सत्यमेव जयते

Government of India
Ministry of Environment, Forest and Climate Change
IA Division
(River Valley and Hydroelectric Projects)
***

Minutes of 49TH MEETING Expert Appraisal Committee meeting River Valley and Hydroelectric Projects held from 24/07/2023 to 24/07/2023

Date: 10/08/2023

MoM ID: EC/MOM/EAC/625598/7/2023

Agenda ID: EC/AGENDA/EAC/625598/7/2023

Meeting Venue: N/A

Meeting Mode: Virtual

Date & Time:

24/07/2023	10:30 AM	05:30 PM

1. Opening remarks

The 49th meeting of the re-constituted 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 24th July, 2023 through virtual mode, under the Chairmanship of Dr. A. K. Malhotra list of members present in the meeting.

2. Confirmation of the minutes of previous meeting

Confirmation of the minutes of 48th EAC meeting held on 26th – 27th June, 2023.

3. Details of proposals considered by the committee

Day 1 -24/07/2023

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Expansion of Krishna Koyna Lift Irrigation Project in Sangli and Solapur Districts Maharashtra by **Department of Irrigation** located at **SANGLI,MAHARASHTRA**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/MH/RIV/431564/2023	J-12011/5/2009-IA.I (R)	26/06/2023	River Valley/Irrigation projects (1(c))

3.1.2. Project Salient Features

49.2.1: The proposal is for grant of Environmental Clearance (EC) to the project for expansion of Krishna Koyna Lift Irrigation Project from 1,09,127 to 1,35,627 CCA at Village Jath, Taluka Ananthagiri and Araku Valley, District Sangli & Solapur, Maharashtra by M/s Department of Irrigation, Government of Maharashtra.

49.2.2: The project proponent and the accredited Consultant M/s MITCON Consultancy & Engineering Services Ltd, made a detailed presentation on the salient features of the project and informed that:

1. The proposal is for environmental clearance to the project for Expansion of Krishna Koyna Lift Irrigation Project from 1,09,127 to 1,35,627 CCA at Village Jath, Taluka Ananthagiri and Araku Valley, District Sangli & Solapur, Maharashtra by M/s Department of Irrigation, Government of Maharashtra.
2. The project proposal was considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 40th meeting held during 25.01.2023 and recommended for grant of Terms of References (ToRs) for the Project. The ToR has been issued by Ministry vide letter No. J-12011/5/2009-IA.I (R) dated 6th March 2023.
3. The project is listed at S.N. 1 (C) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).
4. Ministry had issued EC earlier vide letter no. vide letter J-12011/2/89-IA, dt. 01/06/1989 for ICA 68908 ha. and latest approval is for ICA 40219 ha vide letter no. J-12011/5/2009-IA.I, dt. 01/07/2009.
5. Land requirement details are as below

Nature of Land involved in (Ha)	Area Existing in Ha	Additional Area Proposed in Ha	Total Area required after expansion in Ha
Non-Forest Land	3589.71	32.33	3622.04
Forest Land	12.83	2.67	15.5
Total	3602.54	35.00	3637.54

- 10 ha Green belt has been developed. Provision for Ecology & Biodiversity /Green Belt Development is Rs. 755.58 L and will do plantation around project periphery

1. The estimated projectcost is

Existing Project: Rs. 6393.19 Cr.
Proposed Expansion: Rs.1879.17 Cr.
Total Cost: Rs. 8272.36 Cr.

Total capitalcost earmarked towardsenvironmental pollution control measure is Rs. 80189.58 L and the Recurring cost (operation and maintenance) will be about Rs. 109.00 L per annum.

1. Total Employment will be 50 persons as direct & 145 persons indirect afterexpansion. The project proposesto allocate Rs. 400/- L @ of 0.25 % towardsCER (as per Ministry's OM dated 1st May 2018).
2. Thereare 6 Sacred groves/ protected areas.
3. Ambient air quality monitoring was carried out at 13 locations during March 2022 to May 2022 and January 2023 to March 2023 and the baselinedata indicates the ranges of concentrations as: PM_{10} (32.3 to 76.5 µg/m3), $PM_{2.5}$ (10.8 to 25.6.µg/m3), SO_2 (5.9 to 20.9 .µg/m3) and NO_2 (4 to 24.6 µg/m3).
4. Details of Solid waste/ Hazardous waste generation/ Muck and its management

Sr. No	Type of material	Total generated quantity in excavation in cum	Total generated quantity in excavation in Mm^3

1	Soft Soil	190965	0.19
2	Hard murum & soft Rock	448375	0.45
3	Hard Rock	3074668	3.07
	Total	**3714008**	**3.71**
	Muck is in scattered reaches of 386 km & 88333 ha area		

1. Details of Material required for PDN Component, utilization of excavated material and material from borrow area

Sr. No.	Type of material	Required quantity in cum	Excavated material to be utilized	Material from borrow area	Unutilized excavated material
1	Soft	190966	190966	0	
2	Hard Murum and Soft rock	448375	448375	0	
3	Hard Rock	1568106	1568106	0	
	Total in cum	2207447	2207447	**0**	
	Total in mm3	**2.21**	**2.21**	**0**	Nil

1. The total 2.21 Mm^3 material is required for construction of 2.21 Out of 3.71 Mm^3 muck generated, 2.21 Mm3 muck will reutilized for construction. The balance material will be utilized for generation of Crushed Metal (10 mm & 20 mm), crushed sand, Approach roads, Conveyance roads, Pump House backfilling, refilling of low laying area and local bunds of agriculture land.
2. Public Hearing for the proposed project has been conducted by the State Pollution Control Board on 17.05.2023. The main issues raised during the public hearing are related to water scarcity and when all the storages/ tanks in 65 villages of Extended Jath schemes will be filled.
3. The project proponent has informed that they have requested IRO, Nagpur vide letter dated 22.02.2023 and reminder vide dated 05.07.2023 for certified compliance report. The Member Secretary, MPCB vide letter dated 28.07.2023 has forwarded the certified compliance report of existing EC.
4. Status of Litigation Pending against the proposal, if any. – Not any
5. The salient features of the project are as under: -

EAC Meeting Details:

EAC meeting/s	49th Meeting Agenda Id: EC/AGENDA/EAC/625598/7/2023
Date of Meeting/s	18.07.2023
Date of earlier EAC meetings	Meeting ID: IA/RIV/13427/25/01/2023 25 Jan 2023 (15:30 PM to 17:30 PM)

Project details:

Name of the Proposal	**[Proposal No. IA/MH/RIV/431564/2023; F. No. J-12011/5/2009-IA.I (R)]**
Location (Including coordinates)	Longitude: 74º 30’ (East) Latitude: 16º 50’ (North)
Inter- stateissue involved	No
Seismic zone	III

Category details:

Category of the project	A
Provisions	Irrigation to draught prone area Sangli district

Capacity / Cultural command area (CCA)	Krishna Koyna Lift Irrigation Project **Scheme** **ICA in Ha** **CCA in Ha** **GCA in Ha** **Remark** Takari LIS 27,430 44358 52128 Existing EC Mhaisal LIS 81,697 138745 154896 Existing EC Mhaisal Extended Jath LIS 26,500 88333 103921 Proposed Expansion Total **1,35,627** **271436** **310945**
Attracts the General Conditions (Yes/No)	Yes, interstate boundary adjacent to the command area

Electricity generationcapacity:

Powerhouse Installed Capacity	Solar Energy Proposed to Install : 200 MW
Generation of Electricity Annually	200 MW
No. of Units	1
Additional information (if any)	Total electricity requirement will be 138.75 MW however, we are installing solar project having capacity 200 MW

EC Details:

Costof project	Existing Project: Rs. 6393.19 Cr Proposed Expansion: Rs.1879.17 Cr. Total Cost: Rs. 8272.36 Cr.
Totalarea of Project	**Scheme** **ICA in Ha** **CCA in Ha** **GCA in Ha** **Remark** Takari LIS 27,430 44358 52128 Existing EC Mhaisal LIS 81,697 138745 154896 Existing EC Mhaisal Extended Jath LIS 26,500 88333 103921 Proposed Expansion Total

	1,35,627 **271436** **310945**
Height of Dam from River Bed (EL)	NA
Length of Tunnel/Channel	Length of Proposed Tunnel: 1360 m (Raising Main) Length of new pipeline proposed: 190 km Length of Distributaries 386 km (pipe dishnet)
Details of Submergence area	NA
Typesof Waste and quantity of generation during construction/ Operation	**Domestic Waste:** **Name of Waste** **Source** **Qty (TPA)** Dry Waste Labour Colony 0.9 Wet Waste Labour Colony 0.53 **Excavation Waste** **Name of Waste** **Source** **Qty (Tonn)** Muck Excavation & Tunnel Work 85872
E-Flows for the Project	NA
Is Projects earlier studies in Cumulative Impactassessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then 1. E-flow with TOR /Recommendation by EAC as per CIA&CC study of RiverBasin.	NA

1. If not the E-Flows maintain criteria for sustaining riverecosystem.	

Muck Management Details:

No.of proposed disposal area/(type of land-Forest/Pvt. land)	4 numbers of disposal area (Government owned land) 1. Jath LIS Stage I 2. Jath LIS Stage II 3. Jath LIS Stage III 4. Jath LIS Stage IV
MuckManagement Plan	Mode of Disposal : Excavated material will be utilised in filling and road work (IP and SR)
Monitoring mechanism for Muck Disposal	Environmental Management Cell (EMC) shall monitor mechanism of muck disposal

Land Area Breakup:

Presence of Environmentally Sensitiveareas in the study area

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate/ letter/ Remarks**
Reserve Forest/Protected Forest Land	Yes	**Sr. No.** **Name of the Grove** **Deity** **Tahsil** 1 Arewadi Biroba Kavathe Mahankal 2 Banali Banshankari Jath 3 Dandoba Dandnath
National Park	No	
Wildlife Sanctuary	No	

		Miraj 4 Raywadi Lord Shiva Kavathe Mahankal 5 Sagreshwar WLS Lord Shiva Kadegaon 6 Shukacharya Sukhdev Khanpur-Atpadi

Court case details:

Court Case	NA
Additional information (if any)	NA

Affidavit/Undertaking details:

Affidavit/Undertaking	Enclosed
Additional information (if any)	NA

Previous EC compliance and necessary approvals:

Particulars	**Letter no. and date**
Certified EC compliance report(if applicable)	Shri. Shantidas Mukhopadhyay, Assistant Audit Officer and Shri. G.D. Kengale, Sr. Auditor visited for performance audit of Environment Clearance and Post Clearance Monitoring on 22.02.2016 to 26.02.2016 Recently request letter submitted to RO, MOEFCC, Nagpur dated 22.02.2023 and reminder on 05.07.2023 for certified compliance report
Status of Stage- I FC	**FP/MH/Pipeline/431430/2023**

	Submission date 30/05/2023
Additional detail(If any)	NA
IsFRA (2006) donefor FC-I	NA

Miscellaneous

Particulars	**Details**
Details of consultant	MITCON Consultancy & Engineering Services Ltd. Pune **Certificate No.** NABET/EIA/2124/RA 0229_Rev 02 Valid up to Feb 05, 2024
Project Benefits	• The proposed expansion intends to irrigate 26500 ha land of 65 villages of Jat Taluka of Sangli District • GoM in the year 2017 adopted policy of Pipe Distribution Network (PDN). • Provide better consumer experience and improved operational performance with an end-to-end coverage from pump house to water distribution network with minimum water charges cost to farmers. • Improvement in operational performance and reliability in water supply by futuristic interventions enabled through SCADA interventions qualifying smart utilities and digital utilities • Due to PDN, there is increase in water use efficiency, Speedy construction early benefits and more irrigation per Mcft • Solar Energy Proposed to be Installed: 200 MW; (However requirement for Mhaisal Scheme including proposed extension is 97.51 MW and for entire project is 138.75 MW) • **During construction phase** **Permanent employment** No. of permanent employment: 145 Period of employment (days): 1825 **Temporary employment** Temporary / Contractual employment (No. of Man days): 1355 **During operational phase** Permanent employment proposed: 50 Temporary employment proposed: 145
Status of other statutory clearances	**Environmental Clearance** • Letter No. J.-12011/2/89-IA dated June 1, 1989 • Expansion of EC No. J-12011/5/2009-IA.I dated 01.07.2009 **Forest Clearance** • Letter No. 8-549/88-FC dated 08.03.1989 for

	11.10 ha • Letter No.1368 dated 25.07.2014 for 1.7338 ha • Applied for additional forest land • FP/MH/Pipeline/431430/2023 • Submission date 30/05/2023

Public Hearing (PH) Details

Advertisement for PH with date	Marathi News Paper: **Sakal** Dated 15.04.2023 and Corrigendum 27.04. 2023; Pg No.7 English News Paper: **Times of India**, Saturday 15.04.2023
Date of PH	17.05.2023
Venue	Bhima Yatri Niwas Hall, Guddapur, Shri Dhanmmadevi Devasthan Parisar, Taluka-Jath, District – Sangli (416 412) Maharastra at 12.00 noon
Chaired By	(Vijaysinh Patil) Chairman, Environment Public Hearing Committee And Additional District Magistrate, Sangli
Main issues raised during PH	All the participants raised the water scarcity issue by heart. Many years the local people are suffering due to drought
No. of people attended	114

Brief of base line Environment

Particulars	**Details**
Period of baseline data collection/Sampling period.	01.03.20222 to 31.03.2023
(Air, noise, water, land)	The data collected was divided, for analytical convenience, in to the following 3 Seasons: 1. Season 1 – March 2022 to May 2022 2. Season 2 – June 2022 to August 2022* 3. Season 3 – January 2023 to March 2023 * Air and Noise samples not collected
Flora and Fauna of the Project Area	Total 201 floral species were recorded in and around the project area (i.e. 10 km radius study). Among them 39% Herbs, 37 % Trees, 19 % shrubs & climbers were 5% each Faunal Diversity: Mammals: 21 sps. Bird Diversity: 45 sps Fish Diversity: 73 sps Frog: 3 sps Spiders : 70 sps.
Aquatic Ecology etc.	Fish Diversity: 70 sps Frog: 3 sps Aquatic Birds : 11 sps
Brief description on hydrology and water assessment as per the approved Pre-DPR:	Koyna Dam 19.07 TMC Warna dam 6.00 TMC

	Run-off of the Krishna River during Kharif 7.71 **Total** 1. **MC**

Availability of Schedule-I species in study area

Sr. No	Class	Scientific Name	Common Name	IWPA Status	IUCN Status
1.	Mammal	Varanus bengaiensis	Bengal Monitor	Schedule I	EN
2.	Mammal	Canis lupus	Grey Wolf	Schedule I	LC
3.	Mammal	Antilope cervicapra	Blackbuck	Schedule I	LC
4.	Mammal	Hyena hyaena	Striped Hyaena	Schedule I	Not Enlisted
5.	Mammal	Vulpes bengalensis	Bengal Fox	Schedule I	LC
6.	Mammal	Bos gaurus	Gaur/Indian Bison	Schedule I	VU
7.	Mammal	Prionailurus rubiginosus	Rusty Spotted Cat	Schedule I	NT
8.	Mammal	Felis chaus	Jungle Cat	Schedule I	LC
9.	Bird	Pavo cristatus	Indian Peafowl	Schedule I	LC
10.	Bird	Accipiter badius	Shikra	Schedule I	LC
11.	Bird	Haliastur indus	Brahminy Kite	Schedule I	LC
12.	Reptile	Fowlea piscator	Chequered keelback	Schedule I	LC
13.	Reptile	Ptyas mucosa	Dhaman	Schedule I	LC

Details of EMP

SI	Activities	Capital Cost Rs. Lakhs	Recurring Cost (per annum) Rs. Lakhs
1.	Ambient Air Quality	-	16.00
1.	Noise Level	-	10.00
1.	Surface and Ground Water Quality	-	23.00
1.	Soil Quality	-	10.00
1.	Solid/ hazardous wastes	02.00	10.00
1.	Ecology & Biodiversity /Green Belt Development &	755.58	15.00

SI	Activities	Capital Cost Rs. Lakhs	Recurring Cost (per annum) Rs. Lakhs
1.	Health & Safety	-	25.00
1.	Command Area Development Plan	79032.00	-
1.	Corporate Environmental Responsibility	400.00	-
Summary of allocation of fund for EMP			
1.	EMPs: (eg.: Air Environment, Water Environment)	84.00 L	
2.	Capital Cost (in Lakhs)	80189.58 L	
3.	Recurring Cost per annum (In Lakhs)	109.00 L	

3.1.3. Deliberations by the EAC in previous meetings

N/A

3.1.4. Deliberations by the EAC in current meetings

49.2.3: The EAC during deliberations noted the following:

The proposal is for grant of Environmental Clearance (EC) to the project for expansion of Krishna Koyna Lift Irrigation Project from 1,09,127 to 1,35,627 CCA at Village Jath, Taluka Ananthagiri and Araku Valley, District Sangli & Solapur, Maharashtra by M/s Department of Irrigation, Government of Maharashtra.

The project/activity is covered under Category 'A' of item 1 (c) 'River Valley projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and appraised at Central level by the sectoral EAC in the Ministry as category A.

The ToR has been issued by Ministry vide letter No. J-12011/5/2009-IA.I (R) dated 6th March 2023. The proposed expansion involves total 2.67 ha additional forest land, accordingly the PP has submitted the application for obtaining Stage I Forest Clearance on 30.05.2023 vide proposal no. FP/MH/Pipeline/431430/2023.

Public Hearing for the proposed project has been conducted by the State Pollution Control Board on 17.05.2023 at Guddapur, Shri Dhanmmadevi Devasthan Parisar, Taluka-Jath, District – Sangli (416 412) Maharashtra. The main issues raised during the public hearing on water scarcity issues. EAC observed that the PP has proposed to allocate Rs. 400/- L @ of 0.25 % towardsCER (as per Ministry's OM dated 1st May 2018); whereas, the CER is being considered as per provisions of the MoEF&CC Office Memorandum No. 22-65/2017-IA.III dated 30/09/2020 and suitable safeguard measure will be suggested accordingly by the EAC.

The EAC noted that being an expansion proposal compliance status report of earlier EC granted by the Ministry on 01.07.2009 need to be examined in terms of Ministry's OM no. IA3-22/10/2022-IA.III [E177258] dated 08.06.2022. The PP informed that request letter dated 22.02.2023 was submitted to RO, MOEFCC, Nagpur for certified compliance report and reminder was sent on 05.07.2023, however visit of MoEF&CC IRO Officer is awaited. The PP submitted the compliance report certified by the Member Secretary, Maharashtra Pollution Control Board vide letter no. MPCB/JD (WPC)/230728-FTS-0146 dated 28.07.2023. The certified compliance report was circulated to the EAC vide email dated 01.08.2023 for perusal and comments. The EAC observed that compliance report is satisfactory.

The EAC in the present meeting (49th meeting) deliberated on the information submitted (Form 2, EIA/EMP report, kml file, etc.) and as presented along with consultant M/s. MITCON Consultancy & Engineering Services Ltd.

3.1.5. Recommendation of EAC

Recommended

3.1.6. Details of Environment Conditions

3.1.6.1. Specific

Disaster Management	
1.	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. 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.
Environmental Management and Biodiversity Conservation	
1.	Total budgetary provision with respect to Remediation plan, Natural Resources Augmentation Plan and Community Resources Augmentation Plan is Rs. 6.04 crore. Therefore, Project Proponent shall be required to submit a bank guarantee of an amount of Rs. 6.04 crore towards Remediation plan, Natural Resources Augmentation Plan and Community Resources Augmentation Plan with the SPCB prior to the grant of EC.
2.	1. Stage I FC for 2.67 ha of forest land involved in the project shall be submitted prior to 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. Monitoring in all season in the d/s of lifting the water from Krishna River at Takari and Mhaisal. 4. The water for filling of reservoir/ recoupment of evaporation and recirculation losses shall be met from a source other than the rainfall yield of catchment of non-perennial stream/ nallah. 5. 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. 6. The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry. 7. Ambient Air Quality Monitoring Stations for real time data to be installed at project site, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC. 8. Budget for conservation of Schedule I species is very low. The project proponent may be revised the same after consultation with CLWL. 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. 9. 10000 plants shall be planted around the muck disposal area and the survival of plants shall be submitted with the 6 monthly compliance report. 10. Watershed development plan shall be prepared in consultation with ICAR/expert Govt. institute and be implemented within 10 km radius of the projects. Implementation status be submitted in the 6 monthly compliance report.

Miscellaneous:	
1.	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. Bio-Gas plant (Deenn Bandhu Model of Bio-Gas) shall be installed in the Project affected area for Utilizing Cattle waste (Cow Dung) into renewable source of fuel. 3. RO plant shall be installed in the nearby 5 villages and the maintenance shall be done by the project Authorities. 4. Solar panel be provided to the families living in rural areas within 10 km radius of project. 5. The compliance of above conditions shall be monitored by IRO, MoEF&CC through regular site visit twice in a year. 6. 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. 7. An institutional mechanism to be developed to ensure the preference of jobs to PAFs and also a policy for preferential treatment for award of sundry works to the PAFs and their dependents.
Socio economic	
1.	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. The area is ecologically fragile therefore Project Proponent shall ensure that safety measures as mentioned in the EMP shall be fully implemented. 3. 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 populace. 4. 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.

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

Kharauli Pumped Storage Project by **KHARAULI ENERGY PRIVATE LIMITED** located at

SURAJPUR,CHHATTISGARH			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/CG/RIV/432239/2023	J-12011/35/2023-IA.I (R)	04/07/2023	River Valley/Irrigation projects (1(c))

3.2.2. Project Salient Features

49.3.1: The proposal is for grant of Terms of Reference (ToR) to the project for Kharauli Pumped Storage Project of capacity 500 MW in an area of 51.1 ha at Village Kharauli, Tehsil Oudgi, District Surajpur, Chhattisgarh by M/s Kharauli Energy Private Limited.

49.3.2: The Project Proponent and the accredited Consultant M/s R S Envirolink Technologies Pvt. Ltd., made a detailed presentation on the salient features of the project and informed that:

1. The proposal is for ToR for Kharauli Pumped Storage Project located at Village Kharauli, Tehsil Oudgi, District Surajpur, Chhattisgarh by M/s Kharauli Energy Private Limited.
2. The project is listed at S.N. 1 (c) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and is appraised at Central Level by Expert Appraisal Committee (EAC).
3. The estimated project cost is Rs 2374.96 crore. Total capital cost earmarkedtowards environmental pollution control measures will be worked out during EIA study as well as the Recurring cost (operation and maintenance).
4. Tamorpingla WLS is at 4.6 km distance from the project site. Proposed Mahan II SHEP reservoir will be used as Lower Reservoir. Mahan River flows in southwest direction.
5. Details of Solid waste/ Hazardous waste generation/ Muck and its management will be covered in EIA report.
6. Status of Litigation Pending against the proposal, if any. No
7. The salient features of the project are as under:-

EAC Meeting Details:

EAC meeting/s	49th Meeting
Date of Meeting/s	18.07.2023
Date of earlier EAC meetings	Nil

Project details:

Name of the Proposal	Kharauli Pumped Storage Project
Location (Including coordinates)	Upper reservoir: 82°59'20"E; 23°29'03"N (to be constructed new) Lower reservoir: 82°59'09"E; 23°29'34"N (Common with proposed Mahan II SHEP)
Inter- state issue involved	No
Seismic zone	Zone-II

Category details:

Category of the project	A
Provisions	
Capacity / Cultural command area (CCA)	500 MW
Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	Nil

Electricity generation capacity:

Powerhouse Installed Capacity	500 MW
Generation of Electricity Annually	1095.00 MU
No. of Units	3 nos. (3 X 166.66 MW)

ToR Details:

Cost of project	2374.96 Cr.
Total area of Project	51.0 ha
Height of Dam from River Bed (EL)	Upper Dam – 18 m
Length of Tunnel/Channel	2250 m
Details of Submergence area	31.0 ha
Types of Waste and quantity of generation during construction/ Operation	Muck from excavation, solid waste from labour colony and construction waste
E-Flows for the Project	NA
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then 1. E-flow with TOR /Recommendation by 2. EAC as per CIA&CC studyof River Basin. If not the E-Flows maintain criteria for sustaining river ecosystem.	No

Muck Management Details:

No. of proposeddisposal area/ (type of land-Forest/Pvt. land)	2.0 ha Private Land
Muck Management Plan	Will be Provided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Will be Provided in EIA/EMP report

Land Area Breakup:

Government land/Forest Land	No

Submergence area/Reservoir area	31.0 ha
Land required forproject components	20.0 ha
Additional information (if any)	Nil

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	--	Tamorpingla WLS is at 4.6 Km distance from project site.
National Park	--- --	
Wildlife Sanctuary	--- --	

Court case details:

CourtCase	Nil
Additional information (if any)	Nil

Affidavit/Undertaking details:

Affidavit/Undertaking	Enclosed
Additional information (if any)	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	Yet to Apply
Additional detail (If any)	Nil
Is FRA(2006) done for FC-I	Yet to Apply

Miscellaneous

Particulars	**Details**
Details of consultant	M/s. R S Envirolink Technologies Pvt. Ltd. (RSET) (NABET Accredited Consultant Organization) Certificate No : NABET/EIA/2225/RA0274 Validity : August 15, 2025 Contact Person : Mr. Ravinder Bhatia Name of Sector : River Valley and Hydroelectric Projects Category : A

	MoEF Schedule : I(C) Address : 403, Bestech Chambers, Block-B, Sushant Lok Phase I, Sector 43, Gurugram, Haryana - 122009 E-mail : ravi@rstechnologies.co.in Land Line : (0124) 4295383 Cellular : (+91) 9810136853
Project Benefits	• Pumped storage hydropower is a modified use of conventional hydropower technology to store and manage energy or electricity by moving water between an upper and lower reservoir. Currently, pumped storage round-trip or cycle energy efficiencies exceed 80%, comparing favorably to other energy storage technologies and thermal technologies. This effectively shifts, stores, and reuses energy generated until there is corresponding demand for system reserves and variable energy integration. This shifting can also occur to avoid transmission congestion periods, to help more efficiently manage transmission grid, and to avoid potential interruptions to energy supply. This is important because many of the renewable energy resources being developed (e.g., wind and solar) are generated at times of low demand and off-peak energy demand periods are still being met with fossil fuel resources, often at inefficient performance levels that increase the release of greenhouse gas emissions. • Further, pumped storage projects are critical to the national economy and overall energy reliability because it's: ◦ Least expensive source of electricity, not requiring fossil fuel for generation ◦ An emission-free renewable source ◦ Balancing grid for demand driven variations ◦ Balancing generation driven variations ◦ Voltage support and grid stability Apart from this, proposed PSP will also benefit the local community by creating employment opportunities and will result in upliftment of livelihood and socio-economic conditions.
Status of otherstatutory clearances	Forest Clearance - Online application seeking forest diversion for 47.0 Ha after receipt of ToR Approval. Alongside, other statutory clearances (as applicable) from State as well as Central government will be obtained post completion of Detailed Project Report.
R&R details	Details shall be evaluated during EIA/EMP Studies
Additional detail (If any)	Nil

3.2.3. Deliberations by the EAC in previous meetings

N/A

3.2.4. Deliberations by the EAC in current meetings

49.3.3 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 terms of reference to the project for Kharauli Pumped Storage Project of capacity 500 MW in an area of 51.1 ha at Village Kharauli, Tehsil Oudgi, District Surajpur, Chhattisgarh by M/s Kharauli Energy Private Limited**.**

The project/activity is covered under Category A of item 1 (c) 'River Valley & Hydroelectric projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

The EAC noted that the project comes in river itself. The scheme is proposed with an installed capacity of 500 MW having 3 units of 166.66 MW each, located in the Oudgi Taluka of Surajpur district of Chhattisgarh envisages utilization of water from proposed Mahan SHP II reservoir (lower reservoir) and a new upper reservoir, which is to be constructed by making a bund. The water will be diverted through an Intake- HRC-Penstock to a Surface powerhouse to generate 500 MW of power by utilizing Rated turbine head of 233.0 m.

The water requirement of Kharauli PSP (On-Stream Open Loop Project) will be 0.19 TMC (non-consumptive use by recirculation) for establishing 500.00 MW pumped storage components with 6.0 hours storage capacity. Project comprises of Upper reservoir which shall be newly constructed and proposed Mahan SHP II reservoir will be used as lower reservoir.

These two reservoirs will be inter-connected with water conductor system and the generator and turbines installed at the powerhouse.

3.2.5. Recommendation of EAC

Recommended

3.2.6. Details of Terms of Reference

3.2.6.1. Specific

Muck Management/ Disaster Management	
1.	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/ EMPreport. 3. Techno-economic viability of theproject must be recommended from CEA/ CWC
Socio-economic Study	
1.	1. Declaration by the project proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with anyState in the project. 2. 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. 3. 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. 4. Tentative no. of project affected families shall be identified and accordingly appropriate Rehabilitation

	& Resettlement plan shall be prepared. 5. Details of settlement in 10 km area shall be submitted. 6. Details of Tribal population and resettlement plan if any.
Environmental Management & Biodiversity Conservation	
1.	1. Cumulative Impact of project on carrying capacity and sustainability of Reservoir/ nallahs of catchment area, irrigation facilities due to tapping of water for filling reservoir. 2. Action plan for survival of the rivulets in the study area. 3. Alternative sites for various components shall be identified in terms of loss of forest area. 4. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons. 5. 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 for power generation and thermal stratification. Accordingly, Environment Management plan shall be prepared. 6. 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. 7. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir. 8. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with expert Govt. institutions/ Indian Council of Agriculture Research (ICAR)and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report. 9. Source of construction material and its distance from the project site along with detailed transportation plan for construction material. 10. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report. 11. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP. 12. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Govt. institutions/ Indian Council of Agriculture Research (ICAR)and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report. 13. MoU for water uses for the project signed and approved by concerned authority shall be submitted. 14. Environmental matrix during construction and operational phase needs to be submitted. 15. Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used shall be mentioned in the EIA report. 16. Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic species found in the State. 17. Details of Flora and Fauna reported in submergence area, Nos. of tree along with their density and nomenclature of the tree species required to be felled for reservoir creation and other project component. 18. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied. 19. Stage-I Forest Clearance shall be obtained. 20. Explore the possibilities to reduce Forest area for the construction of proposed project, Muck disposal sites should be outside the forest area. 21. Revised the project layout by shifting the muck disposal site to non forest area. 22. Submit environmental cost-benefit analysis and submit detailed alternate site analysis report, details of tree cutting involved in the project and explore the possibility to reduce the forest area.
Miscellaneous	
1.	1. Pre-DPR Chapters viz. Layout Map and Power Potential Studies duly approved by CWC/CEA shall be submitted. 2. 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 otherpurpose.

	3. Both capital and recurring expenditure under EMP shall be submitted. 4. 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. 5. Arial view video ofproject site shall be recorded and to be submitted. 6. Detailed plan to restore wider roads and convert them into narrow upto 10m after construction of the project. 7. Commitment for lifting of water during rainy season.

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.
14.	Different riverine habitats like rapids, pools, side pools and variations in the river substratum bedrocks, rocks, boulders, sand/silt or clay etc. need to be covered under the study
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 follows:	
1.	null
2.	Physical geography, Topography, Regional Geological aspects and structure of the Catchment.
3.	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.
4.	Landslide zone or area prone to landslide existing in the study area should be examined.
5.	Presence of important economic mineral deposit, if any.
6.	Justification for location & execution of the project in relation to structural components (dam /barrage height).
7.	Impact of project on geological environment.
8.	Meteorology (viz. Temperature, Relative humidity, wind speed/direction etc.) to be collected from nearest IMD station.
9.	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.
10.	Existing Noise Levels and traffic density in the study area at 5-6 Locations.
11.	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.
12.	(i) 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.
13.	History of the ground water table fluctuation in the study area.
14.	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, NO2, PO4, CI, 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, Cr-6, total Cr, Cu, Zn, Fe) (6 locations).
15.	Delineation of sub and micro-watersheds, their locations and extent based on the All India Soil and Land Use Survey of India (AISLUS), Department of Agriculture, Government of India. Erosion levels in each micro-watershed and prioritization of micro-watershed through silt yield index (SYI) method of AISLUS
16.	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.
17.	Run off, discharge, water availability for the project, sedimentation rate, etc.
18.	Basin characteristics
19.	Catastrophic events like cloud bursts and flash floods, if any, should be documented.
20.	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.
21.	Set up a G&D monitoring station and a few rain gauge stations in the catchment area for collecting data during the investigation.
22.	Flow series, 10 daily with 90%, 75% and 50% dependable years discharges.
23.	Information on the 10-daily flow basis for the 90 per cent dependable year the flow intercepted at the dam, the flow diverted to the power house and the spill comprising the environmental flow and additional flow towards downstream of the dam for the project may be given.
24.	The minimum environmental flow shall be 20% of the flow of four consecutive lean months of 90% dependable year, 30% of the average monsoon flow. The flow for remaining months shall be in between 20-30%, depending on the site specific requirements. A site specific study shall be carried out by an expert organization.
25.	Sedimentation data available with CWC may be used to find out the loss in storage over the years.
26.	Hydrological studies/data as approved by CWC shall be utilized in the preparation of EIA/EMP report. Actual hydrological annual yield may also be given in the report. Sedimentation data available with CWC may be used to find out the loss in storage over the years.
27.	A minimum of 1 km distance from the tip of the reservoir to the tail race tunnel should be maintained between upstream and downstream projects.
28.	Besides primary studies, review of secondary data/literature published for project area on flora & fauna including RET species shall be reported in EIA/EMP report.

29.	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.
30.	Documentation of all plant species i.e. Angiosperm, Gymnosperm, Pteriodophytes, Bryophytes (all groups).
31.	General vegetation profile and floral diversity covering all groups of flora including lichens and orchids. A species wise list may be provided.
32.	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 quadrates, size of quadrates etc. to be reported within the study area in different ecosystems.
33.	Existence of National park, Sanctuary, Biosphere Reserve etc in the study area, if any, should be detailed.
34.	Economically important species like medicinal plants, timber, fuel wood etc.
35.	Details of endemic species found in the project area.
36.	Flora under RET categories should be documented using International Union for the Conservation of 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.
37.	Cropping pattern and Horticultural Practices in the study area.
38.	Fauna study and inventorisation should be carried out for all groups of animals in the study area. Their present status alongwith Schedule of the species.
39.	Documentation of fauna plankton (phyto and zooplankton), periphyton, benthos and fish should be done and analysed.
40.	Information (authenticated) on Avi-fauna and wildlife in the study area.
41.	Status of avifauna their resident/ migratory/ passage migrants etc.
42.	Documentation of butterflies, if any, found in the area.
43.	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.
44.	Existence of barriers and corridors, if any, for wild animals.
45.	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.
46.	Collection of primary data on agricultural activity, crop and their productivity and irrigation facilities components.
47.	For categorization of sub-catchment 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 catchment.
48.	Documentation of aquatic fauna like macro-invertebrates, zooplankton, phytoplantktons, benthos etc.
49.	Fish and fisheries, their migration and breeding grounds.

50.	Fish diversity composition and maximum length & weight of the measured populations to be studies for estimation of environmental flow.
51.	Conservation status of aquatic fauna.
52.	Sampling for aquatic ecology and fisheries and fisheries must be conducted during three seasons Pre-monsoon (summer), monsoon and winter. Sizes (length & weight) of important fish species need to be collected and breeding and feeding grounds should also be identified along the project site or in vicinity.
53.	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 surroundings population.
54.	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.
55.	Collection of information on sensitive habitat of historical, cultural and religious and ecological importance.
56.	The socio-economic survey/ profile within 10 km of the study area for demographic profile; Economic Structure; Developmental Profile; Agricultural Practices; Infrastructure, education facilities; health and sanitation facilities; available communication network etc.
57.	Documentation of demographic, Ethnographic, Economic Structure and development profile of the area.
58.	Information on Agricultural Practices, Cultural and aesthetic sites, Infrastructure facilities etc.
59.	Information on the dependence of the local people on minor forest produce and their cattle grazing rights in the forest land.
60.	List of all the Project Affected Families with their name, age, educational qualification, family size, sex, religion, caste, sources of income, land & house holdings, other properties, occupation, source of income, house/land to be acquired for the project and house/land left with the family, any other property, possession of cattle, type of house etc.
61.	Special attention has to be given to vulnerable groups like women, aged persons etc. and to any ethnic/indigenous groups that are getting affected by the project.
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 soil, material, vegetation and human health.
4.	Impact of emissions from DG set used for power during the construction, if any, on air environment.
5.	Pollution due to fuel combustion in equipments and vehicles
6.	Fugitive emissions from various sources
7.	Changes in surface and ground water quality
8.	Steps to develop pisci-culture and recreational facilities

9.	Changes in hydraulic regime and downstream flow.
10.	Water pollution due to disposal of sewage
11.	Water pollution from labour colonies/ 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 stream (c) blasting for commissioning of HRT, TRT 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 and green belt.
23.	Impact on fish migration and habitat degradation due to decreased flow of water
24.	Impact on breeding and nesting grounds of animals and fish.
25.	Impact on local community including demographic profile.
26.	Impact on socio-economic status
27.	Impact on economic status.
28.	Impact on human health due to water / vector borne disease
29.	Impact on increase traffic
30.	Impact on Holy Places and Tourism
31.	Impacts of blasting activity during project construction which generally destabilize the land mass and leads to landslides, damage to properties and drying up of natural springs and cause noise population will be studies. Proper record shall be maintained of the baseline information in the post project period.
32.	Positive and negative impacts likely to be accrued due to the project are listed.
Environmental Management Plan	

1.	Biodiversity and Wildlife Conservation and Management Plan for the conservation and preservation of rare, endangered or endemic floral/faunal species or some National Park/Sanctuary/ Biosphere Reserve or other protected area is going to get affected directly or indirectly by construction of the project, then suitable conservation measures should be prepared in consultation with the State Forest Department and with the physical and financial details. Suitable conservation techniques (in-situ/ ex-situ) will be proposed under the plan and the areas where such conservation is proposed will be marked on a project layout map.
2.	Compensatory Afforestation shall be prepared by the State Forest Department in lieu of the forest land proposed to be diverted for construction of the project as per the Forest (Conservation) Act, 1980. Choice of plants for afforestation should include native and RET species, if any. This will be a part of the forest clearance proposal.
3.	Fisheries Conservation and Management Plan - a specific fisheries management measures should be prepared for river and reservoir. If the construction of fish ladder/ fish-way etc. is not feasible then measures for reservoir fisheries will be proposed. The plan will detail out the number of hatcheries, nurseries, rearing ponds etc. proposed under the plan with proper drawings. If any migratory fish species is getting affected then the migratory routes, time/season of upstream and downstream migration, spawning grounds etc will be discussed in details.
4.	Green Belt Development Plan along the periphery of the reservoir, approach roads around the colonies and other project components, local plant species must be suggested with physical and financial details. A layout map showing the proposed sites for developing the green belt should be prepared.
5.	Environmental Monitoring Programme to monitor the mitigatory measures implemented at the project site is required will be prepared. Provision for Environment Management Cell should be made. The plan will spell out the aspects required to be monitored, monitoring indicators/parameters with respect to each aspect and the agency responsible for the monitoring of that particular aspect throughout the project implementation.
6.	Catchment Area Treatment (CAT) Plan should be prepared micro-watershed wise. Identification of free draining/ directly draining catchment based upon Remote Sensing and Geographical Information System (GIS) methodology and Sediment Yield Index (SYI) method of AISLUS, Deptt. of Agriculture, Govt. of India coupled with ground survey. Areas or watersheds falling under 'very severe' and 'severe' erosion categories should be provided and required to be treated. Both biological as well as engineering measures should be proposed in consultation with State Forest Department for areas requiring treatment. Year-wise schedule of work and monetary allocation should be provided. Mitigation measures to check shifting cultivation in the catchment area with provision for alternative and better agricultural practices should be included.
7.	Study of Design Earthquake Parameters: A site specific study of earthquake parameters should be done. Results of the site specific earthquake design parameters should be approved by National Committee of Seismic Design Parameters, Central Water Commission (NCSDP), New Delhi.
8.	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. To identify inundation areas, population and structures likely to be affected due to catastrophic floods in the event of dam failure. DMP will be prepared with the help of Dam Break Analysis. Maximum water level that would be attained at various points on the downstream in case of dam break will be marked on a detailed contour map of the downstream area, to show the extent of inundation. The action plan will include Emergency Action and Management plan including measures like preventive action notification, warning procedure and action plan for co-ordination with various authorities.
9.	Reservoir Rim Treatment Plan for stabilization of land slide / land slip zones, if any, around the reservoir periphery is to be prepared based on detailed survey of geology of the reservoir rim area. Suitable engineering and biological measures for treatment of identified slip zones to be suggested with physical and financial schedule. Layout map showing the landslide/landslip zones shall be prepared and appended in the chapter.
10.	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.
11.	Restoration Plan for Quarry Sites and landscaping of colony areas, working areas, roads etc. Details of the coarse/fine aggregate/clay etc. required for construction of the project and the rock/clay quarries/river shoal sites identified for the project should be discussed along-with the Engineering and Biological measures proposed for their restoration with physical and financial details. Layout map showing quarry sites vis-à-vis other project components, should be prepared.
12.	Resettlement and Rehabilitation Plan needed to be prepared on the basis of findings of the socio- economic survey coupled with the outcome of public consultation held. The R&R package shall be prepared after consultation with the representatives of the project affected families and the State Government. Detailed budgetary estimates are to be provided. Resettlements site should be identified. The plan will also incorporate community development strategies.
13.	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 populace.
14.	Local Area Development Plan to be formulated in consultation with the Revenue Officials and Village Pancahayats. Appropriate schemes shall be prepared under EMP for the Local Area Development Plan with sufficient financial provisions.
15.	Labour Management Plan for their Health and Safety.
16.	Sanitation and Solid waste management plan for domestic waste from colonies and labour camps etc.
17.	Energy Conservation Measures for the work force during construction with physical and financial details. Alternatives will be proposed for the labour force so that the exploitation of the natural resource (wood) for the domestic and commercial use is curbed.
18.	Environmental safeguards during construction activities including Road Construction.
19.	A summary of Cost Estimates for all the plans, cost for implementing all the Environmental Management Plans.
20.	Water, Air and 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

Gond Major Irrigation Project by **EEWRD SINGRAULI** located at **SINGRAULI,MADHYA PRADESH**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/MP/RIV/435931/2023	J-12011/36/2023-IA.I (R)	07/07/2023	River Valley/Irrigation projects (1(c))

3.3.2. Project Salient Features

49.5.1: The proposal is for grant of ToR to the project for Gond Major Irrigation Project (20.40 MW and CCA: 41250) at Village Jhara and Gotra, Tehsil Sarai and Kushmi, District Singrauli and Sidhi by M/s Water Resource Department, Govt. of Madhya Pradesh**.**

49.5.2: The Project Proponent and the accredited Consultant M/s. R S Envirolink technologies Pvt. Ltd., made a detailed presentation on the salient features of the project and informed that:

1. The proposal is for ToR to the project Gond Major Irrigation Project (20.40 MW and CCA: 41250) located at Village Jhara and Gotra, Tehsil Sarai and Kushmi, District Singrauli and Sidhi, Madhya Pradesh by M/s. Water Resource Department, Govt. of Madhya Pradesh
2. The project proposal was considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 9th meeting held during 24/10/2017 and recommended for grant of Terms of References (ToRs) for the Project. The ToR has been issued by Ministry vide letter No. J-1201/33/2017-IA-I(R); 29/11/2017.
3. The project is listed at S.N. 1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and is appraised at Central Level by Expert Appraisal Committee (EAC).
4. The estimated project cost is Rs. 1316.00 Crore. Total capital cost earmarked towards environmental pollution control measures will be worked out during EIA study as well as the Recurring cost (operation and maintenance).
5. There is Sanjay Dubri Tiger Reserve within 10 km distance from the project site. River Gopad is flowing at a distance of 0 km in western and northern direction.
6. Details of Solid waste/ Hazardous waste generation/ Muck and its management will be incorporated in EIA/EMP report.
7. Status of Litigation Pending against the proposal, if any. No
8. The salient features of the project are as under:-

Project details:

Name of the Proposal	Gond Major Irrigation Project
Location (Including coordinates)	Songarh/ Jhara Barrage is located near Jhara village, Sarai Tehsil, Singrauli district of Madhya Pradesh with the geographical latitude of 23°59' 21.69" N and longitude of 82°6' 8.03" E. The Gotra Barrage is located near Gotra village, Kushmi Tehsil, Sidhi district of Madhya Pradesh with the geographical latitude of 24°5' 24.49" N and longitude of 81°54' 21.15" E.
Inter- stateissue involved	No
Seismic zone	Zone -III

Category details:

Category of the project	1(c) River Valley Projects
Provisions	
Capacity / Cultural commandarea (CCA)	41250 ha
Attracts theGeneral Conditions (Yes/No)	Yes
Additional information (if any)	Nil

Electricity generation capacity:

Powerhouse Installed Capacity	20.40 MW
Generation of Electricity Annually	Captive use only
No. of Units	4 nos. (5.10 MW each)
Additional information (if any)	Nil

ToR Details:

Cost of project	1316.00 Cr.
Total area of Project	2380.104 ha
Height of Dam from River Bed (EL)	Songarh Barrage – 20.0 m Gotra Barrage – 16.0m
Length of Tunnel/Channel	0 km
Details of Submergence area	2327.104 ha
Types of Waste and quantity of generation during construction/ Operation	Muck from excavation, solid waste from labour colony and construction waste
E-Flows for the Project	Water will be stored during monsoon and diverted for irrigation. Available annual 75% dependable total yield at Songarh Barrage and Gotra Barrage is 678.642 MCM and 878.136 MCM respectively. There are 7 upstream projects for which water allocation (u/s commitment) is 5.76 MCM. Hence net available yield at Songarh Barrage and Gotra Barrage is 672.882 MCM and 872.376 MCM respectively. Approximately 95% of the yield is contributed by monsoon flow and only about 5% yield will be come from non-monsoon period. Therefore, to mitigate the impact of reduced flow or drying up of the river downstream of the dam; the project is designed with live storage/proposed utilization of 75.66 MCM and 43.30 MCM at Songarh Barrage and Gotra Barrage respectively, and remaining water from monsoon contribution will be continuously discharged for downstream and upstream users. The quantum works out to be 597.222 MCM and 829.076 MCM at Songarh Barrage and Gotra Barrage respectively. Almost 89% and 95% of the water will be available at Songarh Barrage and Gotra Barrage respectively in pre-project conditions. Therefore, no additional environment flow is required to be released during monsoon period. To ensure that downstream conditions do not change substantially during non-monsoon period, entire discharge of non-monsoon period is recommended to be released as environmental flow.
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then 1. E-flow with TOR /Recommendation by EAC as per CIA&CC study of RiverBasin. 2. If not the E-Flows maintain criteria for sustaining river ecosystem.	No

Muck Management Details:

No. of proposeddisposal area/ (type of land-Forest/Pvt. land)	Not applicable as entire muck generated will be utilized in the constriction of earthen dams. If any quantity remains unutilized, same will be used for the construction of approach road.

Muck Management Plan	Will be studied in detail and will be provided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Will be studied in detail and will be provided in EIA/EMP report

Land Area Breakup:

Private Land	1110.824 ha
Government land/Forest Land	1093.710 ha Govt. Land/ 175.570 ha Forest Land
Submergence area/Reservoir area	2327.104 ha
Land required forproject components	53.0 ha
Additional information (if any)	Total land required – 2380.104 ha

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	No	
National Park	Yes (Tiger Reserve)	Songarh Barrage is at a distance of 0.34 km from the core zone and its entirely inside the buffer zone of Sanjay Tiger Reserve. Distance between Gotra Barrage and core and buffer zone of Sanjay Tiger Reserve is 13 km and 2 km respectively. Letter No. ../2023/913 dated 13.02.2023 from the office of CF, Sanjay Tiger Reserve provides the above information.
Wildlife Sanctuary	Yes	As above

Court case details:

Court Case	Nil
Additional information (if any)	Nil

Affidavit/Undertaking details:

Affidavit/Undertaking	Enclosed
Additional information (if any)	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	Proposal No. FP/MP/IRRIG/23033/2016. The

	proposal is pending with user agency as it is under revision
Additional detail (If any)	Nil
Is FRA(2006) done for FC-I	Yes (as per earlier forest proposal)

Miscellaneous

Particulars	Details
Details of consultant	M/s. R S Envirolink Technologies Pvt. Ltd. (RSET) (NABET Accredited Consultant Organization) Certificate No : NABET/EIA/2225/RA0274 Validity : August 15, 2025 Contact Person : Mr. Ravinder Bhatia Name of Sector : River Valley and Hydroelectric Projects Category : A MoEF Schedule : I(C) Address : 403, Bestech Chambers, Block-B, Sushant Lok Phase I, Sector 43, Gurugram, Haryana - 122009 E-mail : ravi@rstechnologies.co.in Land Line : (0124) 4295383 Cellular : (+91) 9810136853
Project Benefits	On completion of the Project the following benefits can be derived: • Annual Rabi irrigation of 41250 Ha. • Rise in sub soil water level in the project area. • Development of fisheries in the reservoir. • Production of crops will increase Hence per capita income will increase. • Employment to local labour largely tribes during construction period.
Status of other statutory clearances	**Forest Clearance:** Online application seeking forest diversion for 383.868 was submitted on 23.10.2017 (Proposal No. FP/MP/IRRIG/23033/2016) As the location of the proposal is revised and forest lan requirement has been reduced to 175.57ha, application seeking forest diversion will also be revised. Alongside, other statutory clearances (as applicable) from State as well as Central government will be obtained post completion of Detailed Project Report.
R&R details	522 families residing in 13 villages have been identified as project affected families. Out of the 522 families, 348 families are likely to be displaced. The process of R&R is yet to be initiated. Detailed R&R plan will be Provided in EIA/EMP report
Additional detail(If any)	Nil

3.3.3. Deliberations by the EAC in previous meetings

N/A

3.3.4. Deliberations by the EAC in current meetings

49.5.3 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 terms of reference to the project for Gond Major Irrigation Project (20.40 MW and CCA: 41250) at Village Jhara and Gotra, Tehsil Sarai and Kushmi, District Singrauli and Sidhi by M/s Water

Resource Department, Govt. of Madhya Pradesh**.**

The project/activity is covered under Category A of item 1 (c) 'River Valley & Hydroelectric projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

3.3.5. Recommendation of EAC

Recommended

3.3.6. Details of Terms of Reference

3.3.6.1. Specific

Miscellaneous.	
1.	1. Pre-DPR Chapters viz. Layout Map and Power Potential Studies duly approved by CWC/CEA shall be submitted. 2. 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. 3. Both capital and recurring expenditure under EMP shall be submitted. 4. 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. 5. Arial view video of project site shall be recorded and to be submitted.
Muck Management/ Disaster Management	
1.	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 CEA/ CWC.
Socio-economic Study	
1.	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 populace. 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 & Biodiversity Conservation	

1.	1. A study shall be carried out on impact of wildlife due to construction of Gotra and Songarh Barrage, accordingly Wildlife Management plan shall be prepared in consultation with State Forest Department and be incorporated in the EIA/EMP report. 2. Detailed wildlife conservation plan for Schedule –I species shall be prepared and incorporated in the EIA/EMP report. 3. Impact on the funal diversity based on the hydrological alteration due to construction of barrage shall be studied. 4. Cumulative Impact of project on carrying capacity and sustainability of Reservoir/ nalahs of catchment area / due to tapping construction of Barrage in the Gopad river. 5. Alternative sites for various project components shall be identified in terms of loss of forest area. 6. Certificate from Chief Wildlife Warden shall be submitted mentioning that project boundary is located outside the Eco Sensitive Zone (ESZ). 7. Water availability studies/hydrological regime study of various seasons be conducted and approved by CWC. 8. Impact zone be decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons. 9. Scope of watershed development in 10 km radius of the project shall be studied in consultation with Indian Council of Agriculture Research (ICAR)/ expert Govt. institutions and accordingly Watershed Management Plan shall be prepared with time schedule of implementation in the project catchment area. 10. Prepare Environmental Cost Benefit Analysis in terms of loss of forest ecosystem due to diversion of Forest land/loss of biodiversity and its impacts on ecosystem, water availability, water uses for generation of hydro power and Ecological flows in the stream/Nallah and Gopad river in study area 10 km from periphery of Project components. 11. 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 for power generation and thermal stratification. Accordingly, Environment Management plan shall be prepared. 12. 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. 13. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir. 14. Source of construction material and its distance from the project site along with detailed transportation plan for construction material. 15. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report. 16. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP. 17. MoU for water uses for the project signed and approved by concerned authority shall be submitted. 18. Environmental matrix during construction and operational phase needs to be submitted. 19. Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used shall be mentioned in the EIA report 20. 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. 21. Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic species found in the State. 22. Details of Flora and Fauna reported in submergence area, Nos. of tree along with their density and nomenclature of the tree species required to be felled for reservoir creation and other project component. 23. Impact on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied. 24. Explore the possibilities to reduce Forest area for the construction of proposed project, Muck disposal sites should be outside the forest area. 25. Action plan for survival of the rivulets located in the study area.

3.3.6.2. 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.
14.	Different riverine habitats like rapids, pools, side pools and variations in the river substratum bedrocks, rocks, boulders, sand/silt or clay etc. need to be covered under the study
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 follows:	
1.	null
2.	Physical geography, Topography, Regional Geological aspects and structure of the Catchment.
3.	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.
4.	Landslide zone or area prone to landslide existing in the study area should be examined.
5.	Presence of important economic mineral deposit, if any.
6.	Justification for location & execution of the project in relation to structural components (dam /barrage height).
7.	Impact of project on geological environment.
8.	Meteorology (viz. Temperature, Relative humidity, wind speed/direction etc.) to be collected from nearest IMD station.
9.	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.
10.	Existing Noise Levels and traffic density in the study area at 5-6 Locations.
11.	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.
12.	(i) 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.
13.	History of the ground water table fluctuation in the study area.
14.	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, NO2, PO4, CI, 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, Cr-6, total Cr, Cu, Zn, Fe) (6 locations).
15.	Delineation of sub and micro-watersheds, their locations and extent based on the All India Soil and Land Use Survey of India (AISLUS), Department of Agriculture, Government of India. Erosion levels in each micro-watershed and prioritization of micro-watershed through silt yield index (SYI) method of AISLUS

16.	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.
17.	Run off, discharge, water availability for the project, sedimentation rate, etc.
18.	Basin characteristics
19.	Catastrophic events like cloud bursts and flash floods, if any, should be documented.
20.	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.
21.	Set up a G&D monitoring station and a few rain gauge stations in the catchment area for collecting data during the investigation.
22.	Flow series, 10 daily with 90%, 75% and 50% dependable years discharges.
23.	Information on the 10-daily flow basis for the 90 per cent dependable year the flow intercepted at the dam, the flow diverted to the power house and the spill comprising the environmental flow and additional flow towards downstream of the dam for the project may be given.
24.	The minimum environmental flow shall be 20% of the flow of four consecutive lean months of 90% dependable year, 30% of the average monsoon flow. The flow for remaining months shall be in between 20-30%, depending on the site specific requirements. A site specific study shall be carried out by an expert organization.
25.	Sedimentation data available with CWC may be used to find out the loss in storage over the years.
26.	Hydrological studies/data as approved by CWC shall be utilized in the preparation of EIA/EMP report. Actual hydrological annual yield may also be given in the report. Sedimentation data available with CWC may be used to find out the loss in storage over the years.
27.	A minimum of 1 km distance from the tip of the reservoir to the tail race tunnel should be maintained between upstream and downstream projects.
28.	Besides primary studies, review of secondary data/literature published for project area on flora & fauna including RET species shall be reported in EIA/EMP report.
29.	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.
30.	Documentation of all plant species i.e. Angiosperm, Gymnosperm, Pteriodophytes, Bryophytes (all groups).
31.	General vegetation profile and floral diversity covering all groups of flora including lichens and orchids. A species wise list may be provided.
32.	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 quadrates, size of quadrates etc. to be reported within the study area in different ecosystems.
33.	Existence of National park, Sanctuary, Biosphere Reserve etc in the study area, if any, should be detailed.
34.	Economically important species like medicinal plants, timber, fuel wood etc.
35.	Details of endemic species found in the project area.

36.	Flora under RET categories should be documented using International Union for the Conservation of 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.
37.	Cropping pattern and Horticultural Practices in the study area.
38.	Fauna study and inventorisation should be carried out for all groups of animals in the study area. Their present status alongwith Schedule of the species.
39.	Documentation of fauna plankton (phyto and zooplankton), periphyton, benthos and fish should be done and analysed.
40.	Information (authenticated) on Avi-fauna and wildlife in the study area.
41.	Status of avifauna their resident/ migratory/ passage migrants etc.
42.	Documentation of butterflies, if any, found in the area.
43.	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.
44.	Existence of barriers and corridors, if any, for wild animals.
45.	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.
46.	Collection of primary data on agricultural activity, crop and their productivity and irrigation facilities components.
47.	For categorization of sub-catchment 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 catchment.
48.	Documentation of aquatic fauna like macro-invertebrates, zooplankton, phytoplantktons, benthos etc.
49.	Fish and fisheries, their migration and breeding grounds.
50.	Fish diversity composition and maximum length & weight of the measured populations to be studies for estimation of environmental flow.
51.	Conservation status of aquatic fauna.
52.	Sampling for aquatic ecology and fisheries and fisheries must be conducted during three seasons Pre-monsoon (summer), monsoon and winter. Sizes (length & weight) of important fish species need to be collected and breeding and feeding grounds should also be identified along the project site or in vicinity.
53.	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 surroundings population.
54.	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.
55.	Collection of information on sensitive habitat of historical, cultural and religious and ecological importance.
56.	The socio-economic survey/ profile within 10 km of the study area for demographic profile; Economic

	Structure; Developmental Profile; Agricultural Practices; Infrastructure, education facilities; health and sanitation facilities; available communication network etc.
57.	Documentation of demographic, Ethnographic, Economic Structure and development profile of the area.
58.	Information on Agricultural Practices, Cultural and aesthetic sites, Infrastructure facilities etc.
59.	Information on the dependence of the local people on minor forest produce and their cattle grazing rights in the forest land.
60.	List of all the Project Affected Families with their name, age, educational qualification, family size, sex, religion, caste, sources of income, land & house holdings, other properties, occupation, source of income, house/land to be acquired for the project and house/land left with the family, any other property, possession of cattle, type of house etc.
61.	Special attention has to be given to vulnerable groups like women, aged persons etc. and to any ethnic/indigenous groups that are getting affected by the project.
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 soil, material, vegetation and human health.
4.	Impact of emissions from DG set used for power during the construction, if any, on air environment.
5.	Pollution due to fuel combustion in equipments and vehicles
6.	Fugitive emissions from various sources
7.	Changes in surface and ground water quality
8.	Steps to develop pisci-culture and recreational facilities
9.	Changes in hydraulic regime and downstream flow.
10.	Water pollution due to disposal of sewage
11.	Water pollution from labour colonies/ 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 stream (c) blasting for commissioning of HRT, TRT 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 and green belt.
23.	Impact on fish migration and habitat degradation due to decreased flow of water
24.	Impact on breeding and nesting grounds of animals and fish.
25.	Impact on local community including demographic profile.
26.	Impact on socio-economic status
27.	Impact on economic status.
28.	Impact on human health due to water / vector borne disease
29.	Impact on increase traffic
30.	Impact on Holy Places and Tourism
31.	Impacts of blasting activity during project construction which generally destabilize the land mass and leads to landslides, damage to properties and drying up of natural springs and cause noise population will be studies. Proper record shall be maintained of the baseline information in the post project period.
32.	Positive and negative impacts likely to be accrued due to the project are listed.
Environmental Management Plan	
1.	Biodiversity and Wildlife Conservation and Management Plan for the conservation and preservation of rare, endangered or endemic floral/faunal species or some National Park/Sanctuary/ Biosphere Reserve or other protected area is going to get affected directly or indirectly by construction of the project, then suitable conservation measures should be prepared in consultation with the State Forest Department and with the physical and financial details. Suitable conservation techniques (in-situ/ ex-situ) will be proposed under the plan and the areas where such conservation is proposed will be marked on a project layout map.
2.	Compensatory Afforestation shall be prepared by the State Forest Department in lieu of the forest land proposed to be diverted for construction of the project as per the Forest (Conservation) Act, 1980. Choice of plants for afforestation should include native and RET species, if any. This will be a part of the forest clearance proposal.
3.	Fisheries Conservation and Management Plan - a specific fisheries management measures should be prepared for river and reservoir. If the construction of fish ladder/ fish-way etc. is not feasible then measures for reservoir fisheries will be proposed. The plan will detail out the number of hatcheries, nurseries, rearing ponds etc. proposed under the plan with proper drawings. If any migratory fish species is getting affected then the migratory routes, time/season of upstream and downstream migration, spawning grounds etc will be discussed in details.

4.	Green Belt Development Plan along the periphery of the reservoir, approach roads around the colonies and other project components, local plant species must be suggested with physical and financial details. A layout map showing the proposed sites for developing the green belt should be prepared.
5.	Environmental Monitoring Programme to monitor the mitigatory measures implemented at the project site is required will be prepared. Provision for Environment Management Cell should be made. The plan will spell out the aspects required to be monitored, monitoring indicators/parameters with respect to each aspect and the agency responsible for the monitoring of that particular aspect throughout the project implementation.
6.	Catchment Area Treatment (CAT) Plan should be prepared micro-watershed wise. Identification of free draining/ directly draining catchment based upon Remote Sensing and Geographical Information System (GIS) methodology and Sediment Yield Index (SYI) method of AISLUS, Deptt. of Agriculture, Govt. of India coupled with ground survey. Areas or watersheds falling under 'very severe' and 'severe' erosion categories should be provided and required to be treated. Both biological as well as engineering measures should be proposed in consultation with State Forest Department for areas requiring treatment. Year-wise schedule of work and monetary allocation should be provided. Mitigation measures to check shifting cultivation in the catchment area with provision for alternative and better agricultural practices should be included.
7.	Study of Design Earthquake Parameters: A site specific study of earthquake parameters should be done. Results of the site specific earthquake design parameters should be approved by National Committee of Seismic Design Parameters, Central Water Commission (NCSDP), New Delhi.
8.	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. To identify inundation areas, population and structures likely to be affected due to catastrophic floods in the event of dam failure. DMP will be prepared with the help of Dam Break Analysis. Maximum water level that would be attained at various points on the downstream in case of dam break will be marked on a detailed contour map of the downstream area, to show the extent of inundation. The action plan will include Emergency Action and Management plan including measures like preventive action notification, warning procedure and action plan for co-ordination with various authorities.
9.	Reservoir Rim Treatment Plan for stabilization of land slide / land slip zones, if any, around the reservoir periphery is to be prepared based on detailed survey of geology of the reservoir rim area. Suitable engineering and biological measures for treatment of identified slip zones to be suggested with physical and financial schedule. Layout map showing the landslide/landslip zones shall be prepared and appended in the chapter.
10.	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.
11.	Restoration Plan for Quarry Sites and landscaping of colony areas, working areas, roads etc. Details of the coarse/fine aggregate/clay etc. required for construction of the project and the rock/clay quarries/river shoal sites identified for the project should be discussed along-with the Engineering and Biological measures proposed for their restoration with physical and financial details. Layout map showing quarry sites vis-à-vis other project components, should be prepared.
12.	Resettlement and Rehabilitation Plan needed to be prepared on the basis of findings of the socio- economic survey coupled with the outcome of public consultation held. The R&R package shall be prepared after consultation with the representatives of the project affected families and the State Government. Detailed budgetary estimates are to be provided. Resettlements site should be identified. The plan will also incorporate community development strategies.
13.	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 populace.

14.	Local Area Development Plan to be formulated in consultation with the Revenue Officials and Village Pancahayats. Appropriate schemes shall be prepared under EMP for the Local Area Development Plan with sufficient financial provisions.
15.	Labour Management Plan for their Health and Safety.
16.	Sanitation and Solid waste management plan for domestic waste from colonies and labour camps etc.
17.	Energy Conservation Measures for the work force during construction with physical and financial details. Alternatives will be proposed for the labour force so that the exploitation of the natural resource (wood) for the domestic and commercial use is curbed.
18.	Environmental safeguards during construction activities including Road Construction.
19.	A summary of Cost Estimates for all the plans, cost for implementing all the Environmental Management Plans.
20.	Water, Air and Noise Management Plans to be implemented during construction and post-construction periods.

3.4. Agenda Item No 4:

3.4.1. Details of the proposal

Chittamvalasa Pumped Storage Hydro-Electric Project (800 MW) by **NEW AND RENEWABLE ENERGY DEVELOPMENT CORPORATION OF ANDHRA PRADESH LTD (NREDCAP)** located at **ALLURI SITHARAMA RAJU,ANDHRA PRADESH**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/AP/RIV/432822/2023	J-12011/37/2023-IA.I (R)	19/06/2023	River Valley/Irrigation projects (1(c))

3.4.2. Project Salient Features

49.6.1: The proposal is for grant of Terms of References (ToR) to the project for Chittamvalasa Pumped Storage Hydro-Electric Project (800 MW) in an area of 366.79 ha at Village Kusumavalasa, Mandal Hukumpeta, District Alluri Sitarama Raju, Andhra Pradesh by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd. (NREDCAP).

49.6.2: The Project Proponent and the accredited Consultant M/s. Aarvee Asociates, Architects and Consultants Private Limited, made a detailed presentation on the salient features of the project and informed that:

1. The project is listed at S.No:1(C) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).
2. **Background of the Project**: Chittamvalasa Pumped Storage Project (GPSP) is an Off-Stream Closed Loop Pumped Storage development, proposed with an installed capacity of 800MW/4964 MWH. The proposed Chittamvalasa PSP is located near Kusumavalasa village in Hukumpeta Mandal of Alluri Sitarama Raju district of Andhra Pradesh. The upper dam is located near Kusumavalasa village in Hukumpeta Mandal of Alluri Sitarama Raju district, Andhra Pradesh state having a geographical Latitude 18°12'38.91"N and Longitude 82°53'11.09"E. The lower dam is located near Kusumavalasa village in Hukumpeta Mandal of Alluri Sitarama Raju district, Andhra Pradesh state with the geographical Latitude 18°11'22.01"N and Longitude 82°54'23.11"E.
3. **Land requirement:** The total land required for construction of project components, reservoir areas, muck

dumping, construction camps and colony, etc., works out to be **366.79 ha (366.79 ha Private Land**).

4. The Project comprises of development of upper & lower reservoirs with a gross storage capacity of 8.140 MCM (0.287TMC) & 10.493 MCM (0.371 TMC) respectively, out of which upper reservoir to be constructed with

maximum dam height of 57 m (from river bed) to create the desired storage capacity while the lower reservoir will have maximum height of 61 m (from river bed) constructed at the downhill. The land required for the proposed upper reservoir and intake is **91.02** ha and the land required for the proposed lower reservoir and intake is **137.97** ha

1. The one-time filling of the PSP reservoir will be carried out from **Raiwada Reservoir,** which is about 6.0 Kms from the PSP lower reservoir. The scheme of operation for the project is with 6.2 Hours of peak power per day and 7.04 Hours for pumping back the water to the upper reservoir. Water will be used cyclically for energy storage and discharge. Evaporation losses, if any will be recouped periodically.
2. **Alternative studies**: Considering the more R&R issue in Alternative-2, Alternative-1 seems more feasible as compared to Alternative-2. Based on the comparative study, Alternative-1 is more feasible compared to Alternative-2. Considering Techno-Economic parameters, Alternative-1A with underground powerhouse is selected for further study

Hence, **Alternative-1 is considered for further study.**

1. Total land area is 36,67,900 m^2. Greenbelt will be develop in an area of 7.90 % i.e. 2,90,000 m^2 out of total area of the project.
2. Generation of Power During Peak Hours: The Project will generate 800 MW of peak power for about 6.2 hours by utilizing a design discharge of 332.96 cumec with a rated head of 273.23 m and will utilize 880 MW to pump 7.417 MCM (0.262 TMC) of water to the upper reservoir in 7.04 hours
3. **Project Cost**: The estimated project cost is Rs.3,677.79 Crores. Total Employment will be 1,500 persons as direct & indirect.
4. **Environmental Sensitivity**: There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. The proposed project site area is not passing through the forest area.
5. **Estimated Muck generation:** About total 23 Lakh cum of excavated muck will be safely dumped in the designated muck dumping yard to mitigate the environmental hazard. An area of 23 Ha of private land has been earmarked for the Muck Dumping area. details are as under:

Quantity of muck =	23,00,000 Cum (for 4 years)
density of muck =	1300 kg/m^3
Quantity of muck in kg =	2990000000 kg for 4 years
	747500000 kg for 1 year
	7,47,500 TPA

1. No Court cases, Public Interest Litigation are pending with the proposed Chittamvalasa PSP Project**.**

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

Project details:

Name of the Proposal	Chittamvalasa Hydro-Electric Pumped Storage Project (800 MW)
Location (Including coordinates)	The proposed Chittamvalasa PSP is located near Kusumavalasa village in Hukumpeta Mandal of Alluri Sitarama Raju district, Andhra Pradesh. The geographical coordinate of upper reservoir is at latitude 18°12'38.91"N and longitude 82°53'11.09"E. Similarly, the geographical coordinate of lower reservoir is at latitude 18°11'22.01"N

	and longitude 82°54'23.11"E.
Inter- stateissue involved	No
Seismic zone	As per the seismic zonation map of India, the Project area lies in the seismic zone-II which falls in moderate zone.

Category details:

Category of the project	Category A
Provisions	Pumped Storage Project
Capacity / Cultural command area (CCA)	800 MW
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	Nil

Electricity generation capacity:

Powerhouse Installed Capacity	800 MW
Generation of Electricity Annually	1721.24 MU
No. of Units	4 (Each of 200 MW)

ToR/EC Details:

Cost of project	Total Hard Cost of the project is Rs. Rs.3,67,779.00 Lakhs (3677.79 Cr). Total cost of the project including IDC is Rs 429627.00 Lakhs (4296.27 Cr)
Total area of Project	366.79 Ha
Height of Dam from Riverbed (EL)	57 m for Upper reservoir dam and 61 m for Lower reservoir dam
Length of Tunnel/Channel	2 nos;8.4 m dia HRT – 376.96 m (L) 4 nos;5.8 m dia Unit TRT – 95.11 m (L) 2 nos;7.8 m dia Main TRT – 772.99 m (L) 2 nos; 6.5 m dia Main Pressure Shaft – 465.19 m (L) 4 nos; 4.8 m dia Branch Pressure Shaft – 68.79 m (L)
Details of Submergence area	The Submergence area of the proposed project area lies in agriculture land of 63 Ha.
Types of Waste and quantity of generation during construction/ Operation	Sewage and solid waste generated at the construction staff colony/ project colony shall be adequately treated/ disposed to avoid water pollution and associated public health problems. Adequate measures will be undertaken to dispose the sewage and waste generated from the labour camps. Appropriate management measures will be recommended as a part of the Comprehensive EIA study.
E-Flows for the Project	Stream flow is not disturbed by the project. The proposed project is an off-stream closed loop project with an installed capacity of 800MW/4964 MWH.
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then	N/A

1. E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Basin. If not the E-Flows maintain criteria for sustaining river ecosystem.	

Muck Management Details:

No. of proposed disposal area/(type of land-Forest/Pvt. land)	Low Lying Areas. An area of 23 Ha has been earmarked for the Muck Dumping area.
Muck Management Plan	The huge, excavated material shall be utilized in the construction of embankment dam with processing the excavated material. Moreover, the excavated material from underground works of tunnel and powerhouse will also be utilized for processing of aggregates for concrete. Thus, about total 23 Lakh cum of excavated muck will be safely dumped in the designated muck dumping yard to mitigate the environmental hazard. An area of 23 Ha has been earmarked for the Muck Dumping area.
Monitoring mechanism for Muck Disposal	The project authorities have identified suitable muck disposal sites which are not located near the riverbanks.

Land Area Breakup:

Private land	366.79 Ha
Government land/Forest Land	0 Ha/0 Ha
Submergence area/Reservoir area	The Submergence area of the proposed project area lies in agriculture land of 63 Ha. The proposed project is an off stream closed loop project with an installed capacity of 800MW/4964 MWH. The land required for the proposed upper reservoir and upper intake is 91.02 ha and the land required for the proposed lower reservoir and lowerr intake is 137.97 ha.
Land required for project components	366.79 Ha

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	No	Under process
National Park	No	
Wildlife Sanctuary	No	

Court case details: Nil

Affidavit/Undertaking details: The undertaking by NREDCAP is provided along with this document

Previous EC compliance and necessary approvals: NA

Miscellaneous

Particulars	Details
Details of consultant	M/s Aarvee Associates Architects, Engineers and Consultants Pvt Ltd, Hyderabad
Project Benefits	The following benefits are anticipated from the project construction and operation phases: • The availability of alternative resources provided by developer in the rural areas will reduce the dependence of the locals on natural resources such as forest. • A number of marginal activities and jobs would be available to the locals during construction phase. • Developer bringing large scale investment to the area will also invest in local area development and benefit will be reaped by locals. • Education, medical, transportation, road network and other infrastructure will improve. • With increased availability of electricity, small-scale and cottage industries are likely to come up in the area.
Status of other statutory clearances	N/A
R&R details	N/A

3.4.3. Deliberations by the EAC in previous meetings

N/A

3.4.4. Deliberations by the EAC in current meetings

49.6.3: 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 terms of reference to the project for Chittamvalasa Pumped Storage Hydro-Electric Project (800 MW) in an area 366.79 ha at Village Kusumavalasa, Mandal Hukumpeta, District Alluri Sitarama Raju, Andhra Pradesh by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd. (NREDCAP.

The project/activity is covered under Category A of item 1 (c) 'River Valley projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level bythe sectoral EAC in the Ministry.

3.4.5. Recommendation of EAC

Recommended

3.4.6. Details of Terms of Reference

3.4.6.1. Specific

Environmental Management and Biodiversity Conservation::

1.	1. Cumulative Impact of project on carrying capacity and sustainability of Reservoir/ nallahs of catchment area / due to tapping of water for filling reservoir due to presence of other proposed PSPs or hydroel proximity of the project. 2. Prepare Environmental Cost Benefit Analysis in terms of loss of Forest ecosystem due to diversion of Forest land/l impacts on ecosystem, water availability, water uses for generation of hydro power and Ecological flows in the Raiwa d/s of Dam on River Sharada at Devarapalli, in study area. 3. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Basel Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristic minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons. 4. A study shall be carried out on impact of project activity on the aquatic and terrestrial ecosystem, with the impact zones (highly impact/low impact zone)based on seasonal variations and covering the aspects related to impa primary productivity due to quantity of water to be lifted for power generation and thermal stratification. A Management plan shall be prepared. 5. Sampling locations be located to cover villages situated near the reservoir and of forest area for collection of baseline data and data to be incorporated in EIA/ EMP report. 6. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir. 7. Source of construction material and its distance from the project site along with detailed transportation plan for constru 8. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report. 9. Certificate and certified map from Chief Wildlife Warden shall be submitted mentioning that project boundary is Sensitive Zone (ESZ). 10. A detailed wildlife conservation plan for Schedule –I species be prepared duly approved by the Chief Wild Life Ward 11. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP. 12. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Govt. institu Agriculture Research (ICAR)and accordingly a detailed Water Shed Development Plan shall be prepared and incorpor 13. MoU for water uses for the project shall be signed and approved by concerned authority. 14. Environmental matrix during construction and operational phase needs to be submitted. 15. Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used shall be mentio 16. Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic species 17. Details of Flora and Fauna reported in submergence area, Nos. of tree along with their density and nomenclatur required to be felled for reservoir creation and other project component. 18. Project impact on avi-fauna shall be studied and incorporated in EIA/ EMP report. 19. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studi
Miscellaneous.	
1.	1. Pre-DPR Chapters viz. Layout Map and Power Potential Studies duly approved by CWC/CEA shall be submitted. 2. Undertaking need to submitted on affidavit that regarding no activities has been yet started on the project site and wat shall not be diverted to other purpose. 3. Both capital and recurring expenditure under EMP shall be submitted. 4. The photograph should bear the date, time, latitude & longitude of the monitoring station/ sampling l PP should submit the original test reports and certificates of the labs which will analyse the samples. 5. Arial view video of project site shall be recorded and to be submitted. 6. Detailed plan to restore wider roads and convert them into narrow upto 10m after construction of the project.
Socio-economic Study	
1.	1. Public Health Delivery Plan including the provisions of drinking water supply for local population shall be in the E the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical new medical infrastructure etc. will be explored after assessing the need of the labour force and local populace. 2. Declaration by the project proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with any S 3. All the tasks including conducting public hearing shall be done as Notification, 2006 and as amended from time to time. Public hearing 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 pub discussion on the CER in compliance of the Ministry's OM F.No.22- 65/2017- IA.III dated 30th Septer shall be submitted. Tentative no. of project affected families shall be identified and accordingly appropriate Rehabilita

	shall be prepared. 5. Details of settlement in 10 km area shall be submitted.
Environmental Management & Biodiversity Conservation	
1.	1. Cumulative Impact of project on carrying capacity and sustainability of Reservoir/ nallahs of catchment area, i tapping of water for filling reservoir. 2. Alternative sites for various components shall be identified in terms of loss of forest area. 3. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Base Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall l locations. The ground water level at 10 locations shall be measured in project area in all three seasons. 4. A study shall be carried out on impact of project activity on the aquatic and terrestrial ecosystem, with the impact zones (highly impact/low impact zone) based on seasonal variations and covering the aspects related to impacts on aquatic ecosystem/ primary pr of water to be lifted for power generation and thermal stratification. Accordingly, Environment Management plan 5. Sampling locations be located to cover villages situated near the reservoir and of forest area for collection of baseline data and data to be incorporated in EIA/ EMPreport. 6. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir. 7. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with expert Council of Agriculture Research (ICAR)and accordingly a detailed Water Shed Development Plan shall be pre EIA/ EMP report. 8. Source of construction material and its distance from the project site along with detailed transportation plan for co 9. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report. 10. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EM 11. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Council of Agriculture Research (ICAR)and accordingly a detailedWater Shed Development Plan shall be pre EIA/ EMP report. 12. MoU for water uses for the project signed and approved by concerned authority shall be submitted. 13. Environmental matrix during construction and operational phase needs to be submitted. 14. Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used s EIA report. 15. Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic spe 16. Details of Flora and Fauna reported in submergence area, Nos. of tree along with their densit nomenclature of the tree species required to be felled for reservoir creation and other project component. 17. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be s 18. Stage-I Forest Clearance shall be obtained. 19. Explore the possibilities to reduce Forest area for the construction of proposed project, Muck disposal sites should
Muck Management/ Disaster Management	
1.	1. Details of quantity of muck generation component wise and disposal site along with transportation plan and its monito 2. Detailsof Muck Management plan prepared along with estimated cost incorporated in EIA/ EMP report. 3. Techno-economic viability of the project must be recommended from CEA/ CWC.

3.4.6.2. 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.
14.	Different riverine habitats like rapids, pools, side pools and variations in the river substratum bedrocks, rocks, boulders, sand/silt or clay etc. need to be covered under the study
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 follows:	
1.	null
2.	Physical geography, Topography, Regional Geological aspects and structure of the Catchment.
3.	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.
4.	Landslide zone or area prone to landslide existing in the study area should be examined.
5.	Presence of important economic mineral deposit, if any.
6.	Justification for location & execution of the project in relation to structural components (dam /barrage height).
7.	Impact of project on geological environment.
8.	Meteorology (viz. Temperature, Relative humidity, wind speed/direction etc.) to be collected from nearest IMD station.
9.	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.
10.	Existing Noise Levels and traffic density in the study area at 5-6 Locations.
11.	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.
12.	(i) 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.
13.	History of the ground water table fluctuation in the study area.
14.	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, NO2, PO4, CI, 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, Cr-6, total Cr, Cu, Zn, Fe) (6 locations).
15.	Delineation of sub and micro-watersheds, their locations and extent based on the All India Soil and Land Use Survey of India (AISLUS), Department of Agriculture, Government of India. Erosion levels in each micro-watershed and prioritization of micro-watershed through silt yield index (SYI) method of AISLUS
16.	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.
17.	Run off, discharge, water availability for the project, sedimentation rate, etc.

18.	Basin characteristics
19.	Catastrophic events like cloud bursts and flash floods, if any, should be documented.
20.	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.
21.	Set up a G&D monitoring station and a few rain gauge stations in the catchment area for collecting data during the investigation.
22.	Flow series, 10 daily with 90%, 75% and 50% dependable years discharges.
23.	Information on the 10-daily flow basis for the 90 per cent dependable year the flow intercepted at the dam, the flow diverted to the power house and the spill comprising the environmental flow and additional flow towards downstream of the dam for the project may be given.
24.	The minimum environmental flow shall be 20% of the flow of four consecutive lean months of 90% dependable year, 30% of the average monsoon flow. The flow for remaining months shall be in between 20-30%, depending on the site specific requirements. A site specific study shall be carried out by an expert organization.
25.	Sedimentation data available with CWC may be used to find out the loss in storage over the years.
26.	Hydrological studies/data as approved by CWC shall be utilized in the preparation of EIA/EMP report. Actual hydrological annual yield may also be given in the report. Sedimentation data available with CWC may be used to find out the loss in storage over the years.
27.	A minimum of 1 km distance from the tip of the reservoir to the tail race tunnel should be maintained between upstream and downstream projects.
28.	Besides primary studies, review of secondary data/literature published for project area on flora & fauna including RET species shall be reported in EIA/EMP report.
29.	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.
30.	Documentation of all plant species i.e. Angiosperm, Gymnosperm, Pteriodophytes, Bryophytes (all groups).
31.	General vegetation profile and floral diversity covering all groups of flora including lichens and orchids. A species wise list may be provided.
32.	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 quadrates, size of quadrates etc. to be reported within the study area in different ecosystems.
33.	Existence of National park, Sanctuary, Biosphere Reserve etc in the study area, if any, should be detailed.
34.	Economically important species like medicinal plants, timber, fuel wood etc.
35.	Details of endemic species found in the project area.
36.	Flora under RET categories should be documented using International Union for the Conservation of 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.
37.	Cropping pattern and Horticultural Practices in the study area.

38.	Fauna study and inventorisation should be carried out for all groups of animals in the study area. Their present status alongwith Schedule of the species.
39.	Documentation of fauna plankton (phyto and zooplankton), periphyton, benthos and fish should be done and analysed.
40.	Information (authenticated) on Avi-fauna and wildlife in the study area.
41.	Status of avifauna their resident/ migratory/ passage migrants etc.
42.	Documentation of butterflies, if any, found in the area.
43.	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.
44.	Existence of barriers and corridors, if any, for wild animals.
45.	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.
46.	Collection of primary data on agricultural activity, crop and their productivity and irrigation facilities components.
47.	For categorization of sub-catchment 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 catchment.
48.	Documentation of aquatic fauna like macro-invertebrates, zooplankton, phytoplantktons, benthos etc.
49.	Fish and fisheries, their migration and breeding grounds.
50.	Fish diversity composition and maximum length & weight of the measured populations to be studies for estimation of environmental flow.
51.	Conservation status of aquatic fauna.
52.	Sampling for aquatic ecology and fisheries and fisheries must be conducted during three seasons Pre-monsoon (summer), monsoon and winter. Sizes (length & weight) of important fish species need to be collected and breeding and feeding grounds should also be identified along the project site or in vicinity.
53.	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 surroundings population.
54.	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.
55.	Collection of information on sensitive habitat of historical, cultural and religious and ecological importance.
56.	The socio-economic survey/ profile within 10 km of the study area for demographic profile; Economic Structure; Developmental Profile; Agricultural Practices; Infrastructure, education facilities; health and sanitation facilities; available communication network etc.
57.	Documentation of demographic, Ethnographic, Economic Structure and development profile of the area.
58.	Information on Agricultural Practices, Cultural and aesthetic sites, Infrastructure facilities etc.

59.	Information on the dependence of the local people on minor forest produce and their cattle grazing rights in the forest land.
60.	List of all the Project Affected Families with their name, age, educational qualification, family size, sex, religion, caste, sources of income, land & house holdings, other properties, occupation, source of income, house/land to be acquired for the project and house/land left with the family, any other property, possession of cattle, type of house etc.
61.	Special attention has to be given to vulnerable groups like women, aged persons etc. and to any ethnic/indigenous groups that are getting affected by the project.
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 soil, material, vegetation and human health.
4.	Impact of emissions from DG set used for power during the construction, if any, on air environment.
5.	Pollution due to fuel combustion in equipments and vehicles
6.	Fugitive emissions from various sources
7.	Changes in surface and ground water quality
8.	Steps to develop pisci-culture and recreational facilities
9.	Changes in hydraulic regime and downstream flow.
10.	Water pollution due to disposal of sewage
11.	Water pollution from labour colonies/ 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 stream (c) blasting for commissioning of HRT, TRT 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 and green belt.
23.	Impact on fish migration and habitat degradation due to decreased flow of water
24.	Impact on breeding and nesting grounds of animals and fish.
25.	Impact on local community including demographic profile.
26.	Impact on socio-economic status
27.	Impact on economic status.
28.	Impact on human health due to water / vector borne disease
29.	Impact on increase traffic
30.	Impact on Holy Places and Tourism
31.	Impacts of blasting activity during project construction which generally destabilize the land mass and leads to landslides, damage to properties and drying up of natural springs and cause noise population will be studies. Proper record shall be maintained of the baseline information in the post project period.
32.	Positive and negative impacts likely to be accrued due to the project are listed.
Environmental Management Plan	
1.	Biodiversity and Wildlife Conservation and Management Plan for the conservation and preservation of rare, endangered or endemic floral/faunal species or some National Park/Sanctuary/ Biosphere Reserve or other protected area is going to get affected directly or indirectly by construction of the project, then suitable conservation measures should be prepared in consultation with the State Forest Department and with the physical and financial details. Suitable conservation techniques (in-situ/ ex-situ) will be proposed under the plan and the areas where such conservation is proposed will be marked on a project layout map.
2.	Compensatory Afforestation shall be prepared by the State Forest Department in lieu of the forest land proposed to be diverted for construction of the project as per the Forest (Conservation) Act, 1980. Choice of plants for afforestation should include native and RET species, if any. This will be a part of the forest clearance proposal.
3.	Fisheries Conservation and Management Plan - a specific fisheries management measures should be prepared for river and reservoir. If the construction of fish ladder/ fish-way etc. is not feasible then measures for reservoir fisheries will be proposed. The plan will detail out the number of hatcheries, nurseries, rearing ponds etc. proposed under the plan with proper drawings. If any migratory fish species is getting affected then the migratory routes, time/season of upstream and downstream migration, spawning grounds etc will be discussed in details.
4.	Green Belt Development Plan along the periphery of the reservoir, approach roads around the colonies and other project components, local plant species must be suggested with physical and financial details. A layout map showing the proposed sites for developing the green belt should be prepared.
5.	Environmental Monitoring Programme to monitor the mitigatory measures implemented at the project site is required will be prepared. Provision for Environment Management Cell should be made. The plan will spell out the aspects required to be monitored, monitoring indicators/parameters with respect to each aspect and the

	agency responsible for the monitoring of that particular aspect throughout the project implementation.
6.	Catchment Area Treatment (CAT) Plan should be prepared micro-watershed wise. Identification of free draining/ directly draining catchment based upon Remote Sensing and Geographical Information System (GIS) methodology and Sediment Yield Index (SYI) method of AISLUS, Deptt. of Agriculture, Govt. of India coupled with ground survey. Areas or watersheds falling under 'very severe' and 'severe' erosion categories should be provided and required to be treated. Both biological as well as engineering measures should be proposed in consultation with State Forest Department for areas requiring treatment. Year-wise schedule of work and monetary allocation should be provided. Mitigation measures to check shifting cultivation in the catchment area with provision for alternative and better agricultural practices should be included.
7.	Study of Design Earthquake Parameters: A site specific study of earthquake parameters should be done. Results of the site specific earthquake design parameters should be approved by National Committee of Seismic Design Parameters, Central Water Commission (NCSDP), New Delhi.
8.	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. To identify inundation areas, population and structures likely to be affected due to catastrophic floods in the event of dam failure. DMP will be prepared with the help of Dam Break Analysis. Maximum water level that would be attained at various points on the downstream in case of dam break will be marked on a detailed contour map of the downstream area, to show the extent of inundation. The action plan will include Emergency Action and Management plan including measures like preventive action notification, warning procedure and action plan for co-ordination with various authorities.
9.	Reservoir Rim Treatment Plan for stabilization of land slide / land slip zones, if any, around the reservoir periphery is to be prepared based on detailed survey of geology of the reservoir rim area. Suitable engineering and biological measures for treatment of identified slip zones to be suggested with physical and financial schedule. Layout map showing the landslide/landslip zones shall be prepared and appended in the chapter.
10.	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.
11.	Restoration Plan for Quarry Sites and landscaping of colony areas, working areas, roads etc. Details of the coarse/fine aggregate/clay etc. required for construction of the project and the rock/clay quarries/river shoal sites identified for the project should be discussed along-with the Engineering and Biological measures proposed for their restoration with physical and financial details. Layout map showing quarry sites vis-à-vis other project components, should be prepared.
12.	Resettlement and Rehabilitation Plan needed to be prepared on the basis of findings of the socio- economic survey coupled with the outcome of public consultation held. The R&R package shall be prepared after consultation with the representatives of the project affected families and the State Government. Detailed budgetary estimates are to be provided. Resettlements site should be identified. The plan will also incorporate community development strategies.
13.	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 populace.
14.	Local Area Development Plan to be formulated in consultation with the Revenue Officials and Village Pancahayats. Appropriate schemes shall be prepared under EMP for the Local Area Development Plan with sufficient financial provisions.
15.	Labour Management Plan for their Health and Safety.

16.	Sanitation and Solid waste management plan for domestic waste from colonies and labour camps etc.
17.	Energy Conservation Measures for the work force during construction with physical and financial details. Alternatives will be proposed for the labour force so that the exploitation of the natural resource (wood) for the domestic and commercial use is curbed.
18.	Environmental safeguards during construction activities including Road Construction.
19.	A summary of Cost Estimates for all the plans, cost for implementing all the Environmental Management Plans.
20.	Water, Air and Noise Management Plans to be implemented during construction and post-construction periods.

3.5. Agenda Item No 5:

3.5.1. Details of the proposal

Renukaji Dam Project by **HIMACHAL PRADESH POWER CORPORATION LIMITED** located at **SIRMAUR,HIMACHAL PRADESH**			
Proposal For		Application for Validity Extension of EC- Form-6	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/HP/RIV/435307/2023	J-12011/53/2008-IA-I	01/07/2023	River Valley/Irrigation projects (1(c)) River Valley/Irrigation projects (1(c))

3.5.2. Project Salient Features

49.4.1: The proposal is for grant of validity extension of environmental clearance (EC) of Renukaji Dam Project (40 MW) in an area of 1988.27 ha at Village Dadahu, District Nahan, Himachal Pradesh by M/s Himachal Pradesh Power Corporation Limited.

49.4.2: The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

1. Environmental Clearance was accorded by MoEF&CC on 23.10.2009.
2. The project construction work couldn't be started in the validity period of EC due to the following reasons:

The case for diversion of forest land was submitted on 25.09.2008, however, due to various issues involved and multiple inspections and subsequent recommendations of changes by forest authorities of State and Centre, Stage-I clearance could be obtained only on 20.02.2015. The funds for Project, including its clearances are to be provided by GoI and beneficiary states, however, due to non-signing of "Interstate Agreement" and CCEA approval, funds required for Stage-II forest clearance could not be received. To codify the rights and liabilities of all stake holders "Interstate Agreement" was signed on 11.01.2019. Thereafter, the Investment Clearance was accorded on 07.08.2020 by the Department of Water Resource, RD & GR Ministry of Jal Shakti Govt. of India and approval from Cabinet Committee on Economic Affairs (CCEA) was accorded on 15.12.2022. Then the Ministry of Jal Shakti Govt. of India released the amount of compensatory levies for deposition in State CAMPA Account for Stage-II clearance vide letter dated 30-03-2022 and the same has been deposited on 12-05-2022. Now, the compliance will be submitted for Stage-II forest clearance which is under process.

Request:
The proposal has been submitted for seeking the extension of validity of EC so as to continue on the project activities

for the implementation.

3.5.3. Deliberations by the EAC in previous meetings

N/A

3.5.4. Deliberations by the EAC in current meetings

49.4.3: The EAC during deliberations noted the following:

The proposal is for validity extension of Environmental Clearance of Renukaji Dam Project (40 MW) in an area of 1988.27 ha at Village Dadahu, District Nahan, Himachal Pradesh by M/s Himachal Pradesh Power Corporation Limited.

The Environmental Clearance was granted by the Ministry vide letter dated 23.10.2009. The validity of said EC was extended by the Ministry vide letter dated 6.11.2019 till 22.10.2022.

As per the Ministry's Notification S.O. 1807(E) dated 12.04.2022, the environmental clearance granted to River Valley project shall be valid for a period of thirteen years and may be extended in respect of valid Environmental Clearance, by the regulatory authority concerned by a maximum period of two years.

Ministry has issued OM vide dated 11.04.2022 wherein it has mentioned that the time taken for obtaining Stage-II FC, after the grant of EC, may not be considered as part of the EC validity up to a maximum period of two years.

However, as per MoEF&CC notification S.O. 221(E) dated 18.01.2021 the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19). Accordingly, the EC dated 23.10.2009 shall be considered as valid till 22.10.2025 and as per the Ministry's Notification S.O. 1807(E) dated 12.04.2022 the validity of EC may be extended for two more year till 24.03.2027.

49.4.3: The EAC after detailed deliberations noted that as the EC dated 23.10.2009 is still valid till 22.10.2025, the project proponent may submit proposal for extension of validity of EC in 2025 before expiring EC. The proposal was therefore **returned in present form**.

3.5.5. Recommendation of EAC

Returned in present form

4. Any Other Item(s)

N/A

5. List of Attendees

Sr. No.	Name	Designation	Email ID	Remarks
1	Dr K Gopakumar	Chairman, EAC	kgopa@iisc.ac.in	Absent
2	Dr N Lakshman	Member (EAC)	lnand@rocketmail.com	
3	Dr Mukesh Sharma	Member (EAC)	mukesh@iitk.ac.in	
4	Dr B K Panigrahi	Member (EAC)	bijayaketan.panigrahi@gmail.com	Absent
5	Dr Chandrahas Deshpande	Member (EAC)	chandrahas.despande@welingkar.org	Absent

6	Dr A K Malhotra	Member (EAC)	ajitkumarmalhotra463@gmail.com	
7	Dr Uday Kumar R Y	Member (EAC)	udaykumarry@yahoo.com	
8	Dr Narayan Shenoy K	Member (EAC)	kn.shenoy@manipal.edu	Absent
9	Shri Sharvan Kumar	Member (EAC)	Dirhpa3@gmail.com	Absent
10	Shri Ashok Kumar Kharya	Member (EAC)	ceenvtmgmt@nic.in	Absent
11	Dr J A Johnson	Member (EAC)	jaj@wii.gov.in	
12	Dr B K Das	Member (EAC)	amiya.sahoo@icar.gov.in	Absent
13	Dr Vijay Kumar	Member (EAC)	vijay.kumar66@nic.in	Absent
14	Yogendra Pal Singh	Scientist E	yogendra78@nic.in	

MINUTES OF THE 49TH MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 24TH JULY, 2023 FROM 10:30AM- 05:30PM THROUGH VIRTUAL MODE.

The 49th meeting of the re-constituted 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 24th July, 2023 through virtual mode, under the Chairmanship of Dr. A. K. Malhotra list of members present in the meeting is at **Annexure**.

Agenda item No.49.1:

Confirmation of the minutes of 48th EAC meeting held on 26th – 27th June, 2023.

Agenda item No. 49.2:

Expansion of Krishna Koyna Lift Irrigation Project from 1,09,127 to 1,35,627 CCA at Village Jath, Taluka Ananthagiri and Araku Valley, District Sangli & Solapur, Maharashtra by M/s Department of Irrigation, Government of Maharashtra – Environmental Clearance (EC) – reg.

[Proposal No. IA/MH/RIV/431564/2023; F. No. J-12011/5/2009-IA.I (R)]

49.2.1: The proposal is for grant of Environmental Clearance (EC) to the project for expansion of Krishna Koyna Lift Irrigation Project from 1,09,127 to 1,35,627 CCA at Village Jath, Taluka Ananthagiri and Araku Valley, District Sangli & Solapur, Maharashtra by M/s Department of Irrigation, Government of Maharashtra.

49.2.2: The project proponent and the accredited Consultant M/s MITCON Consultancy & Engineering Services Ltd, made a detailed presentation on the salient features of the project and informed that:

i. The proposal is for environmental clearance to the project for Expansion of Krishna Koyna Lift Irrigation Project from 1,09,127 to 1,35,627 CCA at Village Jath, Taluka Ananthagiri and Araku Valley, District Sangli & Solapur, Maharashtra by M/s Department of Irrigation, Government of Maharashtra.
ii. The project proposal was considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 40th meeting held during 25.01.2023 and recommended for grant of Terms of References (ToRs) for the Project. The ToR has been issued by Ministry vide letter No. J-12011/5/2009-IA.I (R) dated 6th March 2023.
iii. The project is listed at S.N. 1 (C) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).
iv. Ministry had issued EC earlier vide letter no. vide letter J-12011/2/89-IA, dt. 01/06/1989 for ICA 68908 ha. and latest approval is for ICA 40219 ha vide letter no. J-12011/5/2009-IA.I, dt. 01/07/2009.
v. Land requirement details are as below

Nature of Land involved in (Ha)	Area Existing in Ha	Additional Area Proposed in Ha	Total Area required after expansion in Ha
Non-Forest Land	**3589.71**	**32.33**	**3622.04**

Forest Land	**12.83**	**2.67**	**15.5**
Total	**3602.54**	**35.00**	**3637.54**

- 10 ha Green belt has been developed. Provision for Ecology & Biodiversity /Green Belt Development is Rs. 755.58 L and will do plantation around project periphery

vi. The estimated project cost is

Existing Project: Rs. 6393.19 Cr.
Proposed Expansion: Rs.1879.17 Cr.
Total Cost: Rs. 8272.36 Cr.

Total capital cost earmarked towards environmental pollution control measure is Rs. 80189.58 L and the Recurring cost (operation and maintenance) will be about Rs. 109.00 L per annum.

vii. Total Employment will be 50 persons as direct & 145 persons indirect after expansion. The project proposes to allocate Rs. 400/- L @ of 0.25 % towards CER (as per Ministry's OM dated 1st May 2018).

viii. There are 6 Sacred groves/ protected areas.

ix. Ambient air quality monitoring was carried out at 13 locations during March 2022 to May 2022 and January 2023 to March 2023 and the baseline data indicates the ranges of concentrations as: PM_{10} (32.3 to 76.5 µg/m3), $PM_{2.5}$ (10.8 to 25.6.µg/m3), SO_2 (5.9 to 20.9 .µg/m3) and NO_2 (4 to 24.6 µg/m3).

x. Details of Solid waste/ Hazardous waste generation/ Muck and its management

Sr. No	**Type of material**	**Total generated quantity in excavation in cum**	**Total generated quantity in excavation in Mm^3**
1	Soft Soil	190965	0.19
2	Hard murum & soft Rock	448375	0.45
3	Hard Rock	3074668	3.07
		3714008	**3.71**
	Muck is in scattered reaches of 386 km & 88333 ha area		

xi. Details of Material required for PDN Component, utilization of excavated material and material from borrow area

Sr. No.	**Type of material**	**Required quantity in cum**	**Excavated material to be utilized**	**Material from borrow area**	**Unutilized excavated material**
1	Soft	190966	190966	0	
2	Hard Murum and Soft rock	448375	448375	0	
3	Hard Rock	1568106	1568106	0	
	Total in cum	2207447	2207447	**0**	

	Total in mm3	**2.21**	**2.21**	**0**	Nil

xii. The total 2.21 Mm^3 material is required for construction of 2.21 Out of 3.71 Mm^3 muck generated, 2.21 Mm3 muck will reutilized for construction. The balance material will be utilized for generation of Crushed Metal (10 mm & 20 mm), crushed sand, Approach roads, Conveyance roads, Pump House backfilling, refilling of low laying area and local bunds of agriculture land.

xiii. Public Hearing for the proposed project has been conducted by the State Pollution Control Board on 17.05.2023. The main issues raised during the public hearing are related to water scarcity and when all the storages/ tanks in 65 villages of Extended Jath schemes will be filled.

xiv. The project proponent has informed that they have requested IRO, Nagpur vide letter dated 22.02.2023 and reminder vide dated 05.07.2023 for certified compliance report. The Member Secretary, MPCB vide letter dated 28.07.2023 has forwarded the certified compliance report of existing EC.

xv. Status of Litigation Pending against the proposal, if any. – Not any

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

EAC Meeting Details:

EAC meeting/s	49th Meeting Agenda Id: EC/AGENDA/EAC/625598/7/2023
Date of Meeting/s	18.07.2023
Date of earlier EAC meetings	Meeting ID: IA/RIV/13427/25/01/2023 25 Jan 2023 (15:30 PM to 17:30 PM)

Project details:

Name of the Proposal	**[Proposal No. IA/MH/RIV/431564/2023; F. No. J-12011/5/2009-IA.I (R)]**
Location (Including coordinates)	Longitude: 74° 30' (East) Latitude: 16° 50' (North)
Inter- state issue	No
Seismic zone	III

Category details:

Category of the project	A
Provisions	Irrigation to draught prone area Sangli district
Capacity / Cultural command area (CCA)	Krishna Koyna Lift Irrigation Project

Scheme	**ICA in Ha**	**CCA in Ha**	**GCA in Ha**	**Remark**
Takari LIS	27,430	44358	52128	Existing EC

	Mhaisal LIS	81,697	138745	154896	Existing EC
	Mhaisal Extended Jath LIS	26,500	88333	103921	Proposed Expansion
	Total	**1,35,627**	**271436**	**310945**	
Attracts the General Conditions (Yes/No)	Yes, interstate boundary adjacent to the command area				

Electricity generation capacity:

Powerhouse Installed Capacity	Solar Energy Proposed to Install : 200 MW
Generation of Electricity Annually	200 MW
No. of Units	1
Additional information (if any)	Total electricity requirement will be 138.75 MW however, we are installing solar project having capacity 200 MW

EC Details:

Cost of project	Existing Project: Rs. 6393.19 Cr Proposed Expansion: Rs.1879.17 Cr. Total Cost: Rs. 8272.36 Cr.
Total area of Project	**Scheme** / **ICA in Ha** / **CCA in Ha** / **GCA in Ha** / **Remark** Takari LIS: 27,430 / 44358 / 52128 / Existing EC Mhaisal LIS: 81,697 / 138745 / 154896 / Existing EC Mhaisal Extended Jath LIS: 26,500 / 88333 / 103921 / Proposed Expansion Total: **1,35,627** / **271436** / **310945**
Height of Dam from River Bed (EL)	NA
Length of Tunnel/Channel	Length of Proposed Tunnel: 1360 m (Raising Main) Length of new pipeline proposed: 190 km Length of Distributaries 386 km (pipe dishnet)
Details of Submergence area	NA
Types of Waste and quantity of generation during construction/ Operation	**Domestic Waste:** **Name of Waste** / **Source** / **Qty (TPA)** Dry Waste / Labour Colony / 0.9 Wet Waste / Labour Colony / 0.53 **Excavation Waste**

Address: IA Division, Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan, Jor Bagh New Delhi - 110003

	Name of Waste / **Source** / **Qty (Tonn)** Muck / Excavation & Tunnel Work / 85872
E-Flows for the Project	NA
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then e) E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Basin. f) If not the E-Flows maintain criteria for sustaining river ecosystem.	NA

Muck Management Details:

No. of proposed disposal area/ (type of land- Forest/Pvt. land)	4 numbers of disposal area (Government owned land) 1. Jath LIS Stage I 2. Jath LIS Stage II 3. Jath LIS Stage III 4. Jath LIS Stage IV
Muck Management Plan	Mode of Disposal : Excavated material will be utilised in filling and road work (IP and SR)
Monitoring mechanism for Muck Disposal	Environmental Management Cell (EMC) shall monitor mechanism of muck disposal

Land Area Breakup:

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	**Sr. No.**	**Name of the Grove**	**Deity**	**Tahsil**
National Park	No	1	Arewadi	Biroba	Kavathe Mahankal
Wildlife Sanctuary	No	2	Banali	Banshankari	Jath
		3	Dandoba	Dandnath	Miraj

Address: IA Division, Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan, Jor Bagh New Delhi - 110003

		4	Raywadi	Lord Shiva	Kavathe Mahankal
		5	Sagreshwar WLS	Lord Shiva	Kadegaon
		6	Shukacharya	Sukhdev	Khanpur-Atpadi

Court case details:

Court Case	NA
Additional information (if any)	NA

Affidavit/Undertaking details:

Affidavit/Undertaking	Enclosed
Additional information (if any)	NA

Previous EC compliance and necessary approvals:

Particulars	**Letter no. and date**
Certified EC compliance report (if applicable)	Shri. Shantidas Mukhopadhyay, Assistant Audit Officer and Shri. G.D. Kengale, Sr. Auditor visited for performance audit of Environment Clearance and Post Clearance Monitoring on 22.02.2016 to 26.02.2016 Recently request letter submitted to RO, MOEFCC, Nagpur dated 22.02.2023 and reminder on 05.07.2023 for certified compliance report
Status of Stage- I FC	**FP/MH/Pipeline/431430/2023** Submission date 30/05/2023
Additional detail (If any)	NA
Is FRA (2006) done for FC-I	NA

Miscellaneous

Particulars	**Details**
Details of consultant	MITCON Consultancy & Engineering Services Ltd. Pune **Certificate No.** NABET/EIA/2124/RA 0229_Rev 02 Valid up to Feb 05, 2024
Project Benefits	❖ The proposed expansion intends to irrigate 26500 ha land of 65 villages of Jat Taluka of Sangli District ❖ GoM in the year 2017 adopted

	policy of Pipe Distribution Network (PDN). ❖ Provide better consumer experience and improved operational performance with an end-to-end coverage from pump house to water distribution network with minimum water charges cost to farmers. ❖ Improvement in operational performance and reliability in water supply by futuristic interventions enabled through SCADA interventions qualifying smart utilities and digital utilities ❖ Due to PDN, there is increase in water use efficiency, Speedy construction early benefits and more irrigation per Mcft ❖ Solar Energy Proposed to be Installed: 200 MW; (However requirement for Mhaisal Scheme including proposed extension is 97.51 MW and for entire project is 138.75 MW) ❖ **During construction phase** **Permanent employment** No. of permanent employment: 145 Period of employment (days): 1825 **Temporary employment** Temporary / Contractual employment (No. of Man days): 1355 **During operational phase** Permanent employment proposed: 50 Temporary employment proposed: 145
Status of other statutory clearances	**Environmental Clearance** • Letter No. J.-12011/2/89-IA dated June 1, 1989 • Expansion of EC No. J-12011/5/2009-IA.I dated 01.07.2009 **Forest Clearance** • Letter No. 8-549/88-FC dated 08.03.1989 for 11.10 ha • Letter No.1368 dated 25.07.2014 for 1.7338 ha

Address: IA Division, Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan, Jor Bagh New Delhi - 110003

	• Applied for additional forest land • FP/MH/Pipeline/431430/2023 • Submission date 30/05/2023

Public Hearing (PH) Details

Advertisement for PH with date	Marathi News Paper: **Sakal** Dated 15.04.2023 and Corrigendum 27.04. 2023; Pg No.7 English News Paper: **Times of India**, Saturday 15.04.2023
Date of PH	17.05.2023
Venue	Bhima Yatri Niwas Hall, Guddapur, Shri Dhanmmadevi Devasthan Parisar, Taluka-Jath, District – Sangli (416 412) Maharastra at 12.00 noon
Chaired By	(Vijaysinh Patil) Chairman, Environment Public Hearing Committee And Additional District Magistrate, Sangli
Main issues raised during PH	All the participants raised the water scarcity issue by heart. Many years the local people are suffering due to drought
No. of people attended	114

Brief of base line Environment

Particulars	**Details**
Period of baseline data collection/Sampling period.	01.03.20222 to 31.03.2023
(Air, noise, water, land)	The data collected was divided, for analytical convenience, in to the following 3 Seasons: 1. Season 1 – March 2022 to May 2022 2. Season 2 – June 2022 to August 2022* 3. Season 3 – January 2023 to March 2023 * Air and Noise samples not collected
Flora and Fauna of the Project Area	Total 201 floral species were recorded in and around the project area (i.e. 10 km radius study). Among them 39% Herbs, 37 % Trees, 19 % shrubs & climbers were 5% each Faunal Diversity: Mammals: 21 sps. Bird Diversity: 45 sps Fish Diversity: 73 sps Frog: 3 sps Spiders : 70 sps.
Aquatic Ecology etc.	Fish Diversity: 70 sps Frog: 3 sps Aquatic Birds : 11 sps

Brief description on hydrology and water assessment as per the approved Pre-DPR:	Koyna Dam	19.07 TMC
	Warna dam	6.00 TMC
	Run-off of the Krishna River during Kharif	7.71
	Total	**32.78 MC**

Availability of Schedule-I species in study area

Sr. No	Class	Scientific Name	Common Name	IWPA Status	IUCN Status
1.	Mammal	Varanus bengaiensis	Bengal Monitor	Schedule I	EN
2.	Mammal	Canis lupus	Grey Wolf	Schedule I	LC
3.	Mammal	Antilope cervicapra	Blackbuck	Schedule I	LC
4.	Mammal	Hyena hyaena	Striped Hyaena	Schedule I	Not Enlisted
5.	Mammal	Vulpes bengalensis	Bengal Fox	Schedule I	LC
6.	Mammal	Bos gaurus	Gaur/Indian Bison	Schedule I	VU
7.	Mammal	Prionailurus rubiginosus	Rusty Spotted Cat	Schedule I	NT
8.	Mammal	Felis chaus	Jungle Cat	Schedule I	LC
9.	Bird	Pavo cristatus	Indian Peafowl	Schedule I	LC
10.	Bird	Accipiter badius	Shikra	Schedule I	LC
11.	Bird	Haliastur indus	Brahminy Kite	Schedule I	LC
12.	Reptile	Fowlea piscator	Chequered keelback	Schedule I	LC
13.	Reptile	Ptyas mucosa	Dhaman	Schedule I	LC

Details of EMP

SI	Activities	Capital Cost Rs. Lakhs	Recurring Cost (per annum) Rs. Lakhs
1.	Ambient Air Quality	-	16.00
2.	Noise Level	-	10.00
3.	Surface and Ground Water Quality	-	23.00
4.	Soil Quality	-	10.00
5.	Solid/ hazardous wastes	02.00	10.00

SI	Activities	Capital Cost Rs. Lakhs	Recurring Cost (per annum) Rs. Lakh
6.	Ecology & Biodiversity /Green Belt Development &	755.58	15.00
7.	Health & Safety	-	25.00
8.	Command Area Development Plan	79032.00	-
9.	Corporate Environmental Responsibility	400.00	-
Summary of allocation of fund for EMP			
1.	EMPs: (eg.: Air Environment, Water Environment)	84.00 L	
2.	Capital Cost (in Lakhs)	80189.58 L	
3.	Recurring Cost per annum (In Lakhs)	109.00 L	

49.2.3: The EAC during deliberations noted the following:

The proposal is for grant of Environmental Clearance (EC) to the project for expansion of Krishna Koyna Lift Irrigation Project from 1,09,127 to 1,35,627 CCA at Village Jath, Taluka Ananthagiri and Araku Valley, District Sangli & Solapur, Maharashtra by M/s Department of Irrigation, Government of Maharashtra.

The project/activity is covered under Category 'A' of item 1 (c) 'River Valley projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and appraised at Central level by the sectoral EAC in the Ministry as category A.

The ToR has been issued by Ministry vide letter No. J-12011/5/2009-IA.I (R) dated 6th March 2023. The proposed expansion involves total 2.67 ha additional forest land, accordingly the PP has submitted the application for obtaining Stage I Forest Clearance on 30.05.2023 vide proposal no. FP/MH/Pipeline/431430/2023.

Public Hearing for the proposed project has been conducted by the State Pollution Control Board on 17.05.2023 at Guddapur, Shri Dhanmmadevi Devasthan Parisar, Taluka-Jath, District – Sangli (416 412) Maharashtra. The main issues raised during the public hearing on water scarcity issues. EAC observed that the PP has proposed to allocate Rs. 400/- L @ of 0.25 % towards CER (as per Ministry's OM dated 1st May 2018); whereas, the CER is being considered as per provisions of the MoEF&CC Office Memorandum No. 22-65/2017-IA.III dated 30/09/2020 and suitable safeguard measure will be suggested accordingly by the EAC.

The EAC noted that being an expansion proposal compliance status report of earlier EC granted by the Ministry on 01.07.2009 need to be examined in terms of Ministry's OM no. IA3-22/10/2022-IA.III [E177258] dated 08.06.2022. The PP informed that request letter dated 22.02.2023 was submitted to RO, MOEFCC, Nagpur for certified compliance report and reminder was sent on 05.07.2023, however visit of MoEF&CC IRO Officer is awaited. The PP submitted the compliance report certified by the Member Secretary, Maharashtra Pollution Control Board vide letter no. MPCB/JD (WPC)/230728-FTS-0146 dated 28.07.2023. The certified compliance report was circulated to the EAC vide email dated 01.08.2023 for perusal and comments. The EAC observed that compliance report is satisfactory.

The EAC in the present meeting (49th meeting) deliberated on the information submitted (Form 2, EIA/EMP report, kml file, etc.) and as presented along with consultant M/s. MITCON Consultancy & Engineering Services Ltd.

49.2.4 The EAC after examining the information submitted and detailed deliberations **recommended** the proposal for grant of Environmental Clearance by the Ministry to the project for expansion of Krishna Koyna Lift Irrigation Project from 1,09,127 to 1,35,627 CCA at Village Jath, Taluka Ananthagiri and Araku Valley, District Sangli & Solapur, Maharashtra by M/s Department of Irrigation, Government of Maharashtra, under the provisions of EIA Notification, 2006 and as amended with subject to compliance of applicable Standard EC conditions with the following additional conditions:

[A] Environmental management and Biodiversity conservation:

i. Stage I FC for 2.67 ha of forest land involved in the project shall be submitted prior to 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. Monitoring in all season in the d/s of lifting the water from Krishna River at Takari and Mhaisal.
iv. The water for filling of reservoir/ recoupment of evaporation and recirculation losses shall be met from a source other than the rainfall yield of catchment of non-perennial stream/ nallah.
v. 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.
vi. The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.
vii. Ambient Air Quality Monitoring Stations for real time data to be installed at project site, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.
viii. Budget for conservation of Schedule I species is very low. The project proponent may be revised the same after consultation with CLWL. 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.
ix. 10000 plants shall be planted around the muck disposal area and the survival of plants shall be submitted with the 6 monthly compliance report.
x. Watershed development plan shall be prepared in consultation with ICAR/expert Govt. institute and be implemented within 10 km radius of the projects. Implementation status be submitted in the 6 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.

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.

[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. The area is ecologically fragile therefore Project Proponent shall ensure that safety measures as mentioned in the EMP shall be fully implemented.
iii. 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 populace.
iv. 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.

[D] 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. Bio-Gas plant (Deenn Bandhu Model of Bio-Gas) shall be installed in the Project affected area for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.
3. RO plant shall be installed in the nearby 5 villages and the maintenance shall be done by the project Authorities.
4. Solar panel be provided to the families living in rural areas within 10 km radius of project.
5. The compliance of above conditions shall be monitored by IRO, MoEF&CC through regular site visit twice in a year.
6. 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.
7. An institutional mechanism to be developed to ensure the preference of jobs to PAFs and also a policy for preferential treatment for award of sundry works to the PAFs and their dependents.

Agenda item No. 49.3:

Kharauli Pumped Storage Project (500 MW) in an area of 51.1 ha at Village Kharauli, Tehsil Oudgi, District Surajpur, Chhattisgarh by M/s Kharauli Energy Private Limited – Terms of References (TOR) – reg.

[Proposal No. IA/CG/RIV/432239/2023; F. No. J-12011/35/2023-IA.I (R)]

49.3.1: The proposal is for grant of Terms of Reference (ToR) to the project for Kharauli Pumped Storage Project of capacity 500 MW in an area of 51.1 ha at Village Kharauli, Tehsil Oudgi, District Surajpur, Chhattisgarh by M/s Kharauli Energy Private Limited.

49.3.2: The Project Proponent and the accredited Consultant M/s R S Envirolink Technologies Pvt. Ltd., made a detailed presentation on the salient features of the project and informed that:

i. The proposal is for ToR for Kharauli Pumped Storage Project located at Village Kharauli, Tehsil Oudgi, District Surajpur, Chhattisgarh by M/s Kharauli Energy Private Limited.
ii. The project is listed at S.N. 1 (c) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and is appraised at Central Level by Expert Appraisal Committee (EAC).
iii. The estimated project cost is Rs 2374.96 crore. Total capital cost earmarked towards environmental pollution control measures will be worked out during EIA study as well as the Recurring cost (operation and maintenance).
iv. Tamorpingla WLS is at 4.6 km distance from the project site. Proposed Mahan II SHEP reservoir will be used as Lower Reservoir. Mahan River flows in southwest direction.
v. Details of Solid waste/ Hazardous waste generation/ Muck and its management will be covered in EIA report.
vi. Status of Litigation Pending against the proposal, if any. No
vii. The salient features of the project are as under:-

EAC Meeting Details:

EAC meeting/s	49th Meeting
Date of Meeting/s	18.07.2023
Date of earlier EAC meetings	Nil

Project details:

Name of the Proposal	Kharauli Pumped Storage Project
Location (Including coordinates)	Upper reservoir: 82°59'20"E; 23°29'03"N (to be constructed new) Lower reservoir: 82°59'09"E; 23°29'34"N (Common with proposed Mahan II SHEP)
Inter- state issue involved	No
Seismic zone	Zone-II

Category details:

Category of the project	A
Provisions	
Capacity / Cultural command area (CCA)	500 MW
Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	Nil

Electricity generation capacity:

Powerhouse Installed Capacity	500 MW
Generation of Electricity Annually	1095.00 MU
No. of Units	3 nos. (3 X 166.66 MW)

ToR Details:

Cost of project	2374.96 Cr.
Total area of Project	51.0 ha
Height of Dam from River Bed (EL)	Upper Dam – 18 m
Length of Tunnel/Channel	2250 m
Details of Submergence area	31.0 ha
Types of Waste and quantity of generation during construction/ Operation	Muck from excavation, solid waste from labour colony and construction waste
E-Flows for the Project	NA
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 b) EAC as per CIA&CC study of River Basin. If not the E-Flows maintain criteria for sustaining river ecosystem.	No

Muck Management Details:

No. of proposed disposal area/ (type of land- Forest/Pvt. land)	2.0 ha Private Land
Muck Management Plan	Will be Provided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Will be Provided in EIA/EMP report

Land Area Breakup:

Government land/Forest Land	No
Submergence area/Reservoir area	31.0 ha
Land required for project components	20.0 ha
Additional information (if any)	Nil

Presence of Environmentally Sensitive areas in the study area

Forest Land/ Protected Area/ Environmental Sensitivity Zone		**Details of Certificate / letter/ Remarks**
Reserve Forest/Protected Forest Land	--	Tamorpingla WLS is at 4.6 Km distance from project site.
National Park	--	
Wildlife Sanctuary	--	

Court case details:

Court Case	Nil
Additional information (if any)	Nil

Affidavit/Undertaking details:

Affidavit/Undertaking	Enclosed
Additional information (if any)	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	Yet to Apply
Additional detail (If any)	Nil
Is FRA (2006) done for FC-I	Yet to Apply

Miscellaneous

Particulars	**Details**
Details of consultant	M/s. R S Envirolink Technologies Pvt. Ltd. (RSET) (NABET Accredited Consultant Organization) Certificate No : NABET/EIA/2225/RA0274 Validity : August 15, 2025 Contact Person : Mr. Ravinder Bhatia Name of Sector : River Valley and Hydroelectric Projects

	Category : A MoEF Schedule : I(C) Address: 403, Bestech Chambers, Block-B, Sushant Lok Phase I, Sector 43, Gurugram, Haryana - 122009 E-mail : ravi@rstechnologies.co.in Land Line : (0124) 4295383 Cellular : (+91) 9810136853
Project Benefits	• Pumped storage hydropower is a modified use of conventional hydropower technology to store and manage energy or electricity by moving water between an upper and lower reservoir. Currently, pumped storage round-trip or cycle energy efficiencies exceed 80%, comparing favorably to other energy storage technologies and thermal technologies. This effectively shifts, stores, and reuses energy generated until there is corresponding demand for system reserves and variable energy integration. This shifting can also occur to avoid transmission congestion periods, to help more efficiently manage transmission grid, and to avoid potential interruptions to energy supply. This is important because many of the renewable energy resources being developed (e.g., wind and solar) are generated at times of low demand and off-peak energy demand periods are still being met with fossil fuel resources, often at inefficient performance levels that increase the release of greenhouse gas emissions. • Further, pumped storage projects are critical to the national economy and overall energy reliability because it's: o Least expensive source of electricity, not requiring fossil fuel for generation o An emission-free renewable source o Balancing grid for demand driven variations

	○ Balancing generation driven variations ○ Voltage support and grid stability Apart from this, proposed PSP will also benefit the local community by creating employment opportunities and will result in upliftment of livelihood and socio-economic conditions.
Status of other statutory clearances	Forest Clearance - Online application seeking forest diversion for 47.0 Ha after receipt of ToR Approval. Alongside, other statutory clearances (as applicable) from State as well as Central government will be obtained post completion of Detailed Project Report.
R&R details	Details shall be evaluated during EIA/EMP Studies
Additional detail (If any)	Nil

49.3.3 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 terms of reference to the project for Kharauli Pumped Storage Project of capacity 500 MW in an area of 51.1 ha at Village Kharauli, Tehsil Oudgi, District Surajpur, Chhattisgarh by M/s Kharauli Energy Private Limited**.**

The project/activity is covered under Category A of item 1 (c) 'River Valley & Hydroelectric projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

The EAC noted that the project comes in river itself. The scheme is proposed with an installed capacity of 500 MW having 3 units of 166.66 MW each, located in the Oudgi Taluka of Surajpur district of Chhattisgarh envisages utilization of water from proposed Mahan SHP II reservoir (lower reservoir) and a new upper reservoir, which is to be constructed by making a bund. The water will be diverted through an Intake- HRC-Penstock to a Surface powerhouse to generate 500 MW of power by utilizing Rated turbine head of 233.0 m.

The water requirement of Kharauli PSP (On-Stream Open Loop Project) will be 0.19 TMC (non-consumptive use by recirculation) for establishing 500.00 MW pumped storage components with 6.0 hours storage capacity. Project comprises of Upper reservoir which shall be newly constructed and proposed Mahan SHP II reservoir will be used as lower reservoir.

These two reservoirs will be inter-connected with water conductor system and the generator and turbines installed at the powerhouse.

49.3.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** for grant of Standard ToR for conducting

EIA study for Kharauli Pumped Storage Project of capacity 500 MW in an area of 51.1 ha at Village Kharauli, Tehsil Oudgi, District Surajpur, Chhattisgarh by M/s Kharauli Energy Private Limited, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:

[A] Environmental Management and Biodiversity Conservation:

i. Cumulative Impact of project on carrying capacity and sustainability of Reservoir/ nalahs of catchment area, irrigation facilities due to tapping of water for filling reservoir.
ii. Action plan for survival of the rivulets in the study area.
iii. Alternative sites for various components shall be identified in terms of loss of forest area.
iv. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons.
v. 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 for power generation and thermal stratification. Accordingly, Environment Management plan shall be prepared.
vi. 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.
vii. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir.
viii. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with expert Govt. institutions/ Indian Council of Agriculture Research (ICAR)and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report.
ix. Source of construction material and its distance from the project site along with detailed transportation plan for construction material.
x. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report.
xi. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.
xii. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Govt. institutions/ Indian Council of Agriculture Research (ICAR)and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report.
xiii. MoU for water uses for the project signed and approved by concerned authority shall be submitted.
xiv. Environmental matrix during construction and operational phase needs to be submitted.
xv. Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used shall be mentioned in the EIA report.
xvi. Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic species found in the State.

xvii. Details of Flora and Fauna reported in submergence area, Nos. of tree along with their density and nomenclature of the tree species required to be felled for reservoir creation and other project component.
xviii. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.
xix. Stage-I Forest Clearance shall be obtained.
xx. Explore the possibilities to reduce Forest area for the construction of proposed project, Muck disposal sites should be outside the forest area.
xxi. Revised the project layout by shifting the muck disposal site to non forest area.
xxii. Submit environmental cost-benefit analysis and submit detailed alternate site analysis report, details of tree cutting involved in the project and explore the possibility to reduce the forest area.

[B] Socio-economic Study

i. Declaration by the project proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with any State in the project.
ii. 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.
iii. 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.
iv. Tentative no. of project affected families shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared.
v. Details of settlement in 10 km area shall be submitted.
vi. Details of Tribal population and resettlement plan if any.

[C] Muck Management/ Disaster 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 CEA/ CWC

[D] Miscellaneous

i. Pre-DPR Chapters viz. Layout Map and Power Potential Studies duly approved by CWC/CEA shall be submitted.
ii. 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.
iii. Both capital and recurring expenditure under EMP shall be submitted.
iv. 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.
v. Arial view video of project site shall be recorded and to be submitted.
vi. Detailed plan to restore wider roads and convert them into narrow upto 10m after construction of the project.
vii. Commitment for lifting of water during rainy season.

Agenda item No. 49.4

Renukaji Dam Project (40 MW) in an area of 1988.27 ha at Village Dadahu, District Nahan, Himachal Pradesh by M/s Himachal Pradesh Power Corporation Limited – Validity Extension of Environmental Clearance (EC) – reg.

[Proposal No. IA/HP/RIV/435307/2023; F. No. J-12011/53/2008-IA-I (R)]

49.4.1: The proposal is for grant of validity extension of environmental clearance (EC) of Renukaji Dam Project (40 MW) in an area of 1988.27 ha at Village Dadahu, District Nahan, Himachal Pradesh by M/s Himachal Pradesh Power Corporation Limited.

49.4.2: The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:

i. Environmental Clearance was accorded by MoEF&CC on 23.10.2009.
ii. The project construction work couldn't be started in the validity period of EC due to the following reasons:

The case for diversion of forest land was submitted on 25.09.2008, however, due to various issues involved and multiple inspections and subsequent recommendations of changes by forest authorities of State and Centre, Stage-I clearance could be obtained only on 20.02.2015. The funds for Project, including its clearances are to be provided by GoI and beneficiary states, however, due to non-signing of "Interstate Agreement" and CCEA approval, funds required for Stage-II forest clearance could not be received. To codify the rights and liabilities of all stake holders "Interstate Agreement" was signed on 11.01.2019. Thereafter, the Investment Clearance was accorded on 07.08.2020 by the Department of Water Resource, RD & GR Ministry of Jal Shakti Govt. of India and approval from Cabinet Committee on Economic Affairs (CCEA) was accorded on 15.12.2022. Then the Ministry of Jal Shakti Govt. of India released the amount of compensatory levies for deposition in State CAMPA Account for Stage-II clearance vide letter dated 30-03-2022 and the same has been deposited on 12-05-2022. Now, the compliance will be submitted for Stage-II forest clearance which is under process.

Request:
The proposal has been submitted for seeking the extension of validity of EC so as to continue on the project activities for the implementation.

49.4.3: The EAC during deliberations noted the following:

The proposal is for validity extension of Environmental Clearance of Renukaji Dam Project (40 MW) in an area of 1988.27 ha at Village Dadahu, District Nahan, Himachal Pradesh by M/s Himachal Pradesh Power Corporation Limited.

The Environmental Clearance was granted by the Ministry vide letter dated 23.10.2009. The validity of said EC was extended by the Ministry vide letter dated 6.11.2019 till 22.10.2022.

As per the Ministry's Notification S.O. 1807(E) dated 12.04.2022, the environmental clearance granted to River Valley project shall be valid for a period of thirteen years and

may be extended in respect of valid Environmental Clearance, by the regulatory authority concerned by a maximum period of two years.

Ministry has issued OM vide dated 11.04.2022 wherein it has mentioned that the time taken for obtaining Stage-II FC, after the grant of EC, may not be considered as part of the EC validity up to a maximum period of two years.

However, as per MoEF&CC notification S.O. 221(E) dated 18.01.2021 the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19). Accordingly, the EC dated 23.10.2009 shall be considered as valid till 22.10.2025 and as per the Ministry's Notification S.O. 1807(E) dated 12.04.2022 the validity of EC may be extended for two more year till 24.03.2027.

49.4.3: The EAC after detailed deliberations noted that as the EC dated 23.10.2009 is still valid till 22.10.2025, the project proponent may submit proposal for extension of validity of EC in 2025 before expiring EC. The proposal was therefore **returned in present form**.

Agenda item No. 49.5

Gond Major Irrigation Project (20.40 MW and CCA: 41250) at Village Jhara and Gotra, Tehsil Sarai and Kushmi, District Singrauli and Sidhi by M/s Water Resource Department, Govt. of Madhya Pradesh– Terms of References (TOR) – reg.

[Proposal No. IA/MP/RIV/435931/2023; F. No. J-12011/36/2023-IA.I (R)]

49.5.1: The proposal is for grant of ToR to the project for Gond Major Irrigation Project (20.40 MW and CCA: 41250) at Village Jhara and Gotra, Tehsil Sarai and Kushmi, District Singrauli and Sidhi by M/s Water Resource Department, Govt. of Madhya Pradesh**.**

49.5.2: The Project Proponent and the accredited Consultant M/s. R S Envirolink technologies Pvt. Ltd., made a detailed presentation on the salient features of the project and informed that:

i. The proposal is for ToR to the project Gond Major Irrigation Project (20.40 MW and CCA: 41250) located at Village Jhara and Gotra, Tehsil Sarai and Kushmi, District Singrauli and Sidhi, Madhya Pradesh by M/s. Water Resource Department, Govt. of Madhya Pradesh
ii. The project proposal was considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 9th meeting held during 24/10/2017 and recommended for grant of Terms of References (ToRs) for the Project. The ToR has been issued by Ministry vide letter No. J-1201/33/2017-IA-I(R); 29/11/2017.
iii. The project is listed at S.N. 1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and is appraised at Central Level by Expert Appraisal Committee (EAC).
iv. The estimated project cost is Rs. 1316.00 Crore. Total capital cost earmarked towards environmental pollution control measures will be worked out during EIA study as well as the Recurring cost (operation and maintenance).
v. There is Sanjay Dubri Tiger Reserve within 10 km distance from the project site.

River Gopad is flowing at a distance of 0 km in western and northern direction.

vi. Details of Solid waste/ Hazardous waste generation/ Muck and its management will be incorporated in EIA/EMP report.

vii. Status of Litigation Pending against the proposal, if any. No

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

Project details:

Name of the Proposal	Gond Major Irrigation Project
Location (Including coordinates)	Songarh/ Jhara Barrage is located near Jhara village, Sarai Tehsil, Singrauli district of Madhya Pradesh with the geographical latitude of 23°59' 21.69" N and longitude of 82°6' 8.03" E. The Gotra Barrage is located near Gotra village, Kushmi Tehsil, Sidhi district of Madhya Pradesh with the geographical latitude of 24°5' 24.49" N and longitude of 81°54' 21.15" E.
Inter- state issue involved	No
Seismic zone	Zone -III

Category details:

Category of the project	1(c) River Valley Projects
Provisions	
Capacity / Cultural command area (CCA)	41250 ha
Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	Nil

Electricity generation capacity:

Powerhouse Installed Capacity	20.40 MW
Generation of Electricity Annually	Captive use only
No. of Units	4 nos. (5.10 MW each)
Additional information (if any)	Nil

ToR Details:

Cost of project	1316.00 Cr.
Total area of Project	2380.104 ha
Height of Dam from River Bed (EL)	Songarh Barrage – 20.0 m Gotra Barrage – 16.0m
Length of Tunnel/Channel	0 km
Details of Submergence area	2327.104 ha
Types of Waste and quantity of generation during construction/ Operation	Muck from excavation, solid waste from labour colony and construction waste

E-Flows for the Project	Water will be stored during monsoon and diverted for irrigation. Available annual 75% dependable total yield at Songarh Barrage and Gotra Barrage is 678.642 MCM and 878.136 MCM respectively. There are 7 upstream projects for which water allocation (u/s commitment) is 5.76 MCM. Hence net available yield at Songarh Barrage and Gotra Barrage is 672.882 MCM and 872.376 MCM respectively. Approximately 95% of the yield is contributed by monsoon flow and only about 5% yield will be come from non-monsoon period. Therefore, to mitigate the impact of reduced flow or drying up of the river downstream of the dam; the project is designed with live storage/proposed utilization of 75.66 MCM and 43.30 MCM at Songarh Barrage and Gotra Barrage respectively, and remaining water from monsoon contribution will be continuously discharged for downstream and upstream users. The quantum works out to be 597.222 MCM and 829.076 MCM at Songarh Barrage and Gotra Barrage respectively. Almost 89% and 95% of the water will be available at Songarh Barrage and Gotra Barrage respectively in pre-project conditions. Therefore, no additional environment flow is required to be released during monsoon period. To ensure that downstream conditions do not change substantially during non-monsoon period, entire discharge of non-monsoon period is recommended to be released as environmental flow.
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River	No

Address: IA Division, Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan, Jor Bagh New Delhi - 110003

in which project located. If yes, then c) E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Basin. d) If not the E-Flows maintain criteria for sustaining river ecosystem.	

Muck Management Details:

No. of proposed disposal area/ (type of land-Forest/Pvt. land)	Not applicable as entire muck generated will be utilized in the constriction of earthen dams. If any quantity remains unutilized, same will be used for the construction of approach road.
Muck Management Plan	Will be studied in detail and will be provided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Will be studied in detail and will be provided in EIA/EMP report

Land Area Breakup:

Private Land	1110.824 ha
Government land/Forest Land	1093.710 ha Govt. Land/ 175.570 ha Forest Land
Submergence area/Reservoir area	2327.104 ha
Land required for project components	53.0 ha
Additional information (if any)	Total land required – 2380.104 ha

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	No	

National Park	Yes (Tiger Reserve)	Songarh Barrage is at a distance of 0.34 km from the core zone and its entirely inside the buffer zone of Sanjay Tiger Reserve. Distance between Gotra Barrage and core and buffer zone of Sanjay Tiger Reserve is 13 km and 2 km respectively. Letter No. मा.ची./2023/913 dated 13.02.2023 from the office of CF, Sanjay Tiger Reserve provides the above information.
Wildlife Sanctuary	Yes	As above

Court case details:

Court Case	Nil
Additional information (if any)	Nil

Affidavit/Undertaking details:

Affidavit/Undertaking	Enclosed
Additional information (if any)	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	Proposal No. FP/MP/IRRIG/23033/2016. The proposal is pending with user agency as it is under revision
Additional detail (If any)	Nil
Is FRA (2006) done for FC-I	Yes (as per earlier forest proposal)

Miscellaneous

Particulars	**Details**
Details of consultant	M/s. R S Envirolink Technologies Pvt. Ltd. (RSET) (NABET Accredited Consultant Organization) Certificate No : NABET/EIA/2225/RA0274 Validity : August 15, 2025 Contact Person : Mr. Ravinder Bhatia Name of Sector : River Valley and Hydroelectric Projects Category : A MoEF Schedule : I(C) Address : 403, Bestech Chambers,

Particulars	Details
	Block-B, Sushant Lok Phase I, Sector 43, Gurugram, Haryana - 122009 E-mail : ravi@rstechnologies.co.in Land Line : (0124) 4295383 Cellular : (+91) 9810136853
Project Benefits	On completion of the Project the following benefits can be derived: • Annual Rabi irrigation of 41250 Ha. • Rise in sub soil water level in the project area. • Development of fisheries in the reservoir. • Production of crops will increase Hence per capita income will increase. • Employment to local labour largely tribes during construction period.
Status of other statutory clearances	**Forest Clearance:** Online application seeking forest diversion for 383.868 was submitted on 23.10.2017 (Proposal No. FP/MP/IRRIG/23033/2016) As the location of the proposal is revised and forest land requirement has been reduced to 175.57ha, application seeking forest diversion will also be revised. Alongside, other statutory clearances (as applicable) from State as well as Central government will be obtained post completion of Detailed Project Report.
R&R details	522 families residing in 13 villages have been identified as project affected families. Out of the 522 families, 348 families are likely to be displaced. The process of R&R is yet to be initiated. Detailed R&R plan will be Provided in EIA/EMP report
Additional detail (If any)	Nil

49.5.3 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 terms of reference to the project for Gond Major Irrigation Project (20.40 MW and CCA: 41250) at Village Jhara and Gotra, Tehsil Sarai and Kushmi, District Singrauli and Sidhi by M/s Water Resource Department, Govt. of Madhya Pradesh**.**

The project/activity is covered under Category A of item 1 (c) 'River Valley & Hydroelectric projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

49.5.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** for grant of Standard ToR for conducting EIA study Gond Major Irrigation Project (20.40 MW and CCA: 41250) at Village Jhara and Gotra, Tehsil Sarai and Kushmi, District Singrauli and Sidhi by M/s Water Resource Department, Govt. of Madhya Pradesh, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:

[A] Environmental Management and Biodiversity Conservation:

i. A study shall be carried out on impact of wildlife due to construction of Gotra and Songarh Barrage, accordingly Wildlife Management plan shall be prepared in consultation with State Forest Department and be incorporated in the EIA/EMP report.
ii. Detailed wildlife conservation plan for Schedule –I species shall be prepared and incorporated in the EIA/EMP report.
iii. Impact on the funal diversity based on the hydrological alteration due to construction of barrage shall be studied.
iv. Cumulative Impact of project on carrying capacity and sustainability of Reservoir/ nalahs of catchment area / due to tapping construction of Barrage in the Gopad river.
v. Alternative sites for various project components shall be identified in terms of loss of forest area.
vi. Certificate from Chief Wildlife Warden shall be submitted mentioning that project boundary is located outside the Eco Sensitive Zone (ESZ).
vii. Water availability studies/hydrological regime study of various seasons be conducted and approved by CWC.
viii. Impact zone be decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons.
ix. Scope of watershed development in 10 km radius of the project shall be studied in consultation with Indian Council of Agriculture Research (ICAR)/ expert Govt. institutions and accordingly Watershed Management Plan shall be prepared with time schedule of implementation in the project catchment area.
x. Prepare Environmental Cost Benefit Analysis in terms of loss of forest ecosystem due to diversion of Forest land/loss of biodiversity and its impacts on ecosystem, water availability, water uses for generation of hydro power and Ecological flows in the stream/Nallah and Gopad river in study area 10 km from periphery of Project components.
xi. 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 for power generation and thermal stratification. Accordingly, Environment Management plan shall be prepared.
xii. 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.
xiii. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir.
xiv. Source of construction material and its distance from the project site along with detailed transportation plan for construction material.
xv. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report.
xvi. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.
xvii. MoU for water uses for the project signed and approved by concerned authority shall be submitted.

xviii. Environmental matrix during construction and operational phase needs to be submitted.
xix. Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used shall be mentioned in the EIA report
xx. 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.
xxi. Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic species found in the State.
xxii. Details of Flora and Fauna reported in submergence area, Nos. of tree along with their density and nomenclature of the tree species required to be felled for reservoir creation and other project component.
xxiii. Impact on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.
xxiv. Explore the possibilities to reduce Forest area for the construction of proposed project, Muck disposal sites should be outside the forest area.
xxv. Action plan for survival of the rivulets located in the study area.

[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 populace.
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/ Disaster 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 CEA/ CWC

[D] Miscellaneous.

i. Pre-DPR Chapters viz. Layout Map and Power Potential Studies duly approved by CWC/CEA shall be submitted.
ii. 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.

iii. Both capital and recurring expenditure under EMP shall be submitted.
iv. 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.
v. Arial view video of project site shall be recorded and to be submitted.

Agenda item No. 49.6

Chittamvalasa Pumped Storage Hydro-Electric Project (800 MW) in an area 366.79 ha at Village Kusumavalasa, Mandal Hukumpeta, District Alluri Sitarama Raju, Andhra Pradesh by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd. (NREDCAP) – Terms of References (ToR) – reg.

[Proposal No. IA/AP/RIV/432822/2023; F. No. J-12011/37/2023-IA.I (R)]

49.6.1: The proposal is for grant of Terms of References (ToR) to the project for Chittamvalasa Pumped Storage Hydro-Electric Project (800 MW) in an area of 366.79 ha at Village Kusumavalasa, Mandal Hukumpeta, District Alluri Sitarama Raju, Andhra Pradesh by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd. (NREDCAP).

49.6.2: The Project Proponent and the accredited Consultant M/s. Aarvee Asociates, Architects and Consultants Private Limited, made a detailed presentation on the salient features of the project and informed that:

i. The project is listed at S.No:1(C) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).
ii. **Background of the Project**: Chittamvalasa Pumped Storage Project (GPSP) is an Off-Stream Closed Loop Pumped Storage development, proposed with an installed capacity of 800MW/4964 MWH. The proposed Chittamvalasa PSP is located near Kusumavalasa village in Hukumpeta Mandal of Alluri Sitarama Raju district of Andhra Pradesh. The upper dam is located near Kusumavalasa village in Hukumpeta Mandal of Alluri Sitarama Raju district, Andhra Pradesh state having a geographical Latitude 18°12'38.91"N and Longitude 82°53'11.09"E. The lower dam is located near Kusumavalasa village in Hukumpeta Mandal of Alluri Sitarama Raju district, Andhra Pradesh state with the geographical Latitude 18°11'22.01"N and Longitude 82°54'23.11"E.
iii. **Land requirement:** The total land required for construction of project components, reservoir areas, muck dumping, construction camps and colony, etc., works out to be **366.79 ha (366.79 ha Private Land**).
iv. The Project comprises of development of upper & lower reservoirs with a gross storage capacity of 8.140 MCM (0.287TMC) & 10.493 MCM (0.371 TMC) respectively, out of which upper reservoir to be constructed with maximum dam height of 57 m (from river bed) to create the desired storage capacity while the lower reservoir will have maximum height of 61 m (from river bed) constructed at the downhill. The land required for the proposed upper reservoir and intake is **91.02** ha and the land required for the proposed lower reservoir and intake is **137.97** ha
v. The one-time filling of the PSP reservoir will be carried out from **Raiwada Reservoir,** which is about 6.0 Kms from the PSP lower reservoir. The scheme of operation for the project is with 6.2 Hours of peak power per day and 7.04 Hours

for pumping back the water to the upper reservoir. Water will be used cyclically for energy storage and discharge. Evaporation losses, if any will be recouped periodically.

vi. **Alternative studies**: Considering the more R&R issue in Alternative-2, Alternative-1 seems more feasible as compared to Alternative-2. Based on the comparative study, Alternative-1 is more feasible compared to Alternative-2. Considering Techno-Economic parameters, Alternative-1A with underground powerhouse is selected for further study
Hence, **Alternative-1 is considered for further study.**

vii. Total land area is 36,67,900 m^2. Greenbelt will be develop in an area of 7.90 % i.e. 2,90,000 m^2 out of total area of the project.

viii. Generation of Power During Peak Hours: The Project will generate 800 MW of peak power for about 6.2 hours by utilizing a design discharge of 332.96 cumec with a rated head of 273.23 m and will utilize 880 MW to pump 7.417 MCM (0.262 TMC) of water to the upper reservoir in 7.04 hours

ix. **Project Cost**: The estimated project cost is Rs.3,677.79 Crores. Total Employment will be 1,500 persons as direct & indirect.

x. **Environmental Sensitivity**: There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. The proposed project site area is not passing through the forest area.

xi. **Estimated Muck generation:** About total 23 Lakh cum of excavated muck will be safely dumped in the designated muck dumping yard to mitigate the environmental hazard. An area of 23 Ha of private land has been earmarked for the Muck Dumping area. details are as under:

Quantity of muck =	23,00,000 Cum (for 4 years)
density of muck =	1300 kg/m^3
Quantity of muck in kg =	2990000000 kg for 4 years
	747500000 kg for 1 year
	7,47,500 TPA

xii. No Court cases, Public Interest Litigation are pending with the proposed Chittamvalasa PSP Project**.**

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

Project details:

Name of the Proposal	Chittamvalasa Hydro-Electric Pumped Storage Project (800 MW)
Location (Including coordinates)	The proposed Chittamvalasa PSP is located near Kusumavalasa village in Hukumpeta Mandal of Alluri Sitarama Raju district, Andhra Pradesh. The geographical coordinate of upper reservoir is at latitude 18°12'38.91"N and longitude 82°53'11.09"E. Similarly, the geographical coordinate of lower reservoir is at latitude 18°11'22.01"N and longitude 82°54'23.11"E.
Inter- state issue involved	No
Seismic zone	As per the seismic zonation map of India, the Project area lies in the seismic zone-II which falls in

	moderate zone.

Category details:

Category of the project	Category A
Provisions	Pumped Storage Project
Capacity / Cultural command area (CCA)	800 MW
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	Nil

Electricity generation capacity:

Powerhouse Installed Capacity	800 MW
Generation of Electricity Annually	1721.24 MU
No. of Units	4 (Each of 200 MW)

ToR/EC Details:

Cost of project	Total Hard Cost of the project is Rs. Rs.3,67,779.00 Lakhs (3677.79 Cr).
	Total cost of the project including IDC is Rs 429627.00 Lakhs (4296.27 Cr)
Total area of Project	366.79 Ha
Height of Dam from Riverbed (EL)	57 m for Upper reservoir dam and 61 m for Lower reservoir dam
Length of Tunnel/Channel	2 nos;8.4 m dia HRT – 376.96 m (L) 4 nos;5.8 m dia Unit TRT – 95.11 m (L) 2 nos;7.8 m dia Main TRT – 772.99 m (L) 2 nos; 6.5 m dia Main Pressure Shaft – 465.19 m (L) 4 nos; 4.8 m dia Branch Pressure Shaft – 68.79 m (L)
Details of Submergence area	The Submergence area of the proposed project area lies in agriculture land of 63 Ha.
Types of Waste and quantity of generation during construction/ Operation	Sewage and solid waste generated at the construction staff colony/ project colony shall be adequately treated/ disposed to avoid water pollution and associated public health problems. Adequate measures will be undertaken to dispose the sewage and waste generated from the labour camps. Appropriate management measures will be recommended as a part of the Comprehensive EIA study.

E-Flows for the Project	Stream flow is not disturbed by the project. The proposed project is an off-stream closed loop project with an installed capacity of 800MW/4964 MWH.
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. If not the E-Flows maintain criteria for sustaining river ecosystem.	N/A

Muck Management Details:

No. of proposed disposal area/(type of land-Forest/Pvt. land)	Low Lying Areas. An area of 23 Ha has been earmarked for the Muck Dumping area.
Muck Management Plan	The huge, excavated material shall be utilized in the construction of embankment dam with processing the excavated material. Moreover, the excavated material from underground works of tunnel and powerhouse will also be utilized for processing of aggregates for concrete. Thus, about total 23 Lakh cum of excavated muck will be safely dumped in the designated muck dumping yard to mitigate the environmental hazard. An area of 23 Ha has been earmarked for the Muck Dumping area.
Monitoring mechanism for Muck Disposal	The project authorities have identified suitable muck disposal sites which are not located near the riverbanks.

Land Area Breakup:

Private land	366.79 Ha
Government land/Forest Land	0 Ha/0 Ha
Submergence area/Reservoir area	The Submergence area of the proposed project area lies in agriculture land of 63 Ha. The proposed project is an off stream closed loop project with an installed capacity of

	800MW/4964 MWH. The land required for the proposed upper reservoir and upper intake is 91.02 ha and the land required for the proposed lower reservoir and lowerr intake is 137.97 ha.
Land required for project components	366.79 Ha

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	No	Under process
National Park	No	
Wildlife Sanctuary	No	

Court case details: Nil

Affidavit/Undertaking details: The undertaking by NREDCAP is provided along with this document

Previous EC compliance and necessary approvals: NA

Miscellaneous

Particulars	**Details**
Details of consultant	M/s Aarvee Associates Architects, Engineers and Consultants Pvt Ltd, Hyderabad
Project Benefits	The following benefits are anticipated from the project construction and operation phases: • The availability of alternative resources provided by developer in the rural areas will reduce the dependence of the locals on natural resources such as forest. • A number of marginal activities and jobs would be available to the locals during construction phase. • Developer bringing large scale investment to the area will also invest in local area development and benefit will be reaped by locals. • Education, medical, transportation, road network and other infrastructure will improve. • With increased availability of electricity, small-scale and cottage industries are likely to come up in the area.
Status of other statutory clearances	N/A

R&R details	N/A

49.6.3: 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 terms of reference to the project for Chittamvalasa Pumped Storage Hydro-Electric Project (800 MW) in an area 366.79 ha at Village Kusumavalasa, Mandal Hukumpeta, District Alluri Sitarama Raju, Andhra Pradesh by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd. (NREDCAP.

The project/activity is covered under Category A of item 1 (c) 'River Valley projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

44.9.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** for grant of Standard ToR for conducting EIA study for Chittamvalasa Pumped Storage Hydro-Electric Project (800 MW) in an area 366.79 ha at Village Kusumavalasa, Mandal Hukumpeta, District Alluri Sitarama Raju, Andhra Pradesh by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd. (NREDCAP, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:

[A] Environmental Management and Biodiversity Conservation:

i. Cumulative Impact of project on carrying capacity and sustainability of Reservoir/ nalahs of catchment area / due to tapping of water for filling reservoir due to presence of other proposed PSPs or hydroelectric project in close proximity of the project.
ii. Prepare Environmental Cost Benefit Analysis in terms of loss of Forest ecosystem due to diversion of Forest land/loss of biodiversity and its impacts on ecosystem, water availability, water uses for generation of hydro power and Ecological flows in the Raiwada Reservoir/ Streams and d/s of Dam on River Sharada at Devarapalli, in study area.
iii. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons.
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 for power generation 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. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir.
vii. Source of construction material and its distance from the project site along with detailed transportation plan for construction material.

viii. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report.
ix. Certificate and certified map from Chief Wildlife Warden shall be submitted mentioning that project boundary is located outside the Eco Sensitive Zone (ESZ).
x. A detailed wildlife conservation plan for Schedule –I species be prepared duly approved by the Chief Wild Life Warden be submitted.
xi. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.
xii. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Govt. institutions/ Indian Council of Agriculture Research (ICAR)and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report.
xiii. MoU for water uses for the project shall be signed and approved by concerned authority.
xiv. Environmental matrix during construction and operational phase needs to be submitted.
xv. Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used shall be mentioned in the EIA report.
xvi. Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic species found in the State.
xvii. Details of Flora and Fauna reported in submergence area, Nos. of tree along with their density and nomenclature of the tree species required to be felled for reservoir creation and other project component.
xviii. Project impact on avi-fauna shall be studied and incorporated in EIA/ EMP report.
xix. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.

[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 populace.
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. Tentative no. of project affected families shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared.
v. Details of settlement in 10 km area shall be submitted.

[C] Muck Management/ Disaster 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 CEA/ CWC

[D] Miscellaneous.

i. Pre-DPR Chapters viz. Layout Map and Power Potential Studies duly approved by CWC/CEA shall be submitted.
ii. 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.
iii. Both capital and recurring expenditure under EMP shall be submitted.
iv. 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.
v. Arial view video of project site shall be recorded and to be submitted.
vi. Detailed plan to restore wider roads and convert them into narrow upto 10m after construction of the project.

Agenda item No. 49.7

Palamuru Rangareddy Lift Irrigation Scheme (Phase II: Irrigation) in Districts of Mahbubnagar, Rangareddy & Nalgonda, Telangana by M/s Irrigation and CAD Department, Government of Telangana – Reconsideration Environmental Clearance (EC) - reg.

[Proposal No. IA/TG/RIV/289525/2017; F. No. J-12011/31/2017-IA.I (R)]

49.7.1: The proposal is for grant of environmental clearance to the project for Palamuru Rangareddy Lift Irrigation Scheme (Phase II: Irrigation) in Districts of Mahbubnagar, Rangareddy & Nalgonda, Telangana by M/s Irrigation and CAD Department, Government of Telangana.

49.7.2: The proposal was last considered by the EAC in its 48th EAC meeting held on 27th June, 2023, wherein the EAC observed that the project proponent has not calculated the damage cost appropriately as per the SOP. The EAC suggested to revise the environmental damage cost, Remediation Plan and Community Augmentation plan. Also bring all calculations in one table.
The PP submitted the revised information as suggested by the EAC vide letter dated 13.07.2023 accordingly the proposal was considered in 49th EAC meeting held on 24.07.2023.

49.7.3: 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 the following:

[A] Package wise Details of Work Executed and Violation Period

Package Number	Work Description Under Package	Work commencement date	Date of halt	Total working days	% of work Completed

			of work		
1	Construction of Stage-1 Pumping Station	06-07-2016	22-11-2021	1596	42.37
2	Formation of Anjanagiri reservoir, Narlapur(V), Kollapur(M)	10-08-2016	31-10-2021	1551	89.44
3	Approach channel, Open canal including construction of CM & CD works and Head Regulator from Anjanagiri Reservoir at Narlapur (V) i.e., from Km 0.00 to Km 8.325 towards Veeranjaneya Reservoir at Yedula (V)	24-06-2016	01-11-2021	1341	72.30
4	Construction of Twin tunnel in between Narlapur Reservoir at Narlapur (v) and Yedula Reservoir at Yedula (v)	26-07-2016	22-11-2021	1904	66.62
5	Construction of Stage-2 Pumping station near Veeranjaneya Reservoir	21-07-2016	31-10-2021	1947	47.12
6	Earth work Exacavation of Approch channel, Open canal including construction of CM&CD Works and Head regulator from Veeranjaneya Reservoir at Yedula Village i.e., from km 0.00 to km 6.40 to Venakadri Reservoir,	13-07-2016	11-11-2021	1632	90.66
7	Construction of Tunnel from Km.6.400 to Km.25.400 between Veeranjaneya Reservoir at Yedula (V) to Venkatadri Reservoir at Vattem (V)	06-10-2016	21-11-2021	1797	55.05
8	Construction Of Stage -3 Pumping Station at	19-09-2016	17-11-	1873	48.00

	Vattem		2021		
9	Formation of Venkatadri Reservoir bund from Km 0.00 to Km Km.6.900/6.770 at Vattem(V), Bijinepally(M), Mahabubnagar District.	03-10-2016	18-11-2021	1365	80.00
10	Formation of Venkatadri Reservoir Bund from Km 6.770 to 10.750 at Vattem (V)	29-07-2017	16-11-2021	960	71.00
11	Formation of Venkatadri Reservoir Bund from Km 10.750/11.550 to Km 15.230/16.300	30-10-2016	20-11-2021	1540	63.35
12	Earth Work Excavation of Canal from Venkatadri Reservoir to Kurumutharya Reservoir & Construction of CM & CD works.	19-05-2016	13-11-2021	1728	74.00
13	Formation of Kurumurthyraya Reservoir Bund from Km.0.000 to Km.4.500 at Karvena (V) Boothpur (M) Mahabubnagar (Dist) of Palamuru Rangareddy Lift Irrigation Scheme.	18-10-2016	31-10-2021	1479	69.87
14	Formation of Kurumuthyraya Reservoir bund from Km. 4.500 to Km. 7.600 at Karivena (V), Boothpur (M), Mahabubnagar Dist.	18-10-2016	31-10-2021	1444	58.33
15	Formation of Kurumuthyraya Reservoir bund from Km. 7.600 to Km. 14.400 at Karivena (V), Boothpur (M), Mahabubnagar Dist.	18-10-2016	31-10-2021	1504	84.32
16	Construction of Stage-IV Pumping Station near Udandapur village of	09-04-2016	31-10-2021	1911	36.00

	Jadcherla Mandal in Mahabubnagar District.				
17	Formation of Udandapur Reservoir from Km 0.000 to Km 6.300 at Udandapur (V), Jadcherla (M), Mahabubnagar District	03-10-2019	31-10-2021	778	58.23
18	Formation of Udandapur Reservoir from Km 6.300 to Km 15.875 at Udandapur (V), Jadcherla (M), Mahabubnagar District	06-07-2018	31-10-2021	1092	48.38

The project proponent had been refrained from causing further damage to environment and as principal polluter the PP is responsible to compensate for causing damage to the environment as per Polluter Pays Principle, the project proponent has to undertake activities relating to Remediation Plan, Natural Resources Augmentation Plan and Community Resources Augmentation Plan in a time bound manner i,e:3 Years Time in an effort to restore the environmental damage afflicted including its implication on social aspects. Due to linear configuration of project, the work under the project is not concentrated at one point but spatially spread. The human settlement which are within 3 km from the project area under Phase-I works have been considered as project impacted villages (Table 13.29). There are in all 58 villages which can be catagorised as project impact villages of which 43 are covered in 8 mandals of Nagarkurnool district and 15 in 3 mandals of Mahabubnagar district. Accordingly, the various damages cost is enumerated. The summary cost of Remediation Plan, Natural Resources and Community Resources Augmentation Plan is Rs 153.70 Crores. As per Para11 Step:3 B viii of the OM dated, 7th July 2021, the project proponent shall be required to submit bank guarantee of equivalent amount i.e., Rs 153.70 Crores with the TPCB subject to recommendation of quantum of such amount by MoEF&CC. The said bank guarantee shall be released after successful implementation of the Remediation Plan, Natural and Community Resource Augmentation Plan. Besides this the project proponent shall have to pay the penal amount of Rs 106.00 Crores to TPCB.

[B] Summary of Environmental Damage Cost

S.N.	Environment Attributes	Damage cost (Rs lakh)
1	Land Environment	
(i)	Cost Compensation due to Improper Implementation of Muck Management	520.78
(ii)	Cost Compensation due to incomplete Implementation of Green Belt	2895.00
(iii)	Cost Compensation due to Partial Management of Solid Waste	368.00

2	Air Environment	
(i)	Damage Cost due to emission from excavation/Quarrying	5087.86
(ii)	Damage Cost due to emission from Dozing (Heavy Construction)	667.32
(iii)	Damage Cost due to emission from Transportation of construction Material	2383.33
3	Noise and Vibration	342.72
4	Wildlife Conservation and Biodiversity Plan	82.00
5	Water Environment (Compensation for Non-Provision of STP)	155.88
6	Cost Saving from Partial Implementation of Provision Under Sanitation Plan	230.19
7	Cost Saving from Partial Implementation of Fuel Wood Saving Devices	182.24
8	Cost Saving from Partial Implementation of Provision under OHS	191.77
9	Avoidance/Substitution cost saved in respect of other EMP	2262.00
Total		**15369.09**

[C] Remediation Plan with Year wise Break-up of Budget

S.No.	**Environmental Attribute**	**Plan Activity**	**Location**	**Quantity**	**Unit Rate (Rs)**	**Total Budget (Rs lakh)**	**Year wise Break-up**		
							I-Year	**II-Year**	**III-Year**
1 (a)	Air & Noise	Avenue plantation @ 5000 Nos/ village and areas between project and habitation with 3 years maintenance and cost of tree guard.	58 villages	290000	800/tree	2320.00	928.00	928.00	464.00
(b)		Community plantation /wind barriers in each of villages @ 1500 Nos/ village with 20% fruit	58 villages	87000	800/tree	696.00	280.00	280.00	136.00

Address: IA Division, Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan, Jor Bagh New Delhi - 110003

		bearing 30% fodder trees with 3 years maintenance							
(c)		Supply of battery-powered Ride on Road Sweeper, 1800 watt, 2000mm including O&M charges for 3 years.	58 villages	58	2000000/No.	1160.00	460.00	460.00	240.00
2 (a)	Water Environment	Constructing RWH-Percolation tank one in each of PA villages	58 villages	58	1500000/each	870.00	345	345	180
(b)		1000 LPH SS RO Plant (ISI Standard) Including Storage Tanks and Installation 2 in each PA villages i/c 3-year maintenance	58 villages	116	400000/each	464.00	184	184	96
(c)		Renovation of water bodies like ponds, including desilting in nearby PA villages	58 villages	116	600000/each	696.00	278.40	278.40	139.20
3 (a)	Ecology& Biodiversity	Development of grazing and pasture land with proper fencing in PA Villages close to reservoirs	20 villages	26	2500000/each	650.00	260.00	260.00	130.00
(b)		Construction of Botanical Park for conservation of local/	Nagarkurnool Mahabubnagar	2	10000000/each	200.00	80.00	80.00	40.00

Address: IA Division, Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan, Jor Bagh New Delhi - 110003

		endemic species							
(c)		Subsidy for intensive aquaculture in new ponds in areas nearby 5 reservoirs	Nagarkurnool Mahabubnagar	207	100000/person	207.00	80.00	80.00	47.00
Total						7263.00	2895.40	2895.40	1472.20

[D] Natural Resource Augmentation Plan with Year wise Break-up of Budget

S. N.	Environmental Attribute	Plan Activity	Location	Quantity	Unit Rate (Rs)	Total Budget (Rs lakh)	Year wise Break-up		
							I-Year	II-Year	III-Year
1 (a)	Land Environment	Reclamation of dump sites through conversion into community nursery sapling growing centre, 5 each in 2 districts, and issue of seeds and fertilizers for farmers located within 5 KM of project construction sites:	Nagarkurnool Mahabubnagar	10	2500000/each	250.00	100.00	100.00	50.00
(b)		Construction of Solid waste processing yard and supply & installation of machineries with handling	Nagarkurnool Mahabubnagar	4	10000000/each	400.00	200.00	100.00	100.00

		capacity of 10 Tons per day (Wet & Dry Processing) each 2 each in 2 districts							
2 (a)	Energy Conservation	Providing Solar Street Lighting (40 Watt) 30/31 in each PA villages and 200 in villages abutting 5 reservoirs, i/c all accessories and 3 years maintenances	58 villages	2789	40000/each	1115.60	446.24	446.24	223.12
(b)		Subsidy for arranging and installation of Solar submersible water pumps (5 HP) i/c all accessories 3 years maintenances @ 19/20 Nos each in each of PA villages.	58 villages	1131	200000/each	2262.00	904.80	904.80	452.40
Total						4027.60	1651.04	1551.04	825.52

[E] Community Resource Augmentation Plan with Year wise Break-up of Budget

S. N.		Plan Activity	Location	Quantity	Unit Rate (Rs)	Total Budge	Year wise Break-up

	Environmental Attribute					t (Rs lakh)	I-Year	II-Year	III-Year
1	Air & Noise								
(a)		Updation/renovation/ repair of public buildings like Community Centres, Library, Yuva (Youth) Mandal Centres, Anganwadi/Gymnasium and Public Toilets in locations within 5 KM of project construction sites @15 locations each in 2 districts	Mandals	15	3000000/each	450.00	180.00	180.00	90.00
(b)		Construction of Bus Shelters one each in villages / towns nearby project area	58 villages	58	500000/No	290.00	115.00	115.00	60.00
2 (a)	Socio-economic	Supply of Ambulance with basic life care amenities one each to nearby Government Primary Health Centres /CHC /District Hospital,	PHC/CHC near the affected villages	31	2000000/each	620.00	240.00	240.00	140.00
(b)		Supply, installation, and 3 years maintenances of medical equipment's like X- ray machine, Vitals Monitors, Stretchers, Wheelchair	PHC/CHC near the affected villages	25	1000000/each	250.00	100.00	100.00	50.00

Address: IA Division, Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan, Jor Bagh New Delhi - 110003

		and Furniture one set each in nearby village Government primary health centres / CHC hospital of project area							
(c)		Supply, installation, and 3 years maintenances of Haemodialysis machine with RO System and Neo Natal Ventilator 2 each in nearby CHC /district hospital of project area	CHC/ District Hospital	20	5000000 /each	1000.00	400.00	400.00	200.00
(d)		E-learning for schools by providing computers	Affected Village schools	147	1000000 /each	1470.00	588.00	588.00	294.00
Total						**4080.00**	**1623.00**	**1623.00**	**834.00**

[F] Compliance of Grievances of Public Hearing vide O.M dated 30th September, 2020 in Superseding of CER

S.N.	Description	Cost proposed under LADP (Rs lakh)	Cost proposed under other EMP (Rs lakh)	Total Cost (Rs lakh)	I-Yr	2 Yr	3Yr
1	Health Care	394	0	394	158	158	78
2	Education	847	0	847	290	290	267
3	Infrastructure Development	1966	2000	3966	1322	1322	1322
4	Sanitation	129	0	129	43	43	43
5	Skill Development	385	0	385	154	154	77
6	Environment Enhancement	679	4415	5094	1698	1698	1698
		4400	**6415**	**10815**	**3665**	**3665**	**3485**

Address: IA Division, Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan, Jor Bagh New Delhi - 110003

[G] Abstract of Cost of Plan, Penal Amount & Bank Guarantee Amount

S.N.	Particular/Plan	Estimated Cost (Rs. Crore)
1	Remediation Plan	72.63
2	Natural Resources Augmentation Plan	40.27
3	Community Resources Augmentation Plan	40.80
Total		**153.70**
4	Equivalent Amount of Bank guarantee	153.70
5	Penalty as per para 12a(i) & 12.2 of the OM, dated 7th July, 2021 on total project cost incurred i.e Rs. 21200 Crores.	106.00

49.7.4 The EAC during deliberations noted the following:

The proposal is for grant of environmental clearance for Palamuru Rangareddy Lift Irrigation Scheme (Phase II: Irrigation) in Districts of Mahbubnagar, Rangareddy & Nalgonda, Telangana by M/s Irrigation and CAD Department, Government of Telangana. The project/activity is covered under category 'A' of item 1 (c) 'River Valley projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and appraised at Central level by the sectoral EAC in the Ministry as category 'A'.

The EAC noted that the ecological damage assessment report has been revised as per SOP issued by the Ministry vide Office Memorandum no. 22-21/2020-IA.III dated 7.07.2021. The Project Proponent have to ensure the necessary steps towards successful implementation Remediation Plan, Natural Resources and Community Resources Augmentation Plan, as appraised by the EAC, in time bound manner.

The EAC examined the public hearing report and observed that the public hearing was conducted by Telangana State Pollution Control Board on 10th August, 2021 simultaneously in six districts namely Mahabubnagar, Nagarkurnool, Rangareddy, Vikarabad, Nalgonda and Narayanpet and major issues emerged were about land acquisition, compensation and water supply in drought prone area.

The EAC also observed the directions passed by the Hon'ble National Green Tribunal (NGT) vide order dated 22.12.2022 in the matter of OA No. 212 along with OA No. 148. The Hon'ble NGT has directed for constitution of an expert committee for suggesting the remedial measures for restoration of the ecological/social damage caused due to construction project without obtaining the Environmental Clearance. The project proponent must follow the recommendations of the expert committee in true sense.

The EAC agreed about the project requirement in the region but implementation of remedial measures for restoration of ecological sanctity is utmost requirement for ensuring the sustainable development.

49.7.4 The EAC after examining the information submitted by the project proponent on PARIVESH and as presented during the meeting **recommended** the proposal for grant of Environmental Clearance for Palamuru Rangareddy Lift Irrigation Scheme (Phase II: Irrigation) in Districts of Mahbubnagar, Rangareddy & Nalgonda, Telangana by M/s Irrigation and CAD Department, Government of Telangana, under the provisions of EIA Notification, 2006 and as amended with subject to compliance of applicable Standard EC conditions with the following additional conditions:

[A] Environmental Management and Biodiversity Conservation:

1. The Ecological/Social damage shall be restored in time bound manner as per Ecological Damage Assessment Report appraised by the EAC. EAC recommended for an amount of Rs 153.70 crore towards Remediation plan, Natural Resources Augmentation Plan and Community Resources Augmentation Plan to be spent within a span of three years.
2. The remedial measures to be suggested by the expert committee constituted as per directions of the Hon'ble NGT in the matter of OA No. 212 along with OA No. 148 vide order dated 22.12.2022 shall be implemented.
3. Project Proponent shall be required to submit a bank guarantee of an amount of Rs. 153.70 crore towards Remediation plan, Natural Resources Augmentation Plan and Community Resources Augmentation Plan with the SPCB prior to the grant of EC and proof will be submitted to the MoEF&CC.
4. Remediation plan shall be completed in 3 years whereas bank guarantee shall be for 5 years. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the EAC and approval of the regulatory authority.
5. The State Government/SPCB to take action against the project proponent under the provisions of section 19 of the E (P) Act, 1986 and further no consent to operate to be issued till the project is granted EC. The action details shall be submitted to the Ministry prior to grant of Environmental Clearance.
6. The project proponent shall submit Rs. 106.00 crore as penalty as per Ministry's SOP vide OM dated 7.07.2021 under Polluters Pay Principle to the State Pollution Control Board.
7. Extensive plantation of native perennial trees shall be done along all the proposed reservoirs for developing tree layer of 500-meter width with 90% survival rate. Time bound action plan in this regard shall be prepared and implemented in association with State Forest Department and local panchayats.
8. 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.

9. Ambient Air Quality Monitoring Stations for real time data to be installed at project site, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.

10. Watershed development plan shall be prepared in consultation with ICAR/expert Govt. institute and be implemented within 10 km radius of the projects. Implementation status be submitted in the 6 monthly compliance report.

11. Environment Management Cell shall be created in the project consisting environmental officers having post graduate degree in environmental sciences/Environmental Engineering to monitor implementation of Environment Management Plan in the project. The head of the Environment Cell shall report directly to the head of the project.

12. Wildlife conservation plan shall be implemented after due approval of the State PCCF/CWLW. Biodiversity Management Committee (BMC) shall be constituted for Monitoring and Evaluation of implementation of Biodiversity Conservation Plan

and Wildlife Conservation Plan as approved by the PCCF/CWLW. The BMC shall comprise MoEF&CC representative from concerned regional office.

[B] Disaster Management

1. Necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and subsequent amendments thereof.
2. Disposal of the excavated muck to be carried out in scientific manner. Restoration and reclamation plan of muck disposal area shall be prepared and shall be taken up pari passu with construction work and to be completed before commissioning of the project.
3. 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/canals 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.
4. 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.
5. 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.

[C] Socio economic

1. 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 populace.
2. The budget for plantation and other EMP activities should be revised as per existing rate.
3. R.O drinking water facilities be provided to villagers @ 10 households/Tap water.
4. Under CER activities, preference should be given to strengthen the basic amenities in the project affected villages like maintaining drinking water supply, providing health care facilities, etc.
5. Preference to be given to the local villagers as per the requirements and suitability, in the job/ other opportunities in the project, etc. Measures to be taken to develop skills of the local villagers particularly with respect to the trades related to construction works such as electrician, welder, fitter, etc.

[D] 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. Bio-Gas plant (Deen Bandhu Model of Bio-Gas) shall be installed in the Project affected area for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.
3. Solar panel be provided to the families living in rural areas within 10 km radius of project.
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.

5. An institutional mechanism to be developed to ensure the preference of jobs to PAFs and also a policy for preferential treatment for award of sundry works to the PAFs and their dependents.
6. The compliance of above conditions shall be monitored by IRO, MoEF&CC through regular site visit twice in a year.

Agenda item No. 49.8

Basania multi-purpose project (CCA 8780 and 100 MW) in an area of 6343.0 Ha Village Odhari, Tehsil Ghugari District Mandla (Madhya Pradesh) by M/s Narmada Valley Development Authority Madhya Pradesh - Terms of Reference (ToR) - reg.

[Proposal No. IA/MP/RIV/413201/2023; F. No. J-12011/01/2023-IA.I (R)]

49.8.1: The proposal is for grant of Terms of References (ToR) to Basania multi-purpose project (CCA 8780 and 100 MW) in an area of 6343.0 Ha Village Odhari, Tehsil Ghugari District Mandla (Madhya Pradesh) by M/s Narmada Valley Development Authority Madhya Pradesh.

49.8.2: The proposal was earlier considered by the EAC in its 40th meeting held on 25/01/2023 for grant of Terms of Reference, wherein the EAC deferred the proposal for want of additional information. The project proponent has submitted the additional information as under: -

Observation of the EAC	**Reply submitted by the project proponent**
The EAC noted that the project cover area involves around 2107 ha of forest land for establishment of project and its components. No exercise has been done for optimization of forest land as no alternative site analysis was done before submitting the application for TOR. In view of the fact that large chunk of forest land is required for development of project as well as the project cover area is also having tribal population, the EAC suggested to submit the Alternative Site Analysis in terms of ecological aspects viz. loss of Forest ecosystem due to diversion of Forest land/loss of biodiversity and its impacts on productivity of the ecosystem and likely impacts of project on Tribals etc.	A study was carried out by DMR hydro-engineering & Infrastructures Ltd., engineering consultant for the project and a "Study Report on Project Analysis" was prepared. The report covered alternative site analysis and optimization of the forest land. In order to meet the requirement of storing the monsoon flows of Narmada River upstream of Bargi dam reservoir and upstream of Mandla town, three alternative locations have been studied for dam site selection. Any other location upstream of Basania alternative III does not meet the yield requirement due to reduction in catchment area. These locations are spread over a length of 34Km of Narmada River starting from 23 Km u/s of Mandla town and 91 km downstream of proposed Raghavpur MPP. Further downstream locations were not possible due to presence of Mandla town. For optimization of forest land, detailed mapping of the forest land of finally selected alternative III has been carried

Address: IA Division, Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan, Jor Bagh New Delhi - 110003

	out with the help of data sourced from forest department. Forest land requirement for the project has been reduced to 1788 ha, from 2107 ha as per earlier proposal which was discussed in 40th meeting. Project proponent further submitted, that they will study in detail, all the likely impacts of the project on tribal population during EIA study and shall prepare a tribal development plan.

49.8.3 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 Terms of Reference to the project for Basania multi-purpose project (CCA 8780 and 100 MW) in an area of 6343.0 Ha Village odhari, Tehsil Ghugari District Mandla (Madhya Pradesh) by M/s Narmada Valley Development Authority Madhya Pradesh.

The project/activity is covered under Category A of item 1 (c) 'River Valley projects' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

The EAC also noted that there is a representation received raising concerns about project viability, water availability for the project and need for studying the cumulative impacts of project in the region.

49.8.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** for grant of Standard ToR for conducting EIA study for Basania multi-purpose project (CCA 8780 and 100 MW) in an area of 6343.0 Ha village Odhari, Tehsil Ghugari District Mandla (Madhya Pradesh) by M/s Narmada Valley Development Authority, Madhya Pradesh under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:

i. Cumulative Impact of project on carrying capacity and sustainability of Narmada River and Reservoir/ nalahs of catchment area / due to construction of the project.
ii. Forest land should be minimized to ensure environmental sustainability of the area.
iii. Comments of Narmada Control Authority on the proposal shall be submitted along with EIA/EMP report.
iv. Prepare Environmental Cost Benefit Analysis in terms of loss of Forest ecosystem due to diversion of Forest land/loss of biodiversity and its impacts on ecosystem, water availability, water uses for irrigation and generation of hydro power and Ecological flows in the stream/Nallah and Narmada river in study area 10 km from periphery of Project components.
v. Baseline data as mentioned in Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. 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. The ground water level at 10 locations shall be measured in project area in all three seasons.

vii. 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 for power generation and thermal stratification. Accordingly, Environment Management plan shall be prepared.

viii. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir.

ix. Source of construction material and its distance from the project site along with detailed transportation plan for construction material.

x. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report.

xi. A detailed wildlife conservation plan for Schedule –I species be prepared and submitted with EIA/EMP report after due approval of the Chief Wild Life Warden.

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

xiii. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Indian Council of Agriculture Research (ICAR)/ Govt. institutions and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report.

xiv. MoU for water uses for the project shall be signed and approved by concerned authority. Environmental matrix during construction and operational phase needs to be submitted.

xv. Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used shall be mentioned in the EIA report.

xvi. Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic species found in the State.

xvii. Details of Flora and Fauna reported in submergence area, Nos. of tree along with their density and nomenclature of the tree species required to be felled for reservoir creation and other project component.

xviii. Project impact on avi-fauna shall be studied and incorporated in EIA/ EMP report.

xix. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.

[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 populace.

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

Details of settlement in 10 km area shall be submitted.

[C] Muck Management/ Disaster 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 CEA/ CWC.

[D] Miscellaneous.

i. Pre-DPR Chapters viz. Layout Map and Power Potential Studies duly approved by CWC/CEA shall be submitted.
ii. 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.
iii. Both capital and recurring expenditure under EMP shall be submitted.
iv. 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.
v. Arial view video of project site shall be recorded and to be submitted.
vi. Detailed plan to restore wider roads and convert them into narrow upto 10m after construction of the project.

The meeting ended with the vote of thanks to Chair.

****

ANNEXURE

ATTENDANCE LIST

S. No	Name& Address	Role	Attendance
1.	Dr. A. K. Malhotra	**Chairman**	P
2.	Dr. Uday Kumar R.Y	Member	P
3.	Dr. N. Lakshman	Member	P
4.	Dr. Mukesh Sharma	Member	P
5.	Dr. Amiya Sahoo	Representative of CIFRI	P
6.	Dr. J. A. Johnson	Representative of WII	P
7.	Shri K. Gowrappan	Member (Co-Opted for agenda item No. 49.7)	
8.	Shri Yogendra Pal Singh	Member Secretary	P
9.	Dr Saurabh Upadhyay	Scientist C, MoEF&CC	P

****

APPROVAL OF THE CHAIRMAN

From: ajitkumarmalhotra463@gmail.com
To: "Yogendra Pal Singh" <yogendra78@nic.in>
Sent: Thursday, August 10, 2023 8:53:27 AM
Subject: Re: Draft minutes of the 49th EAC (RV&HEP) meeting held on 24.07.2023-reg

Dear Mr. Singh,
I have gone through the draft minutes and find them in order. As such they are approved.

Dr. A.K.Malhotra

Address: IA Division, Ministry of Environment, Forest and Climate Change,
Indira Paryavaran Bhawan, Jor Bagh New Delhi - 110003