids on the edges may not be completely overlapping with the study area boundaries. However, these should be counted and considered for selecting 25% of the grids. The number of grids to be surveyed may come out as a decimal number (i.e. it has an integral and a fractional part) which should be rounded to the next whole number.

3.	The conventional sampling is likely to miss the presence of rare, endangered and threatened (r.e.t.) species since they often occur in low densities and in case of faunal species are usually secretive in behaviour. Reaching the conclusion about the absence of such species in the study area based on such methodology is misleading. It is very important to document the status of such species owing to their high conservation value. Hence likely presence of such species should be ascertained from secondary sources by a proper literature survey for the said area including referring to field guides which are now available for many taxonomic groups in India. Even literature from studies/surveys in the larger landscapes which include the study area for the concerned project must be referred to, since most species from adjoining catchments is likely to be present in the catchments in question. In fact such literature form the entire state can be referred to. Once a listing of possible r.e.t. species form the said area is developed, species specific methodologies should be adopted to ascertain their presence in the study area which would be far more conclusive as compared to the conventional sampling. If the need be, modern methods like camera trapping can be resorted to, particularly for areas in the eastern Himalayas and for secretive/nocturnal species. A detailed listing of the literature referred to, for developing lists of r.e.t. species should be provided in the EIA reports.The conventional sampling is likely to miss the presence of rare, endangered and threatened (r.e.t.) species since they often occur in low densities and in case of faunal species are usually secretive in behaviour. Reaching the conclusion about the absence of such species in the study area based on such methodology is misleading. It is very important to document the status of such species owing to their high conservation value. Hence likely presence of such species should be ascertained from secondary sources by a proper literature survey for the said area including referring to field guides which are now available for many taxonomic groups in India. Even literature from studies/surveys in the larger landscapes which include the study area for the concerned project must be referred to, since most species from adjoining catchments is likely to be present in the catchments in question. In fact such literature form the entire state can be referred to. Once a listing of possible r.e.t. species form the said area is developed, species specific methodologies should be adopted to ascertain their presence in the study area which would be far more conclusive as compared to the conventional sampling. If the need be, modern methods like camera trapping can be resorted to, particularly for areas in the eastern Himalayas and for secretive/nocturnal species. A detailed listing of the literature referred to, for developing lists of r.e.t. species should be provided in the EIA reports.
4.	The R.E.T. species referred to in this point should include species listed in Schedule I and II of Wildlife (Protection) Act, 1972 and those listed in the red data books (BSI, ZSI and IUCN).
Components of the EIA Study: Various aspects to be studied and provided in the EIA/EMP report are as f ollows:	
1.	null
2.	null
3.	null
4.	Physical geography, Topography, Regional Geological aspects and structure of the Catchment.
5.	Tectonics, seismicity and history of past earthquakes in the area. A site specific study of the earthquake parameters will be done. The results of the site specific earthquake design shall be sent for approval of the NCSDP (National Committee of Seismic Design Parameters, Central water Commission, New Delhi for large dams.
6.	Landslide zone or area prone to landslide existing in the study area should be examined.
7.	Presence of important economic mineral deposit, if any.
8.	Justification for location & execution of the project in relation to structural components (dam /barrage

	height).
9.	Impact of project on geological environment.
10.	null
11.	Meteorology (viz. Temperature, Relative humidity, wind speed/direction etc.) to be collected from nearest IMD station.
12.	Ambient Air Quality with parameters viz. Suspended Particulate Matter (SPM), Respirable Suspended Particulate Matter (RSPM) i.e. suspended particulate materials < 10 microns, Sulphur dioxide (SO2) and Oxides of Nitrogen (NOX) in the study area at 5-6 Locations.
13.	Existing Noise Levels and traffic density in the study area at 5-6 Locations.
14.	null
15.	Soil classification, physical parameters (viz., texture, Porosity, Bulk Density and water holding capacity) and chemical parameters (viz. pH, electrical conductivity, magnesium, calcium, total alkalinity, chlorides, sodium, potassium, organic carbon, available potassium, available phosphorus, SAR, nitrogen and salinity, etc.) at @ one sample/ha of command area.
16.	null
17.	Generation of thematic maps viz, slope map, drainage map, soil map, land use and land cover map, etc. Based on these, thematic maps, an erosion intensity map should be prepared.
18.	New configuration map to be given in the EIA Report
19.	null
20.	History of the ground water table fluctuation in the study area.
21.	Water Quality for both surface water and ground water for [i] Physical parameters (pH, Temperature, Electrical Conductivity, TSS); [ii] Chemical parameters (Alkalinity, Hardness, BOD, COD, NO3, PO4, Cl, So4, Na, K, Ca, Mg, Silica, Oil & grease, phenolic compounds, residual sodium carbonate);[iii] Bacteriological parameter (MPN, Total coliform); and [iv] Heavy Metals (Pb, As, Hg, Cd, Cr6,Total Cr, Cu, Zn, Fe) at minimum10 Locations, however, the sampling numbers should be increased depending on the command area.
22.	Delineation of sub and micro watersheds, their locations and extent based on the Soil and Land Use Survey of India (SLUSOI), Department of Agriculture, Government of India. Erosion levels in each micro-watershed and prioritization of micro-watershed through Silt Yield Index (SYI) method of SLUSOI.
23.	Hydro-Meteorology of the project viz. precipitation (snowfall, rainfall), temperature, relative humidity, etc. Hydro-meteorological studies in the catchment area should be established along-with real time telemetry and data acquisition system for inflows monitoring.

24.	Run off, discharge, water availability for the project, sedimentation rate, etc.
25.	Basin characteristics
26.	Catastrophic events like cloud bursts and flash floods, if any, should be documented.
27.	For estimation of Sedimentation Rate, direct sampling of river flow is to be done during the EIA study. The study should be conducted for minimum one year. Actual silt flow rate to be expressed in ha-m km2 year-1.
28.	Set up a G&D monitoring station and a few rain gauge stations in the catchment area for collecting data during the investigation.
29.	Flow series, 10 daily with 90%, 75% and 50% dependable years discharges.
30.	Environmental flow release should be 20% of the average of the 4 lean months of 90% dependable year during the lean season and 30% of Monsoon flow during monsoon season. For remaining months, the flow shall be decided by the Committee based on the hydrology and available discharge.
31.	A site specific study on minimum environment flow should be carried
32.	null
33.	null
34.	Characterization of forest types (as per Champion and Seth method) in the study area and extent of each forest type as per the Forest Working Plan.
35.	General vegetation profile and floral diversity covering all groups of flora including Bryophytes, Pteridophytes, Lichens and Orchids. A species wise list may be provided.
36.	Assessment of plant species with respect to dominance, density, frequency, abundance, diversity index, similarity index, importance value index [IVI], Shannon Weiner Index etc. of the species to be provided. Methodology used for calculating various diversity indices along with details of locations of quadrats, size of quadrats etc. to be reported within the study area in different ecosystems.
37.	Existence of National Park, Sanctuary, Biosphere Reserve etc in the study area, if any, should be detailed.
38.	Economically important species like medicinal plants, timber, fuel wood etc.
39.	Details of endemic species found in the project area.
4	Flora under RET categories should be documented using International Union for the Conservation of

0.	Nature and Natural Resources (IUCN) criteria and Botanical Survey of India's Red Data list along with economic significance. Species diversity curve for RET species should be given.
41.	Fauna study and inventorisation should be carried out for all groups of animals including reptiles and nocturnal animals in the study area. Their present status along with Schedule of the species.
42.	Information (authenticated) on Avi-fauna and wild life in the study area.
43.	Status of avifauna their resident/migratory/ passage migrants etc.
44.	Documentation of butterflies, if any, found in the area.
45.	Details of endemic species found in the project area.
46.	RET species- voucher specimens should be collected along with GPS readings to facilitate rehabilitation. RET faunal species to be classified as per IUCN Red Data list and as per different schedule of Indian Wildlife (Protection) Act, 1972.
47.	Existence of barriers and corridors, if any, for wild animals.
48.	Compensatory afforestation to compensate the green belt area that will be removed, if any, as part of the proposed project development and loss of biodiversity.
49.	For categorization of sub-catchments into various erosion classes and for the consequent CAT plan, the entire catchment (Indian Portion) is to be considered and not only the directly the draining catc
50.	Documentation of aquatic fauna like macro-invertebrates, zooplankton, phytoplanktons, benthos etc.
51.	Fish and fisheries, their migration and breeding grounds.
52.	Fish diversity, composition and maximum length & weight of the measured populations to be studied for estimation of environmental flow.
53.	Conservation status of aquatic fauna.
54.	Cropping pattern and Horticultural practices in the study area.
55.	Collection of primary data on agricultural activity, crop and their productivity and irrigation facilities component.
56.	Component of pressurized/drip irrigation and micro irrigation.
5	Details of Conjunctive use of water for irrigation

7.	
58.	Collection of Baseline data on human settlements, health status of the community and existing infrastructure facilities for social welfare including sources of livelihood, job opportunities and safety and security of workers and surrounding population.
59.	Collection of information with respect to social awareness about the developmental activity in the area and social welfare measures existing and proposed by project proponent.
60.	Collection of information on sensitive habitat of historical, cultural and religious and ecological importance.
61.	The Socio-economic survey/profile within 10 Km of the study area for Demographic profile; Economic Structure; Development Profile; Agricultural Practices; Infrastructure, education facilities; health and sanitation facilities; available communication network etc.
62.	Documentation of Demographic, Ethnographic, Economic structure and development profile of the area
63.	Information on Agricultural practices, Cultural and aesthetic sites, Infrastructure facilities etc
64.	Information on the dependence of the local people on minor forest produce and their cattle grazing rights in the forest land.
65.	List of all the Project Affected Families with their names, education, land holdings, other properties, occupation, source of income, land and other properties to be acquired, etc.
66.	In addition to Socio-economic aspects of the study area, a separate chapter on socio-cultural aspects based upon study on Ethnography of the area should be provided.
Impact Prediction and Mitigation Measures	
1.	The adverse impact due to the proposed project should be assessed and effective mitigation steps to abate these impacts should be described.
2.	Changes in ambient and ground level concentrations due to total emissions from point, line and area sources
3.	Effect on soils, material, vegetation and human health
4.	Impact of emissions from DG sets used for power during the construction, if any, on air environment.
5.	Pollution due to fuel combustions in equipments & vehicles
6.	Fugitive emissions from various sources.
7.	Impact on micro climate
8.	Changes in surface & ground water quality. Steps to develop pisci-culture and recreational facilities.
9.	Changes in hydraulic regime and down stream flow.

10.	Water pollution due to disposal of sewage.
11.	Water pollution from labour colony/camps and washing equipment.
12.	Adverse impact on land stability, catchment of soil erosion, reservoir sedimentation and spring flow (if any) [a] due to considerable road construction/widening activity [b] interference of reservoir with the inflowing streams [c] blasting for excavation of canals and some other structures
13.	Changes in land use/land cover and drainage pattern.
14.	Immigration of labour population.
15.	Quarrying operation and muck disposal.
16.	Changes in land quality including effects of waste disposal
17.	River bank and their stability
18.	Impact due to submergence
19.	Impact on forests, flora, fauna including wildlife, migratory avi-fauna, rare and endangered species, medicinal plants etc.
20.	Pressure on existing natural resources
21.	Deforestation and disturbance to wildlife, habitat fragmentation and wild animal's migratory corridors
22.	Compensatory afforestation-Identification of suitable native tree species for compensatory afforestation & green belt.
23.	Impact on fish migration and habitat degradation due to decreased flow of water
24.	Impact on breeding and nesting grounds of animal
25.	Impact on local community including demographic profile.
26.	Impact on socio-economic status.
2	Impact on economic status.

7.	
28.	Impact on human health due to water / vector borne disease.
29.	Impact on increases traffic.
30.	Impact on Holy Places and Tourism.
31.	Impacts of blasting activity during project construction which generally destabilize the land mass and lead to landslides, damage to properties and drying up of natural springs and cause noise pollution, will be studied. Proper record shall be maintained of the base line information in the post project period.
32.	Positive as well as negative impacts likely to be accrued due to the project are to be listed.
Environment Impact Analysis	
1.	Environmental Impact Analysis due to the project on the above mentioned components should be carried out for construction and operation phases using qualitative or quantitative methods.
Environmental Management Plan	
1.	Environmental Management Plan aimed at minimizing the negative impacts of the project should be given in detail. The mitigation measures are to be presented for all the likely adverse impacts on the environment. The following suggestive mitigating plans should be included
2.	Biodiversity and Wild Life Conservation & Management Plan for conservation and preservation of endemic, rare and endangered species of flora and fauna to be prepared in consultation with State Forest Department.
3.	Compensatory Afforestation in lieu of the forest land required for the project needs to be proposed.Choice of plants should be made in consultation with State Forest Department including native and RET species, if any.
4.	Fisheries Conservation & Management Plan-Fish fauna inhabiting the affected stretch of river, a specific fisheries management plan should be prepared for river and reservoir.
5.	Plan for Green Belt Development along the periphery of reservoir, colonies, approach road, canals etc. to be prepared in consultation with the State Forest Department. Local plant species suitable for greenbelt development should be selected.
6.	Environmental Monitoring Programme with physical & financial details covering all the aspects of EMP. A summary of cost estimate for all the plans, cost for implementing all Environmental Management Plans including the cost for implementing environmental monitoring programme should be given. Provision for an Environmental Management Cell should be made.
7.	Catchment Area Treatment (CAT) Plan should be prepared micro-watershed wise. Identification of area for treatment based upon Remote Sensing & GIS methodology and Silt Yield Index (SYI) method of SLUSOI coupled with ground survey. Areas/watersheds falling under 'very severe' and `severe' erosion categories are required to be treated. Both biological and engineering measures should be proposed in consultation with State Forest Department. Year-wise schedule of work and monetary allocation should

	be provided. CAT plan is to be completed prior to reservoir impoundment. Mitigations measures to check shifting cultivation in the catchment area with provision for alternative and better agricultural practices should be include.
8.	Study of Design Earthquake Parameters: A site specific study of earthquake parameters should be done. The results of the site specific earth quake design parameters should be approval by National Committee of Seismic Design Parameters, Central Water Commission (NCSDP), New Delhi.
9.	Dam Break Analysis and Disaster Management Plan: The outputs of Dam Break Model should be illustrated with appropriate graphs and maps clearly bringing out the impact of Dam break scenario. Provision for early warning systems should be provided.
10.	Reservoir Rim Treatment Plan for stabilization of land slide/land slip zones if any, around the reservoir periphery to be prepared. Suitable engineering and biological measures for treatment of the identified slip zones to be provided with physical and financial schedule.
11.	Muck Disposal Plan- suitable sites for dumping of excavated material should be identified in consultation with the State Pollution Control Board and Forest Department. All Muck disposal sites should be minimum 30 m away from the HFL of river. Plan for rehabilitation of muck disposal sites should also be given. The L- section/ cross section of muck disposal sites and approach roads to be given. Financial out lay for this may be given separately. Deatailed muck transportation plan delinating the path ways, number of trucks, quantity of muck to be transportated along with monitoring mechanism using latest technology, shall be prepared.
12.	Plan for Restoration of quarry sites and landscaping of colony areas, working areas, roads, etc.
13.	Command Area Development (CAD) Plan giving details of implementation schedule with a sample CAD plan.
14.	In the EMP, also include a sample CAD plan for a distributary outlet command. Such a plan is to show the alignment of irrigation and drainage channels. The components of the OFD works to be undertaken may be clearly mentioned along with a time schedule for their completion vis-à-vis the progress of irrigation development.
15.	Mitigating measures for impacts due to Blasting on the structures in the vicinity.
16.	Resettlement and Rehabilitation (R&R) Plan need to be prepared with due consultation with Project Affected Families (PAFs). The provision of the d R&R plan should be according to the National Resettlement and Rehabilitation Policy (NRRP-2007) as well as State Resettlement and Rehabilitation Policy. Detailed budgetary estimates are to be provided. Resettlements sites should be identified.
17.	Public Health Delivery Plan including the provisions for drinking water facility for the local community.
18.	Local Area Development Plan to be formulated in consultation with the Revenue Officials and Village Panchayats. Local skill development schemes should be given. Details of various activities to be undertaken along with its financial out lay should be provided.
19.	Labour Management Plan for their Health and Safety.
2	Sanitation and Solid Waste Management Plan for domestic waste from colonies and labour camps etc.

0.	
21.	Plan for Land Restoration and Landscaping of project sites.
22.	Energy Conservation Measures.
23.	Environmental safeguards during construction activities including Road Construction.
24.	Ground Water Management Plan.
25.	Water and Air Quality & Noise Management Plans to be implemented during construction and post-construction periods.

3.3. Agenda Item No 3:

3.3.1. Details of the proposal

Bargi Pumped Storage Hydro Project (1000 MW) at District: Mandla, Madhya Pradesh by M/s. Serentica Renewables India 21 Pvt. Ltd. by **serentica renewables india 21 private limited** located at **MANDLA,MADHYA PRADESH**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/MP/RIV/553405/2025	J-12011/36/2025-IA.I(R)	29/09/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.3.2. Project Salient Features

null

3.3.3. Deliberations by the committee in previous meetings

N/A

3.3.4. Deliberations by the EAC in current meetings

The proposal is for grant of Environmental Clearance (EC) to the project for Bargi Open Pumped Storage Hydro Project (1000 MW) at Village Pindrai Mal. (Sahajpuri), Salaiya Mal.(Barangada), Jamthar, Khapa, Newari And Pondi, Sub- District Narayanganj, District Mandla, Madhya Pradesh by M/s Serentica Renewables India 21 Private Limited. **41.3.2** While considering the proposal, the EAC noted that the project proponent joined the

meeting with considerable delay, and due to poor internet connectivity, the members were unable to clearly hear the consultant's presentation. As a result, key technical details and clarifications could not be effectively communicated. Therefore, the Committee decided to defer the proposal to the next meeting to ensure a fair and informed appraisal. The proponent and consultant were advised to ensure stable connectivity in the subsequent EAC meeting.

3.3.5. Recommendation of EAC

Deferred for ADS

4. Any Other Item(s)

N/A

5. List of Attendees

Sr. No.	Name	Designation	Email ID	Remarks
1	Prof G J Chakrapani	Chairman, EAC	cha**********@gmail.com	
2	Dr Mukesh Sharma	Member (EAC)	muk***@iitk.ac.in	Absent
3	Dr Uday Kumar R Y	Member (EAC)	uda********@yahoo.com	
4	Dr J A Johnson	Member (EAC)	jaj@wii.gov.in	Absent
5	Dr J V Tyagi	Member (EAC)	jvt******@gmail.com	
6	Shri Kartik Sapre	Member (EAC)	kar********@gmail.com	
7	Shri Ajay Kumar Lal	Member (EAC)	akl****@gmail.com	
8	Shri Rakesh Goyal	Member	goy*********@nic.in	
9	Shri Balram Kumar	Member	emo***@nic.in	
10	Dr. A. K. Sahoo	Member	ami***@gmail.com	Absent
11	Yogendra Pal Singh	Scientist - F	yog*******@nic.in	

MINUTES OF THE 41ST MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 13TH OCTOBER 2025 THROUGH VIDEO CONFERENCE

The 41st meeting of the EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on through virtual mode, under the Chairmanship of Prof. G. J. Chakrapani. The list of Members present in the meeting is at **Annexure II**.

Confirmation of the Minutes of the 40th EAC meeting:

The Minutes of the Meeting held on 40th EAC meeting on 12th September, 2025 were confirmed.

Agenda Item No. 41.1

Saidongar 1 - Karjat Open Loop Pumped Storage Project (3000 MW) in an area of 377 Ha at Village Potal, Saidongar, Ambot, etc, Sub District Karjat, District Raigarh, Maharashtra by M/s Torrent Psh 3 Private Limited- Environmental Clearance - reg.

[Proposal No. IA/MH/RIV/552857/2025; F. No. J-12011/04/2025-IA.I (R)]

41.1 The proposal is for grant of Environmental Clearance (EC) to the project for Saidongar 1 - Karjat Open Loop Pumped Storage Project (3000 MW) in an area of 377 Ha at Village Potal, Saidongar, Ambot, etc, Sub District Karjat, District Raigarh, Maharashtra by M/s Torrent Psh 3 Private Limited.

41.1.2: The Project Proponent and the accredited Consultant M/s. Aarvee Engineering Consultants Limited, Hyderabad made a detailed presentation on the salient features of the project and informed that:

i. Saidongar 1 - Karjat Pumped Storage comprising of 3000MW is proposed to be located at village Pati T. Potal, Saidongar, Ambot, Dhak, Bhaliwadi, Sub district Karjat, Raigad District, Maharashtra. It will comprise of two reservoirs. Upper & lower reservoirs with a gross storage capacity of 15.87 MCM & 28.96 MCM respectively, upper reservoir will be constructed on the hilltop with maximum dam height of 27 m to create the desired storage capacity while the lower reservoir will have maximum height of 59 m and shall be constructed across River Pej. This Project envisages non-consumptive re-utilization of 14.77 MCM of water for re-circulation among these two reservoirs.

ii. The proposed Saidongar 1 - Karjat Open Loop Pump Storage Project capacity is 3000 MW (9 x 300 MW + 2 x 150 MW), installed between the upper reservoir and lower reservoir. The proposed project is intended to meet the power demands during peaking

time, and the reversible turbines would function as pumps during non-peaking time to pump the water from lower reservoir to upper reservoir.

iii. Torrent PSH3 which is a subsidiary of Torrent Power Limited (TPL has entered into a Memorandum of Understanding (MoU) with the Department of Water Resources, Government of Maharashtra on 03.09.2024 to establish Saidongar 1 - Karjat Open Loop Pumped Storage Project (PSP) of 3000 MW installed capacity located in district Raigad, Maharashtra.

iv. The project has obtained Fresh ToR obtained from MoEF&CC vide letter No. J - 12011/04/2025-IA.I; dated 18.02.2025. Based on the ToR issued by MoEF&CC, the EIA Study has been conducted and detailed in the report considering proposed project as an Open loop project due to change in technical parameters of Project & formation of SPV. Earlier ToR was obtained for Closed loop project from MoEF&CC vide file no. J-12011/42/2023-IA.I (R), dated 23rd September 2023.

v. The geographical co-ordinate of the Upper & Lower Reservoir are:

Upper reservoir: Latitude 18°54'15"N and Longitude 73°24'32"E
Lower reservoir: Latitude 18°54'37"N and Longitude 73°25'34"E.

vi. **Land Requirement**: For the development of Saidongar-1 PSP, land would be required for construction of project components, reservoir area, muck dumping, construction camps and colony, etc. Total land required for the construction of proposed activities is approximately 377 ha (233 ha forest land and 144 ha of non-forest land)

vii. **Demographic details in 10 km radius of project area:**

The project is proposed in Karjat Taluka of Raigad district in Maharashtra. The project consists of land acquisition of 377 ha in which 233 ha is forest area and remaining 144 ha is private land. The table below shows the affected land areas land area (non-forest) due to the proposed project

Affected Villages and Land Requirement

S. No	Name of village	Area (Ha)
1.	Bhaliwadi	2.29
2.	Ambot	1.34
3.	Potal	6.87
4.	Pali	48.14
5.	Saiongar	11.79
6.	Dhak	73.55

S. No	Name of village	Area (Ha)
	Total	**144**

viii. **Water Requirement:**

Construction Activities: 1060 KLD will be sourced from the private water suppliers through water tankers.

Labour Camps: 540 KLD will be sourced from the private water suppliers through water tankers.

Operation Phase: Total water requirement for the project is 23 MCM for initial filling, and 3 MCM annually to compensate for evaporation losses. This water will be sourced from the self-catchment of Pej River. The Water Availability Certificate has been obtained from the Hydrology Department, WRD Nashik on 13.01.2025, which is the competent authority under the GoMH PSP Policy 2023. It is ensured that this project will not impact downstream existing water users like irrigation or drinking supply.

ix. **Project Cost:** The estimated project cost is Rs. 13,505.15 Crores. Total capital cost earmarked towards environmental management plan is Rs. 73.07 Crores (Capital Cost: Rs. 51.54 Crores & Recurring Cost: Rs. 21.53 Crores for four years).

x. **Project Benefits**

The Saidongar-1 Karjat Open Loop PSP will provide energy storage, load balancing, frequency control, and peak power generation, offering both economic and environmental benefits, including improved air quality through efficient and reliable power generation.

1. Improvements in Physical Infrastructure:

The Saidongar-1 Karjat PSP, with an installed capacity of 3000 MW & average annual generation of 6241.50 MU, is projected to yield total power sale benefits of ₹1,23,821.2 Crores over its 40-year lifespan. After accounting for operating costs, depreciation, and interest of ₹14,399.42 Crores, the net contribution to the national economy is estimated at ₹1,09,431.78 crore.

2. Improvement in Social Infrastructure & Employment Potential:

Local Area Development Plan: Local Area Development Plan will be addressing aspects of local sustainable development like community development & environment protection in and around the proposed Project, with budgetary estimate of **Rs. 500 Lakhs**

3. Creation of Direct and Indirect Employment:

The Saidongar 1 - Karjat PSP is envisaged to create direct & indirect employment of 2000 persons during construction phase of the project.

xi. **Environmental Sensitive area:** There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km radius from the project site.

xii. **MoU/any other clearance/permission signed with State government:** Torrent PSH3 Private Limited is a subsidiary of Torrent Power Limited (TPL). Torrent PSH3 has entered into a Memorandum of Understanding (MoU) with the Department of Water Resources, Government of Maharashtra on 03.09.2024 to establish Saidongar 1 - Karjat Open Loop Pumped Storage Project (PSP) of 3000 MW installed capacity located in district Raigad, Maharashtra.

xiii. **Resettlement and Rehabilitation**: Not Applicable

As per the Government of Maharashtra Gazette notification (Maharashtra Gazette notification No. LQN. 12/2013/C.R. 190/A-2 dated 27th August 2014) the provisions of Rehabilitation and Resettlement under RFCTLARR 2013 will apply only in case of private company purchases land through private negotiations to an extent equivalent or more than 1000 hectares and the project area is less than 1000 Ha.

xiv. **Alternative Studies:** A detailed alternative study has been carried out to find the best optimized location for lower reservoir. Detailed topographical survey was carried out for all the four (4) options and analyzed for optimum storage capacity of reservoirs.

The analysis of the alternatives for alignment is evaluated using Environmental Impact Assessment Decision Support System (EIADSS). The Impact scoring criteria are mainly categorized into five groups *(viz. Natural Resource Environment, Physical Environment, Biological Environment, Social Environment, & Engineering Environment).* For option-1, 2, 3 & 4, the cumulative weighted percentage is worked out to be 44%, 46%, 47% and 39% respectively. The minimum weighted percentage indicates the best alternative, and the maximum weighted percentage indicates the poor for the project. So, it is concluded that the minimum weighted percentage obtained to option-4 and is recommended for this project which will have social & environmental acceptability, technically viability and economic & financial feasibility.

xv. **Baseline Environmental Scenario:**

Period	**From October 2024 to May 2025**
AAQ parameters at 6 locations (min. & Max.)	PM10 = 57.4 to 96.3 µg/m3 PM2.5 = 25.4 to 52.6 µg/m3 SO2 = 7 to 18.9 µg/m3 NOx = 14.6 to 33.7 µg/m3 CO = 0.32 to 0.57 mg/m3
Incremental GLC Level	PM10 = Max. GLC : 81.2µg/m3

River & Pond water samples (14 samples)	pH: 6.96 to 8.19, Dissolved Oxygen: 6.1 to 7.8 mg/L Total Dissolved Solids: 96 to 986 mg/L Total Hardness (as CaCO3): 12.8 to 259.4 mg/L Calcium (as Ca): 6.2 to 74.2 mg/L Magnesium (as Mg) : 1.8 to 23.8 mg/L Sulphate (as SO4): 2 to 40 mg/L Nitrate (asNO3) :0.1to 8.4 mg/L Chloride (as Cl) : 9.6 to 81.2 mg/L Iron (as Fe): 1.2 to 4.6 mg/L BOD 0.02 to 0.823 mg/L Heavy metals like Copper (as Cu), Lead (as Pb), Cadmium(as Cd), Chromium (as Cr), Manganese (as Mn), Arsenic (as As) and Mercury(as Hg) : Within the IS:2296 Class C Limits
Ground Water samples at 12 locations	PH: 7.56 to 9.08; Total Dissolved Solids: 143 to 637 mg/L total Hardness (as CaCO3): 42 to 278 mg/L Total Alkalinity(asCaCO3): 8 to 256 mg/L Calcium (as Ca): 12.27 to 87.95 mg/L Magnesium (as Mg): 2.04 to 32.66 mg/L Sulphate (asSO4): 2.4to 78 mg/L Nitrate (as NO3): 0.1 to 1.5 mg/L Chloride (as Cl): 13.2 to177 mg/L Iron (as Fe): 0.01 to0.82 mg/L Heavy metals like Copper (as Cu), Lead (as Pb), Cadmium(as Cd),Chromium (as Cr), Manganese (as Mn), Arsenic (as As) and Mercury(as Hg) : Within the IS;10500 Standards
Noise levels Leq (Day & Night) at 12 locations	The Leq values for day time was observed to be 52 to 55.1 dB (A) in residential area, while during night time 45.1 to 46.3 dB (A).
Soil Quality at 12 Locations	Bulk density:1.31 to 1.6 gm/cm3; pH range 6.46 to 7.89; Electrical conductivity (EC); 53 to 298 µS/cm; calcium content: 80.4 to 3644 mg/kg;

	sodium: 54.2 to 134.3 mg/kg; potassium: 28.5 to 790 mg/kg; Nitrogen: 571 to 2528 mg/kg; Phosphorous: 3.2-to 31 mg/kg; Magnesium: 29.2 to 763 mg/kg; Organic Matter: 0.28 to 3.7
Flora & Fauna	Schedule-I species observed in the study area: Mammals (14): Indian Jackal, Indian Fox, Indian Wolf, Jungle Cat, Leopard, Indian Porcupine, Sloth Bear, Bonnet Macaque, Gray Langur, Asian Palm Civet, Small Indian Civet, Four-horned Antelope, and Sambar Deer, along with Indian Pangolin, have been reported from the study area. Birds (6): Indian Peafowl, Brahmini Kite, Osprey, Black Eagle, White-eyed Buzzard and Shikra. Reptiles (6): Asian Chameleon, Russell's Viper, Indian Cobra, Rat Snake, Indian Python, and Bengal Monitor.

xvi. Details of Solid waste/ Hazardous waste generation/ Muck and its management, muck generated

- Municipal Solid Waste: 3000 kg/day
- Dispose camp solid waste at nearby municipal landfill sites.
- Hazardous Wastes: The construction activity will also generate hazardous waste like waste oils, used batteries, empty cans etc. These wastes should be collected, handled and disposed as per the Hazardous and Other Wastes (Management & Trans-boundary Movement) Rules, 2016. This waste be handed over to the MPCB authorized recyclers.
- Biomedical Wastes: Tie up with a district or private hospital for biomedical waste disposal.

Muck Generation

The construction activities of the project would generate muck from excavation of various project structures. The total quantity of muck generated rock excavation is about 110.78 Lakh cum. Total quantity of muck proposed to be disposed in designated muck disposal area, after considering swelling factor, Compaction factor and reuse would be 65.69 Lakh cum. The entire excavated material is proposed to be dumped at three locations identified specifically for this purpose

xvii. Public Hearing for the proposed project has been conducted by the State Pollution Control Board on 03.09.2025. The main issues raised during the public hearing are related to Land

Acquisition (Forest & Non-Forest Land), Environmental and Ecological Issues of Concern.

xviii. The salient features of the project are as under:-

1. EAC MEETING DETAILS:		
EAC meeting/s	:	41st Meeting of Expert Appraisal Committee (River Valley & Hydro-Electric Projects)
Date of Meeting/s	:	13.10.2025
Date of earlier EAC meetings	:	29.01.2025 (For Terms of Reference)

2. PROJECT DETAILS:		
Name of the Proposal	:	Saidongar 1 - Karjat Open Loop Pumped Storage Project (3000 MW), Raigad District Maharashtra
Proposal No.	:	IA/MH/RIV/552857/2025
Location (Including Coordinates)	:	State: Maharashtra District: Raigad Tehsil: Karjat The geographical coordinates of the proposed Upper Reservoir Latitude: 18°54’15” N & Longitude: 73°24’32” E Lower Reservoir Latitude: 18°54’37” N & Longitude: 73°25’34” E
Company’s Name	:	Torrent PSH3 Private Limited
CIN no. of Company/user agency	:	U35100GJ2023PTC147330
Accredited Consultant and certificate no.	:	NABET/EIA/23-26/SA 0247
Project location (Coordinates /River/Reservoir)	:	The geographical coordinates of the proposed Upper Reservoir at Dhak Village Latitude: 18°54'15” N & Longitude: 73°24'32” E Lower Reservoir at Pali T. Kothal Kalathi Latitude: 18°54'37" N & Longitude: 73°25’34” E
Inter- state issue involved	:	No
Proposed on River/ Reservoir	:	Pej River
Type of Hydro-electric project	:	Open loop
Seismic zone	:	III

3. CATEGORY DETAILS:

Category of the project	:	A
Capacity / Cultural command area (CCA)	:	3000 MW
Attracts the General Conditions (Yes/No)	:	No
Additional information (if any)	:	Nil

4. ToR/EC Details		
ToR Proposal No.	:	IA/MH/RIV/517008/2025
EAC meeting date	:	29.01.2025
ToR Letter No.	:	J-12011/04/2025-IA.I (R)
ToR grant Date	:	18.02.2025
Cost of project	:	INR 13,505.15 Cr
Total area of Project	:	377Ha
Height of Dam from River Bed (EL)	:	Lower Reservoir - 59m Upper Reservoir - 27m
Details of submergence area	:	Nil
District to provide irrigation facility (if applicable)	:	Not Applicable
Details of tunnels on upper level & lower level and length of canal (if applicable)	:	Tail Race Tunnels Shape – Circular Lining - Concrete DTT & TRT (Big Unit) Numbers – 9 nos. Diameter – 5.8 m Length – 58.50 m Main TRT (Big Unit) Number – 4 nos. Diameter – 7.10 m Length – 275 m DTT & TRT (Small Unit) Number – 2 nos. Diameter – 3.6 m Length – 43 m Intermediate TRT (Small Unit) Numbers – 1 no. Diameter – 5 m Length – 30 m Main TRT (Small Unit) Numbers – 1 no. Diameter – 7.10 m Length – 367 m
No. of affected Village.	:	Nil (No Rehabilitation is envisaged in

		project)
No. of Affected Families	:	Nil (No Rehabilitation is envisaged in project)
Project Benefits	:	Contribution to the Growth of National Economy Creation of Direct and Indirect Employment Reduction of Carbon Emissions Local Area Development under CER Other Tangible benefits include Green Belt Development Large Scale Plantation Subsidiary Industrial Opportunities
R&R details	:	The proposed project does not involve R&R activities
Catchment area/ Command area	:	23.4km2
Types of Waste and quantity of generation during construction/Operation	:	Muck waste generated during the construction phase is 110.78 lakh cum
Material used for blasting and its Composition as per DGMS standards.	:	Cartridge of Gelatine (Nitrate mixture)
E-Flows for the Project		
Is Projects earlier studied in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes then E-flow with TOR/Recommendation by EAC as per CIA&CC study of River Basin.	:	Not Applicable
If not the E-Flows maintain criteria for sustaining river ecosystem.	:	The proposed project envisages a non-consumptive utilization of 23 MCM (one time filling requirement) which will be sourced in 2 -3 year of time during monsoon season. 3 MCM (Annual recoupment requirement) will be sourced each year in the monsoon season. Water availability studies by Water Resource Department, Nasik, Maharashtra was carried out and water availability certificate is issued to the project on 13.01.2025 ensuring the ecological flow & requirement of downstream user
Details on provision of fish pass	:	Specific Fisheries Management Plan is not proposed for the river Pej as the water flows only during the monsoon season or rainy days otherwise remains almost dry,

		therefore, this stream does not support a significant aquatic life. However, to promote Pisciculture in the surrounding villages, a budgetary estimate of Rs. 60 Lakhs is proposed as per Fisheries Management Plan.
Project benefit including employment details (no of employee)		Construction of the proposed project would create several direct employment opportunities. The construction phase will last for about 45-48 months. The total number of persons engaged in the project including the service population will be about 2000 nos.
Area of Compensatory Afforestation (CA) with tentative no. of plantation.	:	Compensating for the loss of 233 hectares of Class I forest category in Maharashtra requires plantation with native trees at a density of 0.7. The estimated budget for this compensatory plantation is ₹ 4.86 crores including the land preparation, saplings, labor, irrigation & four years of maintenance.
Previous EC details	:	Not applicable
EC Compliance Report by R.O, MOEF&CC	:	Not applicable

5. ELECTRICITY GENERATION CAPACITY:		
Powerhouse Installed Capacity	:	3000 MW
Generation of Electricity Annually	:	6241.50 MU
No. of Units	:	11nos (9x300 MW + 2x150 MW)

6. MUCK DISPOSAL DETAILS:		
No. of proposed disposal area/ (type of land- Forest/Pvt land)	:	3 muck disposal sites with an area of 41.88 ha (Non-forest land)
Cross section of proposed muck area, Height of muck with slope.	:	Slope - 30° Height - 26m
Distance of muck disposal area(location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.	:	Proposed Muck disposal Site (Site 5C) 1.60 km from the HFL of proposed lower reservoir. 300 m from HFL of Pej River Other Muck disposal sites (5A & 5B) are 200 & 500 m away from the HFL of the Upper Reservoir
Total Muck Disposal Area	:	41.88 ha

Estimate Muck to be generated	:	110.78 lakh cum
Transportation	:	The generated muck will be carried in dumper trucks covered properly tied to the vehicle in line with international best practices. All precautionary measures will be followed during the dumping of muck. All dumpers will be well maintained to avoid any chances of loose soil from being falling during the transportation. All routes will be periodically wetted with the help of sprinklers prior to the movement of dump trucks. Dumping would be avoided during the high-speed wind, so that suspended particulate matter (PM10) levels could be maintained.
Monitoring mechanism for Muck Disposal Transportation	:	• Muck shall be dumped from bottom in layers of 500-700mm depending on size of boulders • Each layer shall be rolled compacted. • A layer of soil shall be spread on top of it to make it suitable for plantation. • All norms of Forest department, SPCB and MoEF&CC and their acts related to muck disposal shall be complied with. • Design consultant shall be engaged for designing of retaining structures. • Plantation shall be done on the reclaimed land and native variety of plants and trees shall be planted.

7. LAND AREA BREAKUP		
Private land	:	144ha
Government land/Forest Land	:	233 Ha
Submergence area/Reservoir area	:	Upper Reservoir: 115.78 Ha Lower Reservoir: 123.61 Ha
Land required for project components	:	Upper Reservoir: 115.78 Ha Lower Reservoir: 123.61 Ha Water Conductor System: 38.63 Ha

8. PRESENCE OF ENVIRONMENTALLY SENSITIVE AREAS IN THE STUDY AREA		
Forest Land/Protected Area/ Environmental Sensitivity Zone	**Yes/ No**	**Details of Certificate/ letter/Remarks**
Reserve Forest/Protected Forest Land	Yes	Based on the recommendations of the Additional PCCF & Nodal Officer, Maharashtra State, Nagpur the Revenue &

		Forest Department, Mantralaya, Mumbai, forwarded the file to the Secretary, MoEF&CC, GoI on 19.09.2025 vide No. FLD-1325/CR-106/F-10, duly recommending the diversion of 233 ha of forest land for the proposed project.
National Park	No	None within 10km radius
Wildlife Sanctuary	No	As per letter dated: 06.06.2025 of the Deputy Conservator of Forest, Alibag, The aerial distance from the project site to the Bhimashankar WLS is 15.53 Km and Bhimashankar WLS ESZ is 15.168 Km. The same has been confirmed by the Revenue & Forest Department, Mantralaya, Mumbai on 19.09.2025
Archaeological sites monuments/historical temples etc	No	None within 100 – 200 m radius
Additional information (if any)	-	-

Availability of Schedule-I species in study area:

Mammals (14): Indian Jackal, Indian Fox, Indian Wolf, Jungle Cat, Leopard, Indian Porcupine, Sloth Bear, Bonnet Macaque, Gray Langur, Asian Palm Civet, Small Indian Civet, Four-horned Antelope, and Sambar Deer, along with Indian Pangolin, have been reported from the study area.
Birds (6): Indian Peafowl, Brahmini Kite, Osprey, Black Eagle, White-eyed Buzzard and Shikra.
Reptiles (6): Asian Chameleon, Russell's Viper, Indian Cobra, Rat Snake, Indian Python, and Bengal Monitor.

9. PUBLIC HEARING (PH) DETAILS	
Advertisement for PH with date	02.08.2025
Date of PH	03.09.2025
Venue	Gaurkamath Village, Taluka Karjat, District Raigad, Maharashtra
Chaired by	Additional District Magistrate Shri Sandesh Shirke, in the presence of Shri Bhosale Saheb, Regional Officer, MPCB and Smt. Rutuja Bhalerao, Sub-Regional Officer, MPCB
Main issues raised during PH	Land Acquisition (Forest & Non-Forest Land), Environmental and Ecological Issues of Concern
No. of people attended	442

10. BRIEF OF BASELINE ENVIRONMENT:

Particulars	Details
Period of baseline data collection/ Sampling period.	Winter (December 2023 to February 2024), Post monsoon (October to December 2024) Pre-monsoon (March to May 2025)
Number of Sampling Locations for Air, noise, water, land	Air Quality – 6 locations Surface Water – 14 locations Ground Water – 12 locations Soil Quality – 12 locations Noise Level – 12 locations
Flora and fauna of the project area,	A mix of thorny, succulent and xerophytic bushes are common such as Chromolaena odorata, Urena lobata and Hygrophila serpyllum whereas on the slopes and foothills trees such as Butea monosperma, Cassia fistula, Azadirachta indica etc are found. The slopes at the sides of the stream (i.e. lower reservoir) shows good presence of greenery with tree species like Careya arborea, Terminalia alata, Terminalia arjuna, Terminalia bellerica, Euphorbia nivvulia Madhuca longifolia var. latifolia, and Diospyros melanoxylon and Ficus hispida etc. In detail is provided in the EIA& EMP report
Aquatic ecology, etc.	The lower reservoir will be constructed on the river Pej in which water flows only during the monsoon season or rainy days otherwise remains almost dry, therefore, this stream does not support a significant aquatic life and no migratory fish aspects is observed. In detail is provided in the EIA& EMP report
Brief description on hydrology and water assessment as per the approved Pre-DPR:	The proposed PSP is being planned on the allocated water from Pej river reservoir, for utilization by re-circulation. The upper reservoir is away from any river course and do not have any natural streams draining into the reservoirs. The yield into the upper reservoir & lower reservoirs are assumed to be exactly proportional to area, which of the reservoir is 1.15 & 1.23 Sq.km respectively, 3 MCM of water is available at 90% dependability to recoup losses (with one-time filling requirement of 23 MCM) for lower dam of Saidongar-1 PSP of 3000 MW at Karjat, Raigad in Ulhas River sub basin if west flowing river basin. Yield available at proposed

	Lower dam of Saidongar-1 PSP at 90% dependability is 34.177 MCM as against the demand of 3.0 MCM. The Chief Engineer, Hydrology & Dam safety, Nashik issued a Water availability certificate to the project on 13.01.2025
Additional detail (If any)	--

11. COURT CASE DETAILS:		
Court Case	:	Nil
Additional information (if any)	:	--

12. STATUS OF OTHER STATUTORY CLEARANCES

Particulars	**Letter no. and date**
Status of Stage- I FC	Based on the recommendations of the Additional PCCF & Nodal Officer, Maharashtra State, Nagpur the Revenue & Forest Department, Mantralaya, Mumbai, forwarded the file to the Secretary, MoEF&CC, GoI on 19.09.2025 vide No. FLD-1325/CR-106/F-10, duly recommending the diversion of 233 ha of forest land for the proposed project.
Approval of Central Water Commission	-
Approval of Central Electricity Authority	CEA-PS-11-23(23)/2/2025-PSPA-IDivision I/46058/2025 dated 10.01.2025
Additional detail (If any)	Wildlife conservation Plan has been prepared and obtained approval on 23.06.2025 from PCCF Maharashtra State, Nagpur. Approval for the Large-Scale Plantation obtained from the Forest Range Officer Karjat East on 19.09.2025
Is FRA done for FC-I	The FRA process is initiated and gram sabha approval for Dhak village is pending with SDM, Karjat

13. DETAILS OF EMP

S. No	Environmental Plans	Capital Cost (Lakh)	Recurring Cost (Lakh)				Total Cost (Rs. Lakh)
			Y1	Y2	Y3	Y4	
1	Biodiversity Conservation & Wildlife Conservation Plan	326.00	0.00	0.00	0.00	0.00	326.00
2	Fisheries Development Plan	60.00	0.00	0.00	0.00	0.00	60.00
3	Muck Dumping & Management Plan	668.20	626.20	626.20	626.20	626.20	3173.00
4	Landscaping, Restoration of Construction Sites	100.00	25.00	25.00	25.00	25.00	200.00
5	Sanitation and Solid Waste Management Plan	120.00	10.00	10.00	10.00	10.00	160.00
6	Public Health Delivery System	270.00	15.00	15.00	15.00	15.00	330.00
7	Energy Conservation Measures	175.00	20.00	10.00	10.00	10.00	225.00
8	Labour Management Plan	100.00	5.00	5.00	5.00	5.00	120.00
9	Green Belt Development Plan	115.00	10.00	10.00	7.50	7.50	150.00
10	Pollution Mitigation Measures	81.30	5.00	5.00	5.00	5.00	101.30
11	Environmental Monitoring Program with administrative and logistic costs	0.00	38.00	38.00	38.00	34.35	148.35
12	Reservoir Rim Treatment Plan	50.00	100.00	100.00	100.00	100.00	450.00
13	Disaster Management Plan	250.00	15.00	5.00	5.00	5.00	280.00
14	Watershed Development Plan	359.00	0.00	0.00	0.00	0.00	359.00
15	Catchment Area Treatment plan	382.25	0.00	0.00	0.00	0.00	382.25
16	Large scale Plantation	384.00	0.00	0.00	0.00	0.00	384.00

S. No	Environmental Plans	Capital Cost (Lakh)	Recurring Cost (Lakh)				Total Cost (Rs. Lakh)
			Y1	Y2	Y3	Y4	
17	Local Area Development Plan	100.00	200.00	100.00	50.00	50.00	500.00
18	Net Present Value, CA land & CA plantation*	0.00	0.00	0.00	0.00	0.00	0.00
19	Resettlement and Rehabilitation*	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**5154.25**	**663.00**	**533.00**	**480.50**	**476.85**	**7307.60**
	Capital	**5154.25**		**Recurring**	**2153.35**		**7307.60**

41.1.3 The EAC during deliberations noted the following:

- The EAC deliberated on the information submitted and presented during the meeting, observing that the proposal is for the grant of Environmental Clearance (EC) to the project for Saidongar 1 - Karjat Open Loop Pumped Storage Project (3000 MW) in an area of 377 Ha at Village Potal, Saidongar, Ambot, etc, Sub District Karjat, District Raigarh, Maharashtra by M/s Torrent Psh 3 Private Limited.

- The project is listed under S.N.1(c) of the Schedule to the Environmental Impact Assessment (EIA) Notification as a Category 'A' project, which requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

- The EAC, constituted under the provisions of the EIA Notification, 2006, and comprising expert members/domain experts in various fields, examined the proposal submitted by the Project Proponent, including the EIA/EMP reports prepared and submitted by the Consultant accredited by QCI/NABET on behalf of the Project Proponent.

- The EAC noted that the Project Proponent has provided an undertaking affirming that the data and information provided in the application and enclosures are accurate to the best of their knowledge, with no suppression of information in the EIA/EMP reports. The proponent also acknowledged that if any part of the data/information submitted is found to be false or misleading at any stage, the project will be rejected, and any Environmental Clearance granted will be revoked at the risk and cost of the Project Proponent.

- The EAC observed that earlier Terms of Reference issued by MoEF&CC, New Delhi vide 12011/42/2023-IA.I (R), dated 23.09.2023 to the project, however due to change in scope of the project, PP has obtained fresh Terms of Reference granted by MoEF&CC vide letter No. J -12011/04/2025-IA.I; dated 18.02.2025

- The EAC noted that the baseline data has been carried out from October 2024 to May 2025 and all the parameters are within the prescribed norms. Additionally, it was noted by the EAC that the total land requirement is about 377 ha ha for the construction of various project components, out of which 233 ha forest land and 144 ha of non-forest land. It was noted that the Stage-I Forest Clearance is still pending for diversion of 233 ha forest land land, however it was informed that based on the recommendations of the Additional PCCF & Nodal Officer, Maharashtra State, Nagpur the Revenue & Forest Department, Mantralaya, Mumbai, forwarded the file to the Secretary, MoEF&CC, GoI on 19.09.2025 vide No. FLD-1325/CR-106/F-10, duly recommending the diversion of 233 ha of forest land for the proposed project.

- The EAC inquired about the land acquisition status required for non–forest land for the proposed project, accordingly PP vide email dated 14.10.2025 submitted that the Non-Forest land of 144ha comprises of private and government land which are under process of transfer through one to one negotiation as per the provision of Maharashtra Land Revenue Code 1966 read with The Maharashtra Agricultural Lands (Ceiling on Holdings) Act, 1961 and The Maharashtra Land Leasing Act 2017. The status of statement of transfer is stated as under:

S.no	**Village**	**Name of Gram Panchayat**	**Total Land Area Required**		**Land Area Acquired**		**Status of land acquisition**
			ha	**acre**	**ha**	**acre**	
1	Hedvali, Sawale, Mandavane	Potal	30.00	75.00	30.00	75.00	Agreement to lease executed with Landowner
2	Gaulwadi	Pali	19.00	47.00	19.00	47.00	MOU executed with Landowner.
3	Pulachiwadi	Bhaliwadi	39.00	97.00	39.00	97.00	Application done to GoM, currently in advance stage of approval.
4	Dhak	Vadap	56.00	138.32	**14.00**	**35.78**	Sale deed Executed.
Total Land Area in ha			**144.00**	**355.68**	**102.00**	**254.78**	

- The EAC noted that the Public hearing was conducted on 03.09.2025 at Gaurkamath Village, Taluka Karjat, District Raigad, Maharashtra and chaired by Additional District Magistrate Shri Sandesh Shirke. Public notice mentioning venue location, date and time published in the three Number of Newspaper (one English daily - Indian express and two vernacular daily - Lokmat & Krushiwal) on 02.08.2025. The EAC discussed the concerns raised during the Public Hearing (PH) and reviewed the action plan submitted by the PP to

address these issues. After detailed deliberation, the Committee found the action plan satisfactory, recognizing that the proposed mitigation measures adequately respond to stakeholder's concerns.

- The committee observed that the proposed area of Saidongar 1 - Karjat pumped storage project falls in the Western Ghats, therefore, the EAC sub-committee had carried out a site visit to project site from 21.04.2025 to 23.04.2025. The sectoral EAC has discussed the site visit report in 31st EAC meeting held on 15.05.2025 and made Observations/Recommendations. It was noted that the PP has provided satisfactory information/response to the recommendations of the EAC (Sub -Committee).

- The Committee noted that total water requirement for the project is 23 MCM for initial filling, and 3 MCM annually to compensate for evaporation losses. This water will be sourced from the self-catchment of Pej River. The Water Availability Certificate has been obtained from the Hydrology Department, WRD Nashik on 13.01.2025, which is the competent authority under the GoMH PSP Policy 2023.

- The EAC during the meeting, noted that the project layout had not been approved by the CEA. In response, the PP informed that the layout approval letter had been obtained on the same day of the meeting. Subsequently, the PP vide email dated 14.10.2025 submitted the layout approval letter dated 13.10.2025 issued by the CEA.

- The Committee observed that provision of a piped water supply arrangement and cleaning and rejuvenation of local water bodies, including ponds, is a pressing need for the local villagers and should be considered as part of the project's community development and environmental management activities.

- The Committee observed that the road width, particularly along straight stretches, can be reduced to 7 meters without any technical constraints, while additional widening may be limited to hairpin bends or U-turns. Such optimization would help in minimizing forest land diversion and saving a significant number of trees.

41.1.4 The EAC after examining the information submitted and detailed deliberations recommended the proposal for grant of Environmental Clearance by the Ministry to Saidongar 1 - Karjat Open Loop Pumped Storage Project (3000 MW) in an area of 377 Ha at Village Potal, Saidongar, Ambot, etc, Sub District Karjat, District Raigarh, Maharashtra by M/s Torrent Psh 3 Private Limited, under the provisions of EIA Notification, 2006 and as amended time to time with subject to compliance of applicable Standard EC conditions and following specific environmental safeguard conditions:

[A] Environmental management and Biodiversity conservation:

i. Stage-I FC shall be obtained before grant of EC.

ii. The water of rainfall yield of self-catchment of the reservoir shall be released to downstream through body of dam/ barrage/ embankment etc.

iii. The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. 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 be updated proportionately.

iv. The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.

v. Ambient Air Quality Monitoring Stations for real time data to be installed at project site before commencement of the construction, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.

vi. No vehicle purchase shall be allowed from funds earmarked for implementation of Wildlife Conservation plan. Measures for minimizing the human–animal conflict specially for black bear and leopard be suitably incorporated in the wildlife conservation plan in consultation with State Forest Department.

vii. 10000 plants shall be planted around the muck disposal area and the survival of plants shall be submitted with the 6 monthly compliance report.

viii. Plantation of saplings shall be carried out as a part of the tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).

ix. Watershed development plan prepared by ICAR-Indian Institute of Soil and Water Conservation Research Centre, Vasad-388306, Anand, Gujarat shall be implemented within 10 km radius of the project. At least one existing water body in each village within the study area shall be conserved/rejuvenate/restore in consultation with the local authorities. Implementation status be submitted in the 6 monthly compliance report to the concerned regional office of the Ministry.

x. PP shall prepare time bound reclamation and restoration plan for restoration of batching plant in consultation with the Forest Department and same shall be submitted to IRO, MoEF&CC and shall be fully implemented within five years of commissioning of the project.

xi. The reservoir sedimentation study shall be conducted periodically to determine the actual amount of water available in the reservoir.

xii. PP shall optimize the road design by restricting the width to 7 meters along straight stretches and providing additional widening only at hairpin bends or U-turns, wherever essential, so as to minimize forest land diversion and reduce tree cutting to the extent possible.

xiii. Piped water supply will be provided to the project affected villages.

xiv. All ephemeral and seasonal rivulets and springs in and around the project area shall be preserved in their natural condition without obstruction or diversion. Necessary measures shall be undertaken for their conservation and rejuvenation to maintain natural drainage and ecological flow.

xv. An Wildlife Conservation action Plan shall be prepared for the prominent species identified during the survey and investigation, in consultation with the State Forest and Wildlife Department, and implemented in letter and spirit with adequate budgetary provisions prior to commencement of project activities. The plan shall be submitted to the Regional office, MoEF&CC and implementation status of the same shall be submitted in six monthly compliance report.

[B] Disaster Management:

i. Disposal of the excavated muck and its filling on the low-lying area with proper measures for the stabilization and greenery to minimize the impacts of the generated construction muck shall be taken up pari passu with construction work. A muck transportation plan shall be prepared and implemented. The movement of muck carrying vehicles shall be monitored through latest sensor-based technology to ensure the muck dumping at designated sites.

ii. Stabilization of muck disposal sites using biological and engineering measures shall be taken up immediately to ensure that muck does not roll down the slopes and does not pollute the natural streams and water bodies in surrounding area. The plantation on muck disposal site with local species for restoration of ecology and environment of the project site area.

iii. Necessary control measures such as water sprinkling arrangements, and construction of paved roads leading to muck disposal sites etc. shall be taken up on priority to arrest fugitive dust at all the construction sites.

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. Technical appraisal of project shall be obtained from CEA in terms of Office Memorandum no. 15-23/3/2021-Hydel-II dated 29.08.2025 issued by the Ministry of Power, before start of construction activities of the project.

vi. Landslide and other heavy rain related disasters shall be taken care of through appropriate preventive measures during construction and operation of project.

[C] Socio-economic:

i. Land acquired for the project shall be suitably compensated in accordance with the prevailing guidelines of the state government and provisions under Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.

ii. RO plant shall be installed in the nearby 5 villages and the maintenance shall be done by the project Authorities.

iii. Solar panel be provided to the families living in rural areas within 10 km radius of project.

iv. School up to 12^{th} Standard shall be established and managed to provide free quality education for children from project affected villages/Tribal villages. Adequate

transportation facilities shall also be provided to students to ensure connectivity and ease of access.

v. 50 bed multi-specialty hospital shall be established to cater the need of tribal population/locals. The tribal population within 10 km radius of the project shall be given free of cost medical facility.

vi. Skill development Centre shall be established within 10 km radius of the project and regular training programmes for development and promotion of traditional art/products of tribal/local population. The Skill Development Plan shall mandatorily include the following components:

- Capacity building and skill enhancement programs aligned with local livelihood opportunities.
- Establishment of linkages with Industrial Training Institutes (ITIs) and other recognized training centres for imparting technical skills.
- Provision of free or subsidized access to healthcare facilities in project-supported hospitals and health centres.
- Support to educational institutions in the study area through free services, scholarships, infrastructure strengthening, and vocational guidance programs.
- Special outreach initiatives for women, youth, and vulnerable groups within the SC/ST communities to ensure inclusive participation and benefits.
- The Plan shall be implemented in a time-bound manner with clearly earmarked budgetary provisions, which shall not be diverted for any other purpose.

vii. The PP shall submit annual progress reports on the implementation of the Skill Development Plan and associated community welfare measures to the Regional Office of the Ministry.

viii. Bio-Gas plant shall be installed in the Project affected area for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.

ix. Preference in employment opportunities and admission to ITI institutions shall be given to Project Affected Families (PAFs).

x. An institutional mechanism to be developed to ensure the preference of jobs to PAFs and SC/ST and also a policy for preferential treatment for award of sundry works to the PAFs and SC/ST and their dependents.

xi. The compliance of above conditions shall be monitored by IRO, MoEF&CC and regularly site visit once in year. The compliance report of IRO shall be regularly submitted to MoEF&CC.

[D] Miscellaneous:

i. After 5 years of the commissioning of the project, a study shall be undertaken regarding impact of the project on the environment. The study shall be undertaken by an independent agency.

ii. The conditions mentioned in the Western Ghats notification (draft notification no.

S.O.3060(E) dated 31.07.2024) for development of hydro-power projects issued by the MOEF&CC shall be complied with.

iii. A dedicated team to oversee environmental management activities (at project site) shall be set up comprising Environment Manager having post graduate qualification in Environmental Sciences/ Environment Engineering along with other supporting staff. The Environment Manager Shall report to Project Head directly.

iv. PP shall procure construction material only from those Organizations having all valid legal/statutory clearances/permissions or necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and as amended thereof.

Agenda Item No. 41.2

Sitapur-Hanumana Micro Irrigation Project (CCA: 1,29,060 Ha) at Village Hatwa, Murtiha, Orani, Etc, Sub-District Hanumana, Sihawal, Chitrangi, Gopadbanas, etc, District Rewa, Sidhi, Singrauli, Mirzapur, Prayagraj and Sonbhadra, Madhya Pradesh and Uttar Pradesh by M/s Naigarhi Micro Irrigation Project, Division- Rewa, MP – Terms of Reference – reg.

[Proposal No. IA/MP/RIV/525292/2025; F. No. J-12011/35/2025-IA.I(R)]

41.2.1 Sitapur-Hanumana Micro Irrigation Project (CCA: 1,29,060 Ha) at Village Hatwa, Murtiha, Orani, Etc, Sub-District Hanumana, Sihawal, Chitrangi, Gopadbanas, etc, District Rewa, Sidhi, Singrauli, Mirzapur, Prayagraj and Sonbhadra, Madhya Pradesh and Uttar Pradesh by M/s Naigarhi Micro Irrigation Project, Division- Rewa, MP.

41.2.2 The Project Proponent and the accredited Consultant M/s. Voyants Solutions Private Limited, made a detailed presentation on the salient features of the project and informed that:

i. The Govt. of Madhya Pradesh through Water Resources Department has decided to implement the Sitapur-Hanumana Micro-Irrigation Project to improve the existing low irrigation intensity (15%) and to have overall development of the rain fed command area covered under four districts viz., Mauganj, Rewa, Sidhi and Singrauli.

ii. The project will provide micro irrigation in 129060 ha by storing the flow from Sone River during monsoon season. To harness the surplus water available in the river during monsoon and non-monsoon season, an assured source of irrigation during Rabi season is vehemently needed in the area. The project will also supply water for drinking as well as

industrial use. The barrage will be constructed at Village-Parsauna Khurd, Tehsil-Sihawal, District-Sidhi, State-Madhya Pradesh.

iii. The coordinates of barrage location are Latitude - 24°30'1.85"N and Longitude - 82°5'48.45"E.

iv. As per MoEF&CC EIA Notification 2006, the proposed project is covered under schedule 1 (c) - Category B-1. However, due to general condition i.e. project area falls within protected area of Son Gharial Wildlife Sanctuary, the project is appraised under Category A to the Ministry of Environment, Forest and Climate Change (MoEF&CC), New Delhi.

v. Sitapur-Hanumana Micro Irrigation Project, proposed across River Son, a tributary of River Ganga, in Tehsil Sihawal, District Sidhi, Madhya Pradesh, envisages construction of 1589 m long composite barrage comprising of 725 m long earthen dam of maximum height 9.50 m above foundation and 784 m long spillway comprising of 39 bays fitted with 16mx14m gates, 40m long non-overflow section on either side of spillway.

vi. It is designed for Gross and Live Storage of 268.90 and 255.746 MCM respectively at FRL 234.00 m above MSL for providing micro irrigation in Rabi season to 129060 ha CCA (Wheat 1MV; Gram N2RA ha) covered in 653 villages in four districts viz., Rewa, Mauganj, Sidhi and Singrauli, through pressurized rising mains up to distribution chambers and thereafter by gravity mains. Besides irrigation, it will cater to drinking and industrial water requirement of 5 MCM each. Approximately 108.647 MW of power is required for lifting water through seven vertical turbines.

vii. **Land requirement:** The total land requirement for the project is 3639.7039 ha of which 22.36 ha is forest land while 3617.3439 ha is non-forest land.

viii. **Demographic details in 10 km radius of project area:** Total population of the study area is 57,887 comprising of Males 29,387 (50.77%) and 28500 (49.23%) females with 5.04 person's average household size. Out of total population 6796 (11.74%) is scheduled caste and 12718 (21.97%) is schedule tribes.

ix. **Water requirement:** During Construction: 1550 KLD; During Operation, Domestic: 35 KLD, Irrigation-268.90 MCM, Industrial and Drinking- 5 MCM each.

x. **Project Cost**: The estimated project cost is INR 416793 Lakhs.

xi. **Project Benefit**: The project has been designed for Gross and Live Storage of approx. 268.90 MCM and approx. 255.746 MCM respectively for providing micro irrigation in Rabi season to 129060 ha CCA for crops of Wheat 1MV and Gram N2RA. The project will benefit farmers of 653 villages in four districts *viz*., Rewa, Mauganj, Sidhi and Singrauli. Due to assured irrigation, there shall be an increase in existing crop production

by 3900000 quintals during Rabi season and the gap between demand and supply shall reduce. After implementation of project net annual benefit due to irrigation shall be approx. INR 108944 lakhs. Besides irrigation, it will cater to drinking and industrial water requirement of 5 MCM each. The project will generate direct & indirect employment opportunities during the construction and operation phases which will significantly contribute to uplifting quality of life of people of the region.

xii. **Environmental Sensitive area:** The proposed project envisages construction of Barrage on Son River which is located within protected area of Son Gharial Wildlife Sanctuary.

xiii. **MoU / any other clearance/ permission signed with State government**: The project has been approved by Govt. of Madhya Pradesh vide Letter No: F 22(A)229-15/2024/MPS/31/287 dated 04 March, 2024. The project involves inter-state issue for which the inter-state agreement has been signed between UP, MP and Bihar for sharing of water of Son River.

xiv. **Resettlement and rehabilitation:** A total of 44 revenue villages of Sihawal, Bahari, Gopad Banas and Churahat tehsil of Sidhi district are being affected due to the proposed project. As per initial assessment, approximately 4,198 families are likely to be affected due to land acquisition. The process of land acquisition and Resettlement & Rehabilitation (R&R) is currently underway, and the updated status will be incorporated in the EIA Report.

xv. **Scheduled –I species:** Gharials are present in the Son River which is Schedule-I species as per Wildlife (Protection) Act, 1972 and amendments thereof. Details will be evaluated during EIA/EMP Study and Biodiversity and Wildlife Conservation and Management Plan for the conservation of Scheduled -I faunal species shall be prepared.

xvi. **Alternative Studies:** A comprehensive study was undertaken to evaluate potential alternative locations for the Sitapur-Hanumana Barrage axis. Three locations were identified and analyzed based on their geographic and technical parameters. The three locations proposed are as follows:-

Description	**Coordinates**	**Remarks**
Near Koludih Village	Latitude - 24°29'35.11"N Longitude - 82° 0'9.64"E	U/S Barrage Axis
Near Parsauna Khurd Village	**Latitude - 24°30'1.85"N Longitude - 82°5'48.45"E.**	**Barrage Axis (Proposed Site)**
Near Kunjhun Kalan Village	Latitude - 24°32'25.77"N Longitude - 82°16'58.67"E	D/S Barrage Axis

To maintain a consistent gross storage capacity of 268.90 MCM for the project, an Area Capacity Table was developed for all three proposed locations. The Full Reservoir Level (FRL) and submergence area were calculated based on this gross storage, and a comparative analysis was conducted.

Description	U/S Barrage Axis	Barrage Axis	D/S Barrage Axis
Gross Storage (MCM)	268.90	268.90	268.90
FRL (M)	238.00 M	234.00 M	231.50 M
Submergence Area (Ha)	5652.29 Ha	3389.1129 Ha	3013.57 Ha
Barrage Axis Length (M)	1730	1589	2581
Pros & Cons	Submergence affects Sone-River Bridge, proposed railway bridge, and causes a significant increase in submergence area.	Most Suitable Location	Increases barrage line length; submergence affects Jogadaha Gharial Sanctuary observation point and high-tension lines.

Conclusion

U/S Barrage Axis: The upstream location near Koludih Village results in substantial submergence, impacting critical structures such as the Sone-River Bridge and the ongoing railway crossing. Additionally, this location increases energy losses in the distribution network due to its greater distance from the command area. This is not recommended.

Barrage Axis: The location of project is deemed the most optimized. It strikes a balance by minimizing submergence impacts and maintaining an efficient barrage line length, making it the most suitable option. The required quantity of water for targeted CCA is found to be easily available at this site. Also, the submergence area of this site does not affect any railway line/road/transmission line crossing on the river. **This is RECOMMENDED**.

D/S Barrage Axis: The downstream location near Kunjhun Kalan Village leads to a significant increase in barrage axis length. While it marginally reduces the submergence area, it adversely affects the Jogadaha Gharial Sanctuary observation point and high-tension transmission lines. Furthermore, the lifting head for pumping increases due to lower bed levels and minimum drawdown levels along the Son River. This is not recommended.

xvii. **Details of Solid waste/ Hazardous waste generation/ Muck and its management.** About 70 TPA and 5 TPA Municipal Solid Waste and HDPE empty cement bags and plastic containers respectively will be generated during construction phase of project. This shall be managed as per applicable Wastes Management Rules. Detailed Solid Waste Management Plan shall be evolved while formulating EMP. The project will generate 1782657 cum of muck which will be re-used in back filling, pitching etc. Hence, no muck disposal site is required. Muck management plan and monitoring mechanism for muck disposal will be provided in EIA/EMP report.

xviii. Status of Litigation Pending against the proposal, if any. No Litigation is pending against the proposal.

xix. The salient features of the project are as under: -

- **Project Details:**

Name of the Proposal	Sitapur-Hanumana Micro Irrigation Project
Location (Including coordinates)	Village-Parsauna Khurd, Tehsil-Sihawal, District-Sidhi, State-Madhya Pradesh. Coordinates of project location: Latitude - 24°30'1.85"N, Longitude - 82°5'48.45"E
Inter- state issue involved	Yes, Inter-state agreement has been signed between UP, MP and Bihar.
Seismic zone	Seismic Zone II: Low Damage Risk Zone (Barrage Site, project components & major part of CCA) Seismic Zone III: Moderate Damage Risk Zone (marginal area of CCA and other components)

- **Category Details:**

Category of the project	A
Provisions	Project activity is covered at S. No. 1(c)(ii), Irrigation projects, in EIA Notification 14th September 2006 and amendments thereof
Capacity / Cultural command area (CCA)	CCA-129060 ha
Attracts the General Conditions (Yes/No)	Yes, Project is located within the Son Gharial Wildlife Sanctuary.
Additional information (if any)	None

- **ToR/EC Details:**

Cost of project	INR 416793 Lakhs
Total area of Project	3639.7039 Ha
Height of Dam from River Bed (EL)	9.5 m
Length of Tunnel/Channel	Not Applicable
Details of Submergence area	3389.1129 ha land will be submerged
Types of Waste and quantity of generation during construction/ Operation	Municipal Solid Waste During construction: 70.00 TPA HDPE empty cement bags and plastic containers

	During construction: 5.00 TPA
E-Flows for the Project	E-Flow will be maintained as per norms
Is Projects earlier studies in Cumulative Impact Assessment & Carrying Capacity Studies (CIA&CC) for River in which project located? If yes, then a) E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Basin. b) If not the E-Flows maintain criteria for sustaining river ecosystem	No Not Applicable Not Applicable
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	16000

- **Muck Management Details:**

No. of proposed disposal area/(type of land- Forest/Pvt. land)	The project will generate 1782657 cum of muck which will be re-used in back filling, pitching etc. Hence, no muck disposal site is required. Storage site will be provided.
Muck Management Plan	Details will be provided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Details will be provided in EIA/EMP report

- **Land Area Breakup:**

Private land	1639.7039 ha
Government land	1977.64 ha
Forest Land	22.36 ha
Total Land	3639.7039
Submergence area/Reservoir area	3389.1129 ha
Land required for project components	250.5910 ha
Additional information (if any)	Acquisition of Private Land is under process as per LARR Act, 2013 and application for forest land diversion has been submitted and accepted by PSC-I.

- **Presence of Environmentally Sensitive Areas in the Study Area:**

Forest Land/ Protected Area/ Environmental Sensitivity Zone	Yes/No	Details of Certificate/ letter/Remarks
Reserve Forest/Protected Forest Land	Yes	The construction of barrage is located on Son River which is within the protected area of Son Gharial Wildlife Sanctuary. Beside this, 22.36 ha of forest land is being affected due to submergence and project components such as pipelines, power houses, approaches etc.
National Park	No	
Wildlife Sanctuary	Yes	

- **Court Case Details: Nil**

- **Previous EC Compliance and Necessary Approvals:**

Particulars	Letter no. and date
Certified EC compliance report (if applicable)	Not Applicable
Status of Stage- I FC	Forest Diversion proposal has been accepted by PSC-I and tree enumeration is under progress.
Additional detail (If any)	None
Is FRA (2006) done for FC-I	Under process

- **Miscellaneous:**

Particulars	Details
Details of consultant	Voyants Solutions Private Limited, Gurugram QCI-NABET Certificate No.: NABET/EIA/25-28/RA 0416, Valid up to: 13th March, 2028
Project Benefits	The project has been designed for Gross and Live Storage of approx. 268.90 MCM and approx. 255.746 MCM respectively for providing micro irrigation in Rabi season to 129060 ha CCA for crops of Wheat 1MV and Gram N2RAha. The project will benefit farmers of 653 villages in four districts *viz.*, Rewa, Mauganj, Sidhi and Singrauli. Due to assured irrigation, there shall be an increase in existing crop production by 3900000 quintals during Rabi season and the gap between demand and supply shall reduce. After implementation of

	project net annual benefit due to irrigation shall be approx. INR 108944 lakhs. Besides irrigation, it will cater to drinking and industrial water requirement of 5 MCM each. The project will generate direct & indirect employment opportunities during the construction and operation phase which will significantly contribute to uplift the quality of life of people of the region.
Status of other statutory clearances	The mandatory statutory clearance like Forest clearance for diversion of forest land, recommendation from NBWL are yet to be obtained. Application for both clearances has been submitted.
R&R details	A total of 44 revenue villages of Sihawal, Bahari, Gopad Banas and Churahat tehsil of Sidhi district are being affected due to the proposed project. As per initial assessment, approximately 4,198 families are likely to be affected due to land acquisition. The process of land acquisition and Resettlement & Rehabilitation (R&R) is currently underway, and the updated status will be incorporated in the EIA Report.
Additional detail (If any)	None

41.2.3 The EAC during deliberations noted the following:

The EAC deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA study for Sitapur-Hanumana Micro Irrigation Project (CCA: 1,29,060 Ha) at Village Hatwa, Murtiha, Orani, Etc, Sub-District Hanumana, Sihawal, Chitrangi, Gopadbanas, etc, District Rewa, Sidhi, Singrauli, Mirzapur, Prayagraj and Sonbhadra, Madhya Pradesh and Uttar Pradesh by M/s Naigarhi Micro Irrigation Project, Division- Rewa, MP.

The EAC noted that the present project proposal comes under "B1" category; as per the provisions of the EIA Notification, 2006, as amended as Culturable Command Area (CCA: 129060 ha). However, due to general condition i.e. project area falls within protected area of Son Gharial Wildlife Sanctuary, hence, it requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

As per ESZ notification S.O. 4030 (E) dated 13.12.2016 for the proposed activity is categorised as *'Prohibited (except as otherwise provided) as per applicable laws'*. In this context, it was inquired by the EAC whether the proposed activity is a permissible activity in the Son Gariyal

Sanctuary. The PP informed that the project has been approved by Govt. of Madhya Pradesh vide Letter No: F 22(A)229-15/2024/MPS/31/287 dated 04 March, 2024. The project involves inter-state issue for which the inter-state agreement has been signed between UP, MP and Bihar for sharing of water of Son River. It was also informed that PCCF(WL)&CWLW, M.P. vide their letter no. WL/STO-1/28.28/4525 dated 12.06.2025 granted permission under Section 28 of Wild Life (Protection) Act, 1972 for survey work for making 16 bore holes of 100 mm diameter at 16 locations for the construction of barrage near village Parsauna Khurd Amiliya for Sitapur-Hanumana Micro Pressure Irrigation Project on Son river under Son Gharial Sanctuary.

The EAC observed that the proposed Sitapur-Hanumana Micro-Irrigation Project is proposed by the Water Resources Department, Govt. of Madhya Pradesh is designed for Gross and Live Storage of 268.90 and 255.746 MCM respectively at FRL 234.00 m above MSL for providing micro irrigation in Rabi season to 129060 ha CCA (Wheat 1MV; Gram N2RA ha) covered in 653 villages in four districts viz., Rewa, Mauganj, Sidhi and Singrauli, through pressurized rising mains up to distribution chambers and thereafter by gravity mains. Besides irrigation, it will cater to drinking and industrial water requirement of 5 MCM each. Approximately 108.647 MW of power is required for lifting water through seven vertical turbines.

The Committee observed that in the total land required for the total land requirement for the project is 3639.7039 ha of which 22.36 ha is forest land while 3617.3439 ha is non-forest land. Diversion of forest land for non-forest purpose will be involved for construction of proposed project. However, it was further observed that forest Diversion proposal has been accepted by PSC-I and tree enumeration is under progress. The proposed project is located on Son River within the protected area of Son Gharial Wildlife Sanctuary. Hence, recommendation from NBWL under Wildlife (Protection) Act, 1972 shall be obtained.

41.2.4 The EAC based on the information submitted and as presented during the meeting, recommended the proposal for grant of Standard ToR issued by the Ministry for conducting EIA/EMP study with Public consultation for Sitapur-Hanumana Micro Irrigation Project (CCA: 1,29,060 Ha) at Village Hatwa, Murtiha, Orani, Etc, Sub-District Hanumana, Sihawal, Chitrangi, Gopadbanas, etc, District Rewa, Sidhi, Singrauli, Mirzapur, Prayagraj and Sonbhadra, Madhya Pradesh and Uttar Pradesh by M/s Naigarhi Micro Irrigation Project, Division- Rewa, MP, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR.

[A] Environmental Management and Biodiversity Conservation:

i. The habitat fragmentation effects shall be studied in consultation with WII/expert government research institute in terms of edge effects, increased competition, lower biodiversity, human-wildlife conflict and reduced access to resources emphasising on nesting behaviour of Ghariyals, Indian skimmers and Indian Soft Shell Turtle.

ii. A detailed wildlife conservation plan for Schedule –I species along with mitigation

measures for minimizing the human–animal conflict, duly approved by the Chief Wildlife Warden, be submitted. NBWL recommendations shall be submitted along with EIA/EMP report.

iii. Prepare Environmental Cost Benefit Analysis in terms of ecological damage due to diversion of Forest land/ loss of biodiversity and its impacts on ecosystem, water availability, water uses for irrigation in study area (10 km from periphery of Project components).

iv. A study shall be carried out on impact of project activity on the aquatic and terrestrial ecosystem, within project area classifying the impact zones (highly impact/low impact zone) based on seasonal variations and covering the aspects related to impacts on aquatic ecosystem/ primary productivity due to quantity of water to be lifted and thermal stratification. Accordingly, Environment Management plan shall be prepared.

v. Sampling locations be located to cover villages situated near the reservoir and around boundary of forest area for collection of baseline data and data to be incorporated in EIA/EMP report.

vi. Source of construction material and its distance from the project site along with detailed transportation plan for construction material be elaborated in the EIA EMP report. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report.

vii. In case any wildlife corridor is located within 10 km radius of the project site a detailed study shall be conducted to assess the impact of project on safe movement of wild animals.

viii. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.

ix. Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for forest land involved in the project shall be submitted within stipulated time.

x. Muck disposal site and other components such as Township, site office, Stacking area and batching plant shall be located outside the forest area.

xi. PP shall prepare detailed plan for Plantation of saplings under the tree plantation campaign "Ek Ped Ma Ke Naam".

[B] Socio-economic Study

i. Public Health Delivery Plan including the provisions of drinking water supply for local population shall be in the EIA/EMP Report. Status of the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the need of the labour force and local population.

ii. Declaration by the Project Proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with any State in the project.

iii. 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.

iv. Statement on the commitments (activity-wise) made during public hearing to facilitate the discussion on the CER in compliance of the Ministry's OM F. No. 22-65/2017- IA.III dated 30th September, 2020 shall be submitted.

v. Tentative no. of project affected families shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared.

vi. Details of settlement in 10 km area shall be submitted.

[C] Muck Management:

i. Details of quantity of muck generation component wise and disposal site along with transportation plan and its monitoring to be provided.

ii. Details of Muck Management plan prepared along with estimated cost incorporated in EIA/EMP report.

iii. Techno-economic viability of the project must be recommended from CWC.

[D] Miscellaneous.

i. Pre-DPR Chapters viz. Hydrology, Layout Map Studies duly approved by CWC shall be submitted.

ii. PP shall obtain clearance from the inter-State aspect from the designated authorities as per the procedure.

iii. Undertaking need to submitted on affidavit that regarding no activities has been yet

started on the project site and water allocated to this scheme shall not be diverted to other purpose.

iv. Both capital and recurring expenditure under EMP shall be submitted.

v. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyse the samples.

vi. Arial view video of project site shall be recorded and to be submitted.

vii. As per Ministry's OM dated 1st August, 2013, PP shall submit application to obtain prior approval of Central Government under the Forest Conservation Act, 1980 for diversion of forest land required for such projects will be submitted as soon as the actual extent of forest land required for the project is known to the project proponent, and in any case, within 6 months of issuance of ToR. However, no proposal will be put up before EAC without submission of application for forest clearance, wherever applicable.

Agenda Item No. 41.3

Bargi Open Pumped Storage Hydro Project (1000 MW) at Village Pindrai Mal. (Sahajpuri), Salaiya Mal.(Barangada), Jamthar, Khapa, Newari And Pondi, Sub- District Narayanganj, District Mandla, Madhya Pradesh by M/s Serentica Renewables India 21 Private Limited - Terms of Reference – reg.

[Proposal No. IA/MP/RIV/553405/2025; F. No. J-12011/36/2025-IA.I(R)]

41.3.1: The proposal is for grant of Environmental Clearance (EC) to the project for Bargi Open Pumped Storage Hydro Project (1000 MW) at Village Pindrai Mal. (Sahajpuri), Salaiya Mal.(Barangada), Jamthar, Khapa, Newari And Pondi, Sub- District Narayanganj, District Mandla, Madhya Pradesh by M/s Serentica Renewables India 21 Private Limited.

41.3.2 While considering the proposal, the EAC noted that the project proponent joined the meeting with considerable delay, and due to poor internet connectivity, the members were unable to clearly hear the consultant's presentation. As a result, key technical details and clarifications could not be effectively communicated. Therefore, the Committee decided to defer the proposal to the next meeting to ensure a fair and informed appraisal. The proponent and consultant were advised to ensure stable connectivity in the subsequent EAC meeting.

The EAC decided to ***defer*** the proposal on the above lines.

ANNEXURE I

ATTENDANCE

S. No.	Name of Member	Role
1.	Prof. Govind Chakrapani	Chairman
2.	Dr. Uday Kumar R Y	Member
3.	DR. J. V. Tyagi	Member
4.	Shri Kartik Sapre	Member
5.	Shri Ajay Kumar Lal	Member
6.	Shri Rakesh Goyal	Member Representative of Central Electricity Authority (CEA)
7.	Shri Balram Kumar	Member Representative of Central Water Commission (CWC)
8.	Shri Yogendra Pal Singh	Member Secretary

APPROVAL OF THE CHAIRMAN

---------- Forwarded message ----------
From: chakrapani govind <chakrapani.govind@gmail.com>
To: "Yogendra Pal Singh"<yogendra78@nic.in>
Cc: "Dr Krishnendu Mondal"<krishnendu.mondal@gov.in>
Date: Thu, 23 Oct 2025 17:12:20 +0530
Subject: Re: Draft MOM of the 41st EAC (RVHEP) meeting held on 13.10.2025-reg.
========== Forwarded message ==========

Approved.
Chakrapani

On Thu, 23 Oct, 2025, 4:58 pm Yogendra Pal Singh, <yogendra78@nic.in> wrote:

> Sir,
>
> Please find attached the updated draft MOM of the 41st EAC (RVHEP) meeting held on 13.10.2025 for approval please. The observations made by you and Lal Sir have incorporated suitably and highlighted in yellow.
>
> With Regards,
>
> **Yogendra Pal Singh**
> **Scientist 'F'**
> **Government of India**
> **M/o Environment, Forest and Climate Change**
> **Room No. 236, 2nd Floor, Vayu Wing**
> **Indira Paryavaran Bhawan**
> **Jor Bagh, New Delhi-110003**
> **Tele-fax: 011-20819364**