सत्यमेव जयते

Government of India
Ministry of Environment, Forest and Climate Change
IA Division
(River Valley and Hydroelectric Projects)
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Minutes of 44TH MEETING OF EXPERT APPRAISAL COMMITTEE meeting River Valley and Hydroelectric Projects held from 10/12/2025 to 10/12/2025 **Date:** 18/12/2025

MoM ID: EC/MOM/EAC/343558/12/2025

Agenda ID: EC/AGENDA/EAC/343558/12/2025

Meeting Venue: N/A

Meeting Mode: Virtual

Date & Time:

10/12/2025	10:30 AM	05:30 PM

1. Opening remarks

The 44th meeting of the EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on through virtual mode, under the Chairmanship of Prof. G. J. Chakrapani.

2. Confirmation of the minutes of previous meeting

The Minutes of the 43rd EAC meeting held on 12th November, 2025 were confirmed.

3. Details of proposals considered by the committee

Day 1 -10/12/2025

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Hiran Pumped Storage Project by **RENEW GREEN (TNJ TWO) PRIVATE LIMITED** located at **JABALPUR,MA**

DHYA PRADESH			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/MP/RIV/557786/2025	J-12011/42/2025-IA.I(R)	25/11/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.1.2. Project Salient Features

44.1.1 The proposal is for grant of Terms of Reference (ToR) to the project Hiran Closed-Loop Pumped Storage Project (1000 MW) in an area of 300 Ha located at Tala, Kanra, etc., Sub-District Patan & Jabera, District Jabalpur and Damoh, Madhya Pradesh by M/s Renew Green (Tnj Two) Private Limited.

44.1.2 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. Hiran Standalone Pumped Storage Project is a self-identified project, envisages construction of upper reservoir located near Tala village in Jabera tehsil of Damoh district whereas the lower reservoir is located near Akona/Duhara villages in Patan tehsil of Jabalpur district of the state.

ii. Hiran PSP is planned to be constructed with two reservoirs, i.e., an upper and a lower reservoir, which will impound pumped river water by means of constructing CFRDs. These reservoirs will be connected through a surface powerhouse. The plant is envisaged to operate on a closed-loop system with storage for 6 hours of peaking.

iii. The proposed project site is in Damoh and Jabalpur districts in the state of Madhya Pradesh. The upper reservoir is located near Tala village in Jabera tehsil of Damoh district is about 90 km from Jabalpur airport and lower reservoir is located near Akona/Duhara villages in Patan tehsil of Jabalpur district is about 60 km from Jabalpur airport.

iv. The geographical coordinates of the proposed upper reservoir are at latitude 23°26'18.67" North and longitude 79°45'12.78" East and that of lower reservoir are at 23°25'37.51" North and 79°44'59.22" East. The proposed rating of Pumped Storage Project is 1000 MW.

v. **Land requirement:** The total land required for the construction of various components and related works for Hiran PSP is estimated to be around 300.0 ha, out of which 183.5 ha is non-forest land and 116.5 ha is forest land. Diversion of forest land for non-forest purpose will be involved for construction of Hiran project components. Therefore, Forest Clearance is required to be obtained under Forest Conservation Act.

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

- Villages within the project area are small, scattered, and primarily agrarian. Population density is low compared to state averages.
- The project area comes under tribal belt represented mainly by Baiga, Gond & Saur, and their occupation is mainly based on Agriculture, livestock rearing, fishing and wage labour .
- Some people of these community also collect clay to manufacture bricks from Hiran reserved forest and biproducts of medicinal plants from the Tala reserve forest for their livelihood.
- Basic infrastructure such as schools, health facilities, and road networks exists but remains underdeveloped.

Parameters	Damoh District			Jabalpur District		
	Tala	Katangi	Amjhir	Akauna	Dohra	Charguwan
Households	19	362	13	22	77	101
Total Population	110	1368	75	86	333	443
Male Population	64	701	41	45	166	234
Female Population	46	667	34	41	167	209
Scheduled Caste (SC) Pop.	0	258	0	0	58	0
Scheduled Tribe (ST) Pop.	82	103	0	0	227	23

(Source: Census 2011; Mission Antyodaya 2020)

- The demographic profile of the villages surrounding the project area indicates that Katangi is the largest settlement with a total population of 1,368 residing in 362 households. In contrast, Amjhir is the smallest, with only 75 people and 13 households.
- Across all locations, the male and female populations are nearly balanced, though males slightly outnumber females in most villages.
- Scheduled Tribe (ST) populations are significant in several settlements, especially Dohra (227) and Tala (82). In contrast, Amjhir and Akauna report no ST population.
- The presence of Scheduled Caste (SC) populations is limited: only Katangi (258) and Dohra (58) report SC residents, while all other villages have zero SC population.

Two different alternatives have been studied for choosing the final layout of the project. The following aspects have been considered for formulation of alternative layouts.

· Maximum utilization of available head at the project site.
· Minimal area of Forest land acquisition to accommodate project components
· Topography and Geological considerations
· Development of economical and optimized layout
· Ease of construction.
· Operational consideration during the operations of the plant over its service life
· Surface Vs. Underground PH based on geology

Continuous peaking of 6 hours has been considered for fixing installed capacity and computation of annual energy.

Alternative – 1: Layout with **Surface Powerhouse** and other components of this scheme are Upper reservoir, Intake structure, Penstock / Pressure Shaft, Tail Race Outlet and Lower reservoir for the capacity of 1000 MW.

Alternative – 2: Layout with **Surface Powerhouse** and other components of this scheme are Upper reservoir, Intake structure, Penstock / Pressure Shaft, Tail Race Outlet and Lower reservoir for the capacity of 1000 MW.

Upper reservoir for Alternative-1 and Alternative-2 are located in the same plateau with

overlapping boundary. However, the locations of the lower reservoir for Alternatives 1 and 2 are different. Minimum distance between lower reservoirs is about 500 m.

Summary of Alternatives

S. No.	Description	Alternative-1	Alternative-2	Remarks
1	Type of Power House	Surface	Surface	
2	Water Source	Hiran River		**ALT-2 (SELECTED FOR ADOPTION)**
3	District	Damoh & Jabalpur		
4	Upper Reservoir			
	Lattitude/Longitude	23°26'18.67"N, 79° 45'12.78"E	23°26'18.67"N, 79° 45'12.78"E	
	Bed Level (m)	567	567	
	Max.Dam Height (m)	24	24	
	Length of Dam (m)	3435	3432	
	Type of Dam	CFRD	CFRD	
	Top of the Dam (m)	591	591	
	FRL (m)	587	587	
	MDDL (m)	570	570	
	Area at FRL (Ha)	77.7	78.07	
	Area at MDDL (Ha)	69.31	69.69	
	Live Storage capacity (MCM)	12.49	12.55	
5	**Lower Reservoir**			
	Latitude/Longitude	23°25'15.47"N, 79°44'45.61"E	23°25'37.51"N, 79°45'59.22"E	
	Bed Level (m)	367	367	
	Max Dam Height (m)	24	24	
	Length of Dam (m)	4596	3988	

S. No.	Description	Alternative-1	Alternative-2	Remarks
1	Type of Power House	Surface	Surface	
	Type of Dam	CFRD	CFRD	
	Top of the Dam (m)	391	391	
	FRL (m)	387	387	
	MDDL (m)	370	370	
	Area at FRL (Ha)	93.25	92.84	
	Area at MDDL (Ha)	81.9	83.04	
	Live Storage capacity (MCM)	14.88	14.94	
6	Total Discharge(cumecs)	577.97	580.82	
7	Max Head (m)	217	217	
8	Min Head (m)	179	178	
9	Rated Net Head (m)	195.97	195	
10	Max Min Head ratio	1.21	1.22	
11	IC (MW)	1000	1000	
12	Nos. of Turbine Units	4	4	
13	Unit Capacity (MW)	4 no.s of 250 MW	4 no.s of 250 MW	
14	Unit Discharge (cumecs)	144.49	145.21	
15	Length of the WCS		924.85	
	Main Pressure shaft			
	Nos.	4	4	
	Diameter (m)	5.8	5.8	

S. No.	Description	Alternative-1	Alternative-2	Remarks
1	Type of Power House	Surface	Surface	
	Length (m)	659.58	734.53	
	Main Tail Race Tunnel			
	Nos.	4	4	
	Diameter (m)	7.6	7.6	
	Length (m)	194.45	193.15	
16	Upstream L/H Ratio	3.37	3.77	
17	Upstream Surge Tank	Not Required	Not Required	
18	Downstream Surge Gallery	Not Required	Not Required	
19	Max Excavation in Power House (m)	76	79	
20	Storage Capacity (MWh)	6000		
21	Annual Energy (MU)	2080.5	2080.5	
22	Land Acquisition	Upper and Lower reservoir area falls in the forest area only	Upper reservoir area falls in the forest area, but the lower reservoir area falls in the private agriculture land.	

Land Requirement for Alternatives

Sl.No.	Project Component	Alternative 1			Alternative 2		
		Forest Land (Ha)	Non-Forest Land (Ha)	Total (Ha)	Forest Land (Ha)	Non-Forest Land (Ha)	Total (Ha)
1	Upper Reservoir & Dam	94.3	-	94.3	100	-	100

Sl.No.	Project Component	Alternative 1			Alternative 2		
		Forest Land (Ha)	Non-Forest Land (Ha)	Total (Ha)	Forest Land (Ha)	Non-Forest Land (Ha)	Total (Ha)
2	Lower Reservoir & Dam	120	-	120	-	117.5	117.5
3	WCS, PH, Pothead Yard	7.4	1	6.2	7.8	-	7.8
4	Approach Road to all Components	6.6	1	7.6	7.2	-	7.2
5	Site Office	-	1	1	-	1	1
6	Crushing & Batching Plant	*10	-	*10	*5	*5	*10
7	Stacking Area & Workshop	-	5	5	-	5	5
8	Magazine Area	-	1	1	-	1	1
9	Labor Camp	-	5	5	-	5	5
10	Colony Area	-	10	10	-	10	10
11	Muck Disposal Area	-	44	44	-	44	44
12	Water Pipeline Filling Including Pump House	1.7	-	1.7	1.5	-	1.5
	Total	**230**	**68**	**298**	**116.5**	**183.5**	**300.0**

*This area is included in UR & LR.

Selection of Final Alternative

The forest land required for Alternatives 1 and 2 is 230 Ha and 116.5 Ha respectively. However, total land required (including private land) for alternative 1 and 2 is 298 Ha and 300 Ha respectively. Nevertheless, the Forest land needed for Alternative 1 exceed that of Alternative 2 by roughly 113.5 Ha respectively.

Alternative 2 with surface powerhouse has been considered for preparation of pre-feasibility report owing to its advantages over Alternatives 1 as mentioned above.

Name of the Proposal	Hiran Pumped Storage Project
Location (Including coordinates)	Lower Reservoir : Latitude: 23°25' 37.51" N

	Longitude: 79° 44' 59.22" E Upper Reservoir : Latitude: 23° 26' 18.67" N Longitude: 79° 45' 12.78" E
Inter- state issue involved	No
Seismic zone	Zone-III

Category of the project	A
Provisions	
Capacity / Cultural command area (CCA)	1000 MW
Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	Nil

Powerhouse Installed Capacity	1000 MW
Generation of Electricity Annually	2096.5 MU
No. of Units	4 nos. (4 x 250 MW)
Additional information (if any)	Nil

Cost of project	5876.23 Cr.
Total area of Project	300.0 ha
Height of Dam from River Bed (EL)	Lower Dam – 24.0 m Upper Dam –24.0 m
Length of Tunnel/Channel	924.85 m
Details of Submergence area	217.50 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	Not Applicable, as this is Closed Loop P umped Storage Project (PSP)
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA& CC) for River in which project located. If yes, t hen a) E-flow with TOR /Recommendation by EAC a s per CIA&CC study of River Basin.	No

b) If not the E-Flows maintain criteria for sustaining river ecosystem.	
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	500
No. of proposed disposal area/ (type of land-Forest/Pvt. land)	44 ha (Non-Forest Land)
Muck Management Plan	Will be Provided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Will be Provided in EIA/EMP report

Private Land	183.50 ha
Government land	-
Forest Land	116.50 ha
Total Land	300.0 ha
Submergence area/Reservoir area	217.50 ha
Additional information (if any)	Nil

Forest Land/ Protected Area/ Environmenta	Yes/ No	Details of Certificate / letter/ Remarks

l Sensitivity Zone		
Reserve Forest/ Protected Forest Land	--	· Veranganna Durgawati WLS is about 7.0 km from project area. · All th
National Park	----	

		components of the project are outside the ESZ boundary. ESZ boundary is notified

		vide notification S.O. 4617(E) dated 8th November 2021; therefore, Wildlife clearance is not a

		pplicable.
Wildlife Sanctuary	-----	

Court Case	Nil
Additional information (if any)	Nil

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

Particulars	**Details**
Details of consultant	M/s. R S Envirolink Technologies Pvt. Ltd. (RSET) (NABET Accredited Consultant Organization) Certificate No : NABET/EIA/25-28/RA0415 Validity : August 15, 2028 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	o Least expensive source of electricity, no t requiring fossil fuel for generation o An emission-free renewable source o Balancing grid for demand driven variati ons o Balancing generation driven variations o Voltage support and grid stability Apart from this, proposed PSP will also benefit the local community by creating employment o pportunities and will result in upliftment of liveli hood and socio-economic conditions.
Status of other statutory clearances	Forest Clearance - Online application seeking fo rest diversion for around 116.5 Ha after receipt of ToR Approval. Alongside, other statutory cle arances (as applicable) from State as well as Ce ntral government will be obtained post complet ion of Detailed Project Report.
R&R details	Details shall be evaluated during EIA/EMP Studi es
Additional detail (If any)	Nil

3.1.3. Deliberations by the committee in previous meetings

N/A

3.1.4. Deliberations by the EAC in current meetings

The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA/EMP and Public hearing for Hiran Closed-Loop Pumped Storage Project (1000 MW) in an area of 300 Ha located at Tala, Kanra, etc., Sub-District Patan & Jabera, District Jabalpur and Damoh, Madhya Pradesh by M/s Renew Green (Tnj Two) Private Limited.

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

- The EAC observed that the Hiran PSP is proposed to generate 1000 MW comprises of Upper and Lower reservoir located away from riverine system and therefore it is treated as a close loop PSP. Water requirement for Hiran PSP is 19.59 MCM (17.41 MCM Gross storage of for lower reservoir + 2.07 MCM dead storage of upper reservoir + 0.11 MCM vol. of WCS) of water will be lifted one-time from nearby existing Hiran River. Water will be pumped from Hiran River.

- The EAC noted that total land required for the construction of various components and

related works for Hiran PSP is estimated to be around 300.0 ha, out of which 183.5 ha is non-forest land and 116.5 ha is forest land. Diversion of forest land for non-forest purpose will be involved for construction of project components. However, it was observed that the application for Stage-I Forest Clearance (FC) has not yet been submitted, which necessitates further action from the Project Proponent.

- The PP informed that the Veerangana Durgawati WLS is about 7.0 km from project area and ESZ boundary is notified vide notification S.O.4617(E) dated 8th November 2021. PP also informed that all the components of the project are outside the ESZ boundary, therefore, Wildlife clearance is not applicable. However, the EAC noted the recent establishment of Veerangana Durgavati Tiger Reserve, which has been formally notified as the seventh Tiger Reserve in the State of Madhya Pradesh under Section 38V of the Wildlife (Protection) Act, 1972. This Tiger Reserve covers the Nauradehi Wildlife Sanctuary and the Veerangana Durgavati Wildlife Sanctuary, covering a total area of approximately 2,339 km² with core and buffer zones designated to strengthen tiger conservation and biodiversity protection. The EAC further noted that the Hiran Closed-Loop Pumped Storage Project (1000 MW) is proposed at a distance of approximately 2.8 km from the boundary of the notified Tiger Reserve. However, the EAC emphasized that the Project Proponent shall obtain a duly issued certificate/No Objection Certificate (NoC) from the concerned State Forest Department and/or the National Tiger Conservation Authority (NTCA), as applicable, confirming that the proposed project area does not fall within any tiger habitat and does not intersect or adversely affect any identified tiger corridor.

· It has been observed that in-principal approval of Initial Allotment of Hiran Pumped Hydro Storage issued by Office of the Commissioner, New and Renewable Energy, Bhopal vide letter no. F/NRE/2025-26/05-11/456 dated August 20, 2025.

3.1.5. Recommendation of EAC

Recommended

3.1.6. Details of Terms of Reference

3.1.6.1. Specific

Miscellaneous:	
1.	Both capital and recurring expenditure under EMP shall be submitted.
2.	Pre-DPR Chapters viz., Hydrology, Layout Map and Power Potential Studies duly appraised by CWC/CEA shall be submitted.
3.	The PP should submit the photograph of monitoring stations & sampling locations. 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 analyze the samples.
4.	Drone video of project site shall be recorded and to be submitted.
5.	Undertaking need to be submitted on affidavit stating that no activities has been started on the project site.

6.	Detailed plan to restore wider roads and convert them into narrow up to 10m after construction of the project.
7.	Specific Terms of Reference (ToRs) issued by the Ministry vide Office Memorandum No. F. No. IA3-22/33/2022-IA.III dated 14.08.2023 for Pumped storage projects shall be used for preparation of EIA/ EMP reports.
8.	As per Ministry's OM dated 1st August, 2013, PP shall submit application to obtain prior approval of Central Government under the Forest Conservation Act, 1980 for diversion of forest land required for such projects will be submitted as soon as the actual extent of forest land required for the project is known to the project proponent, and in any case, within 6 months of issuance of ToR. However, no proposal will be put up before EAC without submission of application for forest clearance, wherever applicable.
Disaster Management:	
1.	Impact of Project activities (specially blasting and drilling) on the aquatic and terrestrial ecosystem, within study area to be studied and be incorporated in EIA/EMP report.
2.	The muck dumping sites shall be located with a distance of 100 mts from HFL. The PP shall submit the detailed action plan for transportation of muck along with monitoring mechanism of movement of muck carrying trucks.
Muck Management:	
1.	Details of quantity of muck generation component wise, types of muck (Excavation in tunnels, pressure shaft and powerhouse etc.) and disposal site/ transportation to be provided.
2.	Details of muck management such as dumping sites and its locations, transportation plan along with monitoring mechanism for muck transportation, detailing the road map of project construction site/ indicating the distances from HFL, river, project construction site along with types of road etc.
3.	Safety measures for avoiding spill over muck into the riverbed/streams and its flow into the river during the high discharge/ flood or monsoon period. Prepare plan for stabilization of muck disposal sites using biological and engineering measures 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.
4.	Restoration plan for construction area including dumping site of excavated materials by levelling, filling up of burrow pits, landscaping etc.
Socio-economic Study:	
1.	Declaration by the project proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with any State 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. A comparative chart of issues raised by General Public during Public Hearing and commitments made by the Project Proponent will be prepared and submitted in the relevant chapter of EIA/EMP report.

3.	PP shall submit the credible documents to show the status of land acquisition w.r.t project site from/through the concerned State Government as required under Ministry's OM dated 7th October, 2014 for the project land to be acquired.
4.	Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines. Private land (if any) shall be acquired as per provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. Budget earmarked for R&R, CSR shall not be included in the cost of EMP.
Environmental Management and Biodiversity Conservation:	
1.	A detailed action plan need to prepare ensuring that no natural rivulets, drainage channels, or streams feeding the river are disturbed, diverted, or obstructed due to the construction or operation of the project. A detailed study on surface hydrology shall be carried out to assess and demonstrate that the natural drainage pattern of the area remains unaffected.
2.	PP shall submit the Water Utilization Mapping within a 10 km radius of the project for examining the impacts on sustainability of ecosystem of the region after withdrawal of water for proposed project. The risk analysis w.r.t water availability shall also be carried out.
3.	Detailed action plan for large scale plantation of native species of plant sapling within 10 km radius of the project shall be prepared in consultation with State Forest Department.
4.	Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for 116.5 ha of forest land involved in the project shall be submitted within stipulated time.
5.	A detailed assessment shall be carried out to optimize and possibly reduce the land area earmarked for quarrying area.
6.	Muck disposal site and other components such as Township, site office, Stacking area and batching plant shall be located outside the forest area. The muck disposal area shall be optimized.
7.	The Project Proponent shall obtain, certificate/No Objection Certificate (NoC) from the Chief Wildlife Warden and/or the National Tiger Conservation Authority (NTCA), as applicable, certifying the distance of the Hiran Closed-Loop Pumped Storage Project (1000 MW), from the boundary of the notified Tiger Reserve, and that any part of the project component does not fall within any notified or potential tiger habitat and does not intersect, fragment, or adversely affect any identified tiger corridor. The certificate/NoC so obtained shall be submitted as part of the EIA/EMP documentation for appraisal.
8.	Certificate and certified map from Chief Wildlife Warden shall also be submitted mentioning that project boundary is not falling in any Ecological Sensitive Area, Wildlife Sanctuary/Tiger/elephant corridor/Critically polluted area within 10 km of Project site.
9.	The PP shall prepare a detailed Wildlife Conservation Plan in consultation with the State Forest Department for all Schedule-I species reported or likely to be present in the project area, including the influence zone. The plan shall be duly approved by the Chief Wildlife Warden of the State prior to appraisal of the proposal for Environmental Clearance in view project location around Veerangana Durgawati TR.

10.	PP shall submit the detailed plan for filling the reservoir along with necessary approval form water resource department.
11.	Transportation Plan for transporting construction materials shall be submitted.
12.	The baseline data collection will cover the changes in biological and ecological profile of the region after monsoon with worst-case scenario study and critical mineral assessment.
13.	Risk Assessment Study of aquatic biota through its mapping in all streams and nullahs in the study area during rainy season shall be submitted in the EIA/EMP report.
14.	Detailed study on human-animal conflict during project construction and operation shall be conducted considering past incidences and proper action plan for its management shall be prepared in consultation with State Wildlife Department.\
15.	Calculation and values of GHGs (CO_2, CH_4 etc.) emissions during construction and during operation till the life of the project shall be estimated and submitted.
16.	The longitudinal connectivity/Free flowing sketch be provided in the EIA/EMP report.
17.	Details of mineral zone, if any, in the study area, certified by Geological Survey of India or any other concerned Government Organization shall be submitted. The project area should not come up on any critical mineral zone, the same shall to be verified by GSI/NMDC.
18.	Quantitative values of Impact modelling of environmental parameters shall be submitted for during construction and operation. Also, mitigation measures shall be submitted in terms of construction and operation phase.
19.	Conducting site-specific ecological study emphasizing on riverine ecology viz. fishes diversity, fish migration, habitat and aquatic biota due to construction PSP. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.
20.	Cumulative Impact of projects in the basin on carrying capacity and sustainability of Reservoir/ River /nala of catchment area due to tapping of water for filling reservoir shall be studied.
21.	Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Specific 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.
22.	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.
2	Reservoir/ River banks protection plan all along the submergence need to be prepared and

3.	incorporated in EIA/ EMP.
24.	Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Indian Council of Agriculture Research (ICAR) Institutes/ Expert Govt. institutions and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report. All springs available in the study area shall be mapped and action plan for their conservation and protection need to be prepared.
25.	Any archaeological sites in the vicinity of the project, if any, then it shall be certified by ASI.
26.	Environmental Cost Benefit Analysis shall be done in terms of loss of Forest ecosystem due to diversion of Forest land/loss of biodiversity, water availability, water uses for generation of hydro power and Ecological flows.

3.1.6.2. 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 f ollows:	
1.	null
2.	null

3.	Physical geography, Topography, Regional Geological aspects and structure of the Catchment.
4.	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.
5.	Landslide zone or area prone to landslide existing in the study area should be examined.
6.	Presence of important economic mineral deposit, if any.
7.	Justification for location & execution of the project in relation to structural components (dam /barrage height).
8.	Impact of project on geological environment.
9.	null
10.	Meteorology (viz. Temperature, Relative humidity, wind speed/direction etc.) to be collected from nearest IMD station.
11.	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.
12.	Existing Noise Levels and traffic density in the study area at 5-6 Locations.
13.	null
14.	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.
15.	null
16.	(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.
17.	null
18.	History of the ground water table fluctuation in the study area.
19.	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, Cl, SO4, Na, K, Ca, Mg, Silica, Oil & Grease, phenolic compounds, residual sodium carbonate); (iii) Bacteriological parameter (MPN, Total coliform) and (iv) Heavy Metals (Pb, As, Hg, Cd, Cr-6, total Cr, Cu, Zn, Fe) (6 locations).

20.	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
21.	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.
22.	Run off, discharge, water availability for the project, sedimentation rate, etc.
23.	Basin characteristics
24.	Catastrophic events like cloud bursts and flash floods, if any, should be documented.
25.	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.
26.	Set up a G&D monitoring station and a few rain gauge stations in the catchment area for collecting data during the investigation.
27.	Flow series, 10 daily with 90%, 75% and 50% dependable years discharges.
28.	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.
29.	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.
30.	Sedimentation data available with CWC may be used to find out the loss in storage over the years.
31.	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.
32.	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.
33.	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.
34.	null
35.	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.

36.	Documentation of all plant species i.e. Angiosperm, Gymnosperm, Pteriodophytes, Bryophytes (all groups).
37.	General vegetation profile and floral diversity covering all groups of flora including lichens and orchids. A species wise list may be provided.
38.	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.
39.	Existence of National park, Sanctuary, Biosphere Reserve etc in the study area, if any, should be detailed.
40.	Economically important species like medicinal plants, timber, fuel wood etc.
41.	Details of endemic species found in the project area.
42.	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.
43.	Cropping pattern and Horticultural Practices in the study area.
44.	null
45.	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.
46.	Documentation of fauna plankton (phyto and zooplankton), periphyton, benthos and fish should be done and analysed.
47.	Information (authenticated) on Avi-fauna and wildlife in the study area.
48.	Status of avifauna their resident/ migratory/ passage migrants etc.
49.	Documentation of butterflies, if any, found in the area.
50.	Details of endemic species found in the project area.
51.	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.
5	Existence of barriers and corridors, if any, for wild animals.

2.	
53.	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.
54.	Collection of primary data on agricultural activity, crop and their productivity and irrigation facilities components.
55.	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.
56.	Documentation of aquatic fauna like macro-invertebrates, zooplankton, phytoplantktons, benthos etc.
57.	Fish and fisheries, their migration and breeding grounds.
58.	Fish diversity composition and maximum length & weight of the measured populations to be studies for estimation of environmental flow.
59.	Conservation status of aquatic fauna.
60.	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.
61.	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.
62.	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.
63.	Collection of information on sensitive habitat of historical, cultural and religious and ecological importance.
64.	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.
65.	Documentation of demographic, Ethnographic, Economic Structure and development profile of the area.
66.	Information on Agricultural Practices, Cultural and aesthetic sites, Infrastructure facilities etc.
67.	Information on the dependence of the local people on minor forest produce and their cattle grazing rights in the forest land.
68.	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.
69.	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
1	Impact due to submergence.

8.	
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.	null
2.	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.
3.	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.
4.	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.
5.	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.
6.	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.
7.	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.
8.	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.
9.	Dam Break Analysis and Disaster Management Plan The outputs of dam break model should be illustrated with appropriate graphs and maps clearly bringing out the impact of Dam Break scenario. 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.
10.	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.

11.	Muck Disposal Plan- suitable sites for dumping of excavated material should be identified in consultation with the State Pollution Control Board and Forest Department. All Muck disposal sites should be minimum 30 m away from the HFL of river. Plan for rehabilitation of muck disposal sites should also be given. The L- section/ cross section of muck disposal sites and approach roads to be given. Financial out lay for this may be given separately. Deatailed muck transportation plan delinating the path ways, number of trucks, quantity of muck to be transportated along with monitoring mechanism using latest technology, shall be prepared.
12.	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.
13.	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.
14.	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.
15.	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.
16.	Labour Management Plan for their Health and Safety.
17.	Sanitation and Solid waste management plan for domestic waste from colonies and labour camps etc.
18.	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.
19.	Environmental safeguards during construction activities including Road Construction.
20.	A summary of Cost Estimates for all the plans, cost for implementing all the Environmental Management Plans.
21.	Water, Air and Noise Management Plans to be implemented during construction and post-construction periods.

3.2. Agenda Item No 2:

3.2.1. Details of the proposal

Savitri Pumped Storage Project (2400 MW) by **NHPC LIMITED** located at **SATARA,MAHARASHTRA**

Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Da te**	**Activity Sub-Activity (Schedule Item)**
IA/MH/RIV/551075/20 25	J-12011/43/2025-IA.I(R)	21/11/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.2.2. Project Salient Features

44.2.1 The proposal is for grant of Terms of Reference (TOR) to the project Savitri Open Loop Pumped Storage Project (2400 MW) in an area of 310.76 Ha located at Village Javali, Dare, Haroshi, Karanje etc, Sub-district Poladpur and Mahabaleshwar, District Satara and Raigarh, Maharashtra by M/s NHPC limited.

44.2.2 The Project Proponent and the accredited Consultant M/s. EQMS Global Pvt. Ltd made a detailed presentation on the salient features of the project and informed that:

i. The proposed Savitri Pumped Storage Project (2400MW), a self-identified off stream open loop project, is being developed by the NHPC around two adjacent valleys drained by the Koyna River and Savitri River in District Satara, and Raigad, Maharashtra.

ii. The project, conceived as an open loop project of installed capacity 2400 MW/15072MWH pumped storage component with 6.28 hours storage capacity for peak power generation shall be located in District Satara and Raigad, Maharashtra. The project is being developed by the NHPC around two adjacent valleys drained by the Koyna River and Savitri River in District Satara, and Raigad, Maharashtra.

iii. The upper and lower dams for the PSP are proposed to be newly constructed. The proposed upper dam (embankment/GFRD) is located across Koyna River, which is a tributary of Krishna River, in Jaoli village near Mahabaleshwar, Satara district. The proposed lower dam (concrete gravity) is located across Savitri River near Lahulase village, Tehsil Poladpur, Raigad district.

iv. The project will generate 2400 MW (8x300MW) by utilizing a design discharge of 60.74 cumec/turbine with rated head of 561.67m. The PSP will utilize 2560 MW(8x320MW) to pump 51.33 cumec/pump from lower reservoir to the upper reservoir. The scheme of operation for the project is 6.28 hours of peak power per day and 7.43 hours for pumping back the water through TRT-reversible turbines-pressure shaft-HRT to the upper reservoir.

v. Water will be used cyclically for energy storage and discharge. For reservoir operation the project contemplates non-consumptive re-utilization of 11.23 MCM of water for recirculation among two proposed reservoirs. The one-time filling requirement of 19.58 MCM and periodical recoupment for losses(1.47MCM) will be met from yield generated within lower dam catchment area (18.94 sq.km) and used cyclically for energy storage and discharge.

vi. The geographical co-ordinates of the project are:
Upper Reservoir Coordinates: 17° 56' 47.04" N & 73° 37' 13.73" E
Lower Reservoir Coordinates: 17° 57' 56.59" N & 73° 35' 11.10" E

vii. **Land requirement:** Total land requirement of the project is 310.76 ha (Forest: 55.64 ha; Government: 170.12 ha; Private 85.00 ha). The private land shall be acquired as per provisions of RFCTLARR Act, 2013.

viii. **Demographic details in 10 km radius of project area:** As per the Census of India 2011, the

total population 72 villages of study area comprising of total 9799 households are 42889 composed of 21428 males and 21461 females with sex ratio of 1002.The cast wise composition of the total population of the project affected villages is made up of scheduled cast population of 2808 (6.55%) and Scheduled Tribe population of 3412 (7.96%). The literate population is 30658(80.06%) of which the male and female population is 16881(88.20%) and 13777 (71.92%) respectively. The gender gap for literacy rate is 16.28 %. The total working population is 17756 (41.40%) which comprises of main workers 15107(35.22%) and marginal workers 2649(6.18%).

(a) Municipal Solid Waste (MSW) likely to be generated during construction and operation shall be 38.7 Ton/annum and 25.5 ton/annum respectively which shall be managed as per Solid Wastes Management Rules, 2016.
(b) Hazardous waste: It inter alia includes burnt mobile oil and greases (10 ton/annum) from vehicles and construction machinery and equipment which shall be handled and disposed of through authorized dealer as per Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016.
(c) The total quantity of muck / debris, to be generated due to the project, shall be 41.56 lakh cum, of which 33.84 lakh cum shall be consumed on project work and balance 7.42 lakh cum ()10.25cum with 38% swell factor) shall be dumped at designated muck sites. Muck piles shall be well supported at base by retaining walls and multi-storied plantation will be developed using grasses, shrubs, bushes, and trees in a site-specific manner.

· **Project details:**

Name of the Proposal	Savitri PSP (2400 MW), Districts: Satara & Raigad Maharashtra Proposal No.: IA/MH/RIV/5

	51075/2025 File No. J-12011/43/2025-IA.I(R)
Location (Including coordinates)	Upper Dam: Village Jaoli, Tehsil-Mahabaleshwar, District Satara, Maharashtra Lower Dam: Village Lahulase, Tehsil

	Poladpur, District Raigad, Maharashtra Upper Reservoir: 17° 56’ 47.04” to 17° 37’ 13.73” Lower Reservoir: 17° 57’ 56.49” to 17° 35’ 11.1”
Inter-state is	No

ue involved	
Seismic zone	Zone-IV

· **Category details:**

Category of the project	A
Provisions	Project activity covered at S. N. 1(c)(i) St

	andalonePumpedStorageProject
Capacity/Cultural command area(CCA)	2400MW pumped storage component with 6.28 hours storage capacity for peakpo

	wer generation and 7.43 hours pumping operation for backfilling of upper reservoir of PSP.
Attracts the General	Yes. Part of water conducto

Conditions (Yes/No)	r system, power house and access roads, fall within the Raigad Conserve Reserve.
Additional information (if a	The upper dam/ reservoir, submer

ny)	gence area, upper intake and part of watercondu ctor system are in Mahabaleh war-Panchgani ESZ.

· **Electricity generation capacity:**

Powe	2400 MW

rhouseInstalledCapacity	
Generationof ElectricityAnnually	5226.22 MU
No.of Units	8X300MW
Ad	The p

dditional information (if any)	roject with installed capacity of 2400 MW(8x300MW) by utilizing a design discharge of 485.92 cumec rated net head of 561.670m for 6.28-hour daily peaking cyc

	le will an nu ally ge ner ate 52 26. 22 MU at 9 5% pla nt ava ilab ilit y. Th e PSP will util ize 25 60 M W to pu mp 41 0.6 4 c um ec fro m l ow er r ese rvo ir t o t he up per res erv

	oir in 7.43 hours. The annual pumping energy required shall be 6593.75 MU. The cycle efficiency of the PSP works out to be about 79.26%.

· **ToR/EC Details:**

Cost of project	Rs 11826 Crores.

<table>
<tr><td>Total area of Project</td><td>310.76 ha</td></tr>
<tr><td>Height of Dam from River Bed (EL)</td><td>Upper Dam-59.00 m; Lower Dam-63.50 m</td></tr>
<tr><td>Length of Tunnel/Channel</td><td>Length: 13483 m comprising of following components:
(i)Main HRT: 1239m; Unit HRT: 640 m
(ii)Main Pressure shaft:5564m; Unit: 3136m
(iii)Main TRT: 1376m; Intermediate &Branch TRT: 1528m</td></tr>
<tr><td>Details of Submergence area</td><td>Total Submergence area-144ha
Upper Reservoir-79.76 ha (Forest land: 7.15ha, Non-Forest land : 72.61ha)
Lower Reservoir-64.24 ha (Forest land: 0.00ha, Non-Forest land : 64.24ha)</td></tr>
<tr><td>Types of Waste and quantity of generation during construction/ Operation</td><td><table><tr><td>Waste Type</td><td>Construction</td><td>Operation (TP</td></tr></table></td></tr>
</table>

		(TPA)	A)
	MSW	38.7	25.5
	Plastic	5.0	0.50
	E-waste	0.5	0.1
	Burnt oil	10.0	1.00
	Batteries	2.0	0.50
	Bio-medical	0.5	0.0
E-Flows for the Project			
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes,	No Not applicable Not applicable in case of PSP		

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

os yst e m.	
No. of tre es/sapling s propose d in view of 'Ek Ped Maa Ke N aam' cam paign	

· **Muck Management Details:**

N o. of pr o p o se d di s p o sa l ar e a/ (t y p e of la n d- F or e s t/ P v t. la n	M u c k Di s p o sa l Si te s- 4 N os Ar e a a n d T y p e of la n d - 1 5 h a; n

d)	on-forest
Muck Management Plan	The muck shall be laid with vertical angle not exceeding 28[0] in such a m

	anner thatrock mass is properly stacked behind the gabion wall/revetment with minimu

	m of v oi d s. T h e m u c k pi le s h al l b e la te r c o v er e d w it h g e o- G e o- c oi r te xt il e a n d re h a

	bilitated by afforestation of herbs and shrubs. Detailed Muck Management Plan shall

	before formulated during EIA study.
Monitoring mechanism for Muck Disposal	The project authorities shall ensure that barrier to regulate

	the traffic flow to and from the muck pile site. Proper e-challan shall be issued.

· **Land Area Breakup:**

Pri	85.

vatelland	00 ha
Governmentland	170.12 ha
ForestLand	55.64 ha
TotalLand	310.76
Submergence ar	144.00 ha

ea/ Reservoir area	
Additional information (if any)	Dam structures: 37.87 ha Water conductor System: 38.39 ha Project & labour colony:20.00 ha Road

	s;55.00 ha. Muck disposal: 15.00 ha Land for transmission line for power evacuation (RoW) is not included.

· **Presence of Environmentally Sensitive areas in the study area**

Forest Land/ P	**Yes/ No**	**Details of Cer**

rotectedArea/EnvironmentalSensitivityZone		**tificate/letter/Remarks**
ReserveForest/ProtectedForestLand	Yes	(i)RaigadConservationReserve

		(ii) Mahabaleshwar-Panchganie SEZ. (Notification, Dated 17th January 2001)
Natio	No	Non

nal Park		e within 10 km
Wildlife Sanctuary	No	None within 10 km

· **Court case details:**

Court Case	None
Additional information (if an	None

y)	

· **Affidavit/Undertaking details:**

Affidavit/Undertaking	Annexure-IV of Agenda of meeting
Additional information (if any)	None

· **Previous EC compliance and necessary approvals:**

Particula	**Lette**

rs	rno.anddate
Certified EC compliance report (if applicable)	Not applicable
Status of Stage-I FC	Not, yet
Additional de	Application f

tail (If any)	ordiversionofforestlandshallbemoved
Is FRA (2006) done for FC-I	Not, yet

· **Miscellaneous**

Particul	**Details**

ars	
Details of consultant	EQMS GLOBAL PRIVATE LIMITED 305, 3rd Floor, Plot No. 16, Rishabh Corporate Tower, Community Centre, Karkardoom

	a, Delhi – 110092 Phone: 011-43062755; NABET/EIA/25-28/RA0465, valid upto 23.11.2028)
Project Benefits	The benefits inter alia shal

	l include the benefits like (i) Average annual generation of 5226.22 MU of energy with 95% plant availability; (ii) Increased vegetal cover

	due to implementing of CAT Plan and Green Belt Development Plans (iii) Employment Potential during construction (1000 labour); (iv)

	Overall development of area by implementing CSR initiatives and Watershed Development Plans.
Status of other statutory clearances	The mandatory statutory clearance like

	approval of power potential studies from CEA, site specific earthquake design parameters to be approved by NCSDP, Geological report ap

	proval from GSI, DPR approval from CWC and CEA; Forest clearance for diversion of forest land, are yet to be sought.
R&R details	There shall be disp

	lacement of families. R&R details shall be finalised later.
Additional detail (If any)	None

3.2.3. Deliberations by the committee in previous meetings

N/A

3.2.4. Deliberations by the EAC in current meetings

The EAC during deliberations noted the following:

· The Expert Appraisal Committee (EAC) deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA/EMP and Public hearing for Savitri Open Loop Pumped Storage Project (2400 MW) in an area of 310.76 Ha located at Village Javali, Dare, Haroshi, Karanje etc, Sub-district Poladpur and Mahabaleshwar, District Satara and Raigarh, Maharashtra by M/s NHPC limited.

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

· The EAC observed that the proposed project is an open loop project of installed capacity 2400 MW/15072MWH pumped storage component with 6.28 hours storage capacity for peak power generation. The upper dam is located across Koyna River, which is a tributary of

Krishna River and lower dam is located across Savitri River near Lahulase. For reservoir operation the project contemplates non-consumptive re-utilization of 11.23 MCM of water for recirculation among two proposed reservoirs. The one-time filling requirement of 19.58 MCM and periodical recoupment for losses(1.47MCM) will be met from yield generated within lower dam catchment area (18.94 sq.km) and used cyclically for energy storage and discharge.

· The EAC noted that total land required for the construction of various components and related works for project is 310.76 ha out of which Forest area is 55.64 ha, Government land is 170.12 ha and Private land is 85.00 ha. Diversion of forest land for non-forest purpose will be involved for construction of project components. However, it was observed that the application for Stage-I Forest Clearance (FC) has not yet been submitted, which necessitates further action from the Project Proponent.

· The committee noted that part of water conductor system, powerhouse and access roads, fall within the Raigad Conservation Reserve, Additionally, upper dam/reservoir, submergence area, upper intake and part of water conductor system fall within Mahabalehwar-Panchgani ESZ. The EAC further noted that all the project components are located within the proposed Western Ghats ESA, Maharashtra as per MOEF&CC draft notification S.O.30609(E) dated 31.07.2024.

· It has been observed that Memorandum of Understanding has been signed between NHPC and Deptt. of Energy, Govt. of Maharashtra on 06.06.2023 for establishment of 4 nos. PSPs including Savitri PSP. Subsequently, another MoU was signed between NHPC & Govt. of Maharashtra on 03.09.2024 for development of the PSPs with an objective to prepare the DPR & submit to CEA/GoMWRD for its approval.

· The EAC noted that, as per the notification of the Mahabaleshwar–Panchgani Eco-Sensitive Zone issued vide S.O. 52(E) dated 17.01.2001, only non-polluting non-hazardous service industries, units making footwear from processed and ready-made leather, floriculture, horticulture based or agro based industries producing products from indigenous goods from the Eco Sensitive Zone shall be permitted in this zone, providing the project/ activity does not result in polluting effluent, emission or impacts.

· The Committee further observed that, as per the classification of industries provided by the Central Pollution Control Board (CPCB) on date 12.02.2025, the hydel power plants (Capacity > 50 MW) fall under the Red category. Accordingly, the EAC noted that the Savitri PSP being a sub category of Hydel Power Plant projects, falls under red category and therefore was not a fit case to be taken up for grant of Terms of Reference (ToR) unless the Project Proponent (PP) obtained requisite No Objection Certificates / clearances from the competent Authoritiy(ies).

· In view of the above mentioned provisions and regulatory restrictions, the EAC decided to defer the proposal and suggested the Project Proponent to obtain the requisite No Objection Certificate/Clearance from the competent authority in accordance with the provisions of the Mahabaleshwar–Panchgani Eco-Sensitive Zone Notification, S.O. 52(E) dated 17.01.2001, for further consideration of the proposal.

44.2.4 The EAC based on the information submitted and as presented during the meeting, and in view of the above provisions and regulatory restrictions, decided to **defer the proposal** for grant of Terms of Reference for conducting EIA study for proposed construction of Savitri Open Loop Pumped Storage Project (2400 MW) in an area of 310.76 Ha located at Village Javali, Dare, Haroshi, Karanje etc, Sub-district Poladpur and Mahabaleshwar, District Satara and Raigarh, Maharashtra by M/s NHPC limited and directed the Project Proponent to obtain the requisite No Objection Certificate/Clearance from the competent authority in accordance with the provisions of the Mahabaleshwar–Panchgani Eco-Sensitive Zone Notification, S.O. 52(E) dated 17.01.2001, for further consideration of the proposal.

3.2.5. Recommendation of EAC

Deferred for ADS

3.3. Agenda Item No 3:

3.3.1. Details of the proposal

ASSAM/PSP-02 by **ASSAM POWER DISTRIBUTION COMPANY LIMITED** located at **WEST KARBI ANGLONG,ASSAM**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/AS/RIV/558604/2025	J-12011/44/2025-IA.I(R)	25/11/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.3.2. Project Salient Features

The Member Secretary informed that, the representative of the PP vide email/letter dated 05.12.2025 expressed its inability to attend the EAC meeting due to unavoidable circumstances, and requested for deferment. Accordingly, the EAC agreed to consider the proposal in a later meeting.

3.3.3. Deliberations by the committee in previous meetings

N/A

3.3.4. Deliberations by the EAC in current meetings

The proposal was ***deferred*** on the above lines.

3.3.5. Recommendation of EAC

Deferred for PP not attending the meeting

3.4. Agenda Item No 4:

3.4.1. Details of the proposal

Gosaintari Pumped Storage Project by **SUn Hydro Energy Private LIMITED** located at **NAWADA,BIHAR**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity**

			(Schedule Item)
IA/BR/RIV/560110/2025	J-12011/41/2025-IA.I(R)	30/11/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.4.2. Project Salient Features

The Member Secretary informed that, the representative of the PP vide email/letter dated 08.12.2025, expressed its inability to attend the EAC meeting due to unavoidable circumstances, and requested for deferment. Accordingly, the EAC agreed to consider the proposal in a later meeting.

3.4.3. Deliberations by the committee in previous meetings

N/A

3.4.4. Deliberations by the EAC in current meetings

The proposal was ***deferred*** on the above lines.

3.4.5. Recommendation of EAC

Deferred for PP not attending the meeting

3.5. Agenda Item No 5:

3.5.1. Details of the proposal

Proposed Expansion of Tembhu Lift Irrigation Project Taluka Karad, District Satara, Maharashtra by **Department of Irrigation** located at **SATARA,MAHARASHTRA**			
Proposal For		Expansion EC	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/MH/RIV/482689/2024	J-12011/48/2023-IA.I (R)	06/01/2025	River Valley/Irrigation projects Irrigation Projects (1(c))

3.5.2. Project Salient Features

The proposal is for grant of Environmental Clearance (EC) to the project for Expansion of Tembhu Lift Irrigation Project in an area of 2284.601 ha at Village Tembhu, Ranad, Govare and etc, Sub District Khatav, Atpadi, Karad and etc, District Satara, Sangli and Solapur, Maharashtra by M/s Minor Irrigation Division, Sangli Water Resources Department, Maharashtra Krishna Valley Development Corporation.

44.5.2: The Project Proponent and the accredited Consultant M/s MITCON Consultancy & Engineering Services Ltd., Pune, Maharashtra, made a detailed presentation on the salient features of the project and informed that:

i. Krishna Koyana Lift Irrigation Scheme (KKLI), which is under construction, provides irrigation benefits to drought prone Kadegaon, Khanapur, Tasgaon, Miraj &Kavathe Mahankal and Jat Taluka of Sangli districtand Songola and Mangalvedha taluka of Solapur of district. Takari Lift Irrigation Scheme provides irrigation in Khanapur, Kadegaon and Tasgaon talukas up to RL 2100 ft. while Mhaisal Lift Irrigation Scheme provides Irrigation in Miraj, and Kavathemahankal, Jath, Songala and Mangalvedha taluka up to RL. 2200 ft. There was persistent demand for irrigation benefits to areas above RL 2100 ft from Kadegaon, Khanapur, Tasgaon, Atpadi, Sangola, Kavathe Mahankal talukas by way of Lift Irrigation Scheme. As it was not possible to make changes in scope of KKLIS, which was in advanced stage of construction, a separate lift irrigation scheme named Tembhu Lift Irrigation Scheme was proposed for drought prone area of Kadegaon, Khanapur, Tasgaon, Atpadi, Sangola, Kavathemahankal taluka above RL 2100 Ft i.e. which could not be covered under KKLI scheme. Accordingly, a preliminary report based on topo sheet study was submitted to Govt. by C.E. (I.D.) Pune vide Letter No. PB/ Desk (2)/ DE (10) Tembhu/ 971 Dt. 22/02/1994 Govt. approved this proposal, vide letter No. 5-95/ 1093/ 668/ (140/93) WRI, DT. 15/04/1994 and directed to prepare D.P.R. of this scheme.

ii. The barrage across Krishna River @ Tembhu is constructed. The F.S.L. of barrage is within the river bank. The 11 gates of size 15 x 9 m. are provided to let out the water from Krishna River to irrigate 80472 ha (ICA) of land from drought prone regions of Satara, Sangli and Solapur districts of Maharashtra state. (Total 5 stages).

iii. The Proposed Expansion of Tembhu Lift Irrigation Project Taluka Karad, Dist. Satara, Sangli and Solapur, Maharashtra by M/s. Executive Engineer, Minor Irrigation Division, Sangli project envisage construction to irrigate ICA 41003 ha
   - Existing Khanapur -Tasgaon Canal (Stage 6 A-6B LIS)
   - Kavathe Mahankal Canal (Bevnur Scheme)
   - Palashi LIS (Palshi LIS)
   - 3 A to Ghanand Canal (Man - Khatav LIS)
   - Kamath Lake (Kamath Scheme)
   - Length of new pipeline proposed (PDN) : 200 km
   - Length of proposed Distributaries :1000 km
   - Total electricity requirement: 22 MW (Source: MSEDCL)
   - Water Utilization: Existing: 22.0 TMC + Proposed 8.00 TMC = Total 30.00 TMC

iv. Accordingly, detailed project Report of Tembhu Lift Irrigation Scheme was prepared which envisaged construction of barrage across river Krishna near village Tembhu and Lifting the stored water in 5 stages to irrigate 79600Ha. Of area from 7, taluka's of Satara, Sangli and Solapur district. This DPR was administratively approved by Govt. letter no. (Marathi) Tembhu 1095/ 1427/ (361/ 95) WRI dt. 19.02.1996. (for Rs. 1456.19 crores)

v. The project proposal was considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 51st meeting held during 12 Sept 2023 and recommended for grant of Terms of References (ToRs) for the Project. The ToR has been issued by Ministry vide letter File No: J-12011/48/2023-IA. I (R) Dated 02/11/2023.

vi. Earlier, Ministry had issued EC vide letter no. 12011/43/2003-A. I Dated August 17, 2007 to the existing project in favour of M/s. Minor Irrigation Circle, Maharashtra Krishna Valley Development Corporation, Warnali, Sangli.

vii. The geographical co-ordinate of the project are:

Location (Including coordinates)	Longitude: 74° 14’ (East) Latitude: 17° 17’ (North)

viii. **Land requirement:**

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	2265.13	2.78	2267.92
Forest Land	7.05	7.93	14.98
Total	2272.18	10.71	2282.90

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

x. **Water requirement:**

District	Taluka	No. of villages	ICA (Ha)	Water Requirement TMC

Sangli	1) Khanapur	11	6471	1.5
	2) Tasgaon	17	6026	1.00
	3) Kawathemahankal	9	2450	0.50
	4) Atpadi	12	5294	1.00
	5) Jat	4	2636	0.50
	Total of Sangli District	**53**	**22877**	**4.50**
Satara	6) Khatav	21	7440	1.50
	7) Maan	27	5686	1.00
	Total of Satara District	**48**	**13126**	**2.50**
Solapur	8) Sangola	8	5000	1.00
	Total Of Solapur District	**8**	**5000**	**1.00**
	Gross Total	109	41003	8.00

xi. **Project Cost:** The estimated project cost is Rs 7370.03 Cr. including existing investment of Rs 4088.14 crores. Total capital cost earmarked towards environmental pollution control measures is Rs. 25430 Lakhs and the Recurring cost (operation and maintenance) will be about Rs 160.00 L per annum.

Cost of project (Rupees in Crore)	Existing Project : Rs. 4088.14 Proposed Expansion: Rs.3281.89 Total Cost : Rs. 7370.03

1	EMP Capital Cost: (eg.: Air Environment, Water Environment)	25430 Lakhs
2	Recurring Cost per annum (In Lakhs)	160.00 Lakhs

xii. **Project Benefit**: Total Employment will be 15 persons as direct & 360 persons indirect after expansion. Industry proposes to allocate Rs 820 Lakh @ of 0.25 % towards CER (as per Ministry's OM dated 1st May 2018).

xiii. **Environmental Sensitive area:** There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. However, Mayani Bird Conservation Reserve & Other sacred groves are present within 10 km radius.

Sr. No.	Name of the Grove	Deity	Tahsil	Distance	Direction
1	Arewadi	Biroba	Kavathe Mahankal	3 km	SE
2	Raywadi	Lord Shiva	Kavathe Mahankal	3 km	W
3	Shukacharya	Sukhdev	Khanpur-Atpadi	2 km	NE
4	Mayani	Bird Conservation Reserve*	Khatav	1.28 km	NE

**5.2 km from Khatav Main Distributary*

xiv. **MoU / any other clearance/ permission signed with State government:**

Sr. No.	Approvals	Amount	DSR	Remarks
1.	Original Administrative Approval	1416.59	1995-96	GOM vide letter No. Tembhu-1095/1427/(361/95)/WRI date

				d 19/02/1996
2.	1st Revised Administrative Approval	2106.09	2000-01	MKVDC letter No MKVDDC/MP-6/(383/2002)/718 dated 22/01/2004
3.	CWC Approval	3450.35	2009-10	In 109th Technical advisory

				committee of Central Water Commission meeting on 14/03/2011
4.	2nd Revised Administrative Approval c	4088.94	2016-17	(work portion Rs.3729.82 Cr.+ ETP Rs.359.12 Cr)

	ost			
5.	3rd Revised Administrative Approval cost (Proposed)	7370.03	2022-23	(work portion Rs.6708.48 Cr.+ETP Rs.661.55 Cr)
6.	Upto date Expenditure Se	3388.33	2022-23	(work portion Rs.3155.52 Cr.+ETP

	ptember2022			Rs.232.81.Cr)
7.	Balance Cost of Project	3981.69	2022-23	(work portion Rs.3552.96 cr +ETP428.73 cr)
8.	Stage 1 Clearance	-	-	Stage 1 Clearance received vide online Proposal No.

				FP/MH/Pipeline/463995/2024 dated 06.01.2025

xv. **Resettlement and rehabilitation:**

For the Expansion of Tembhu Lift Irrigation Project, private land of around 2.7825 Ha is proposed for acquisition. The land acquisition will be done and compensation shall be paid to land owners as per The Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013. As there are no households in the land to be acquired, there is no issue of rehabilitation & resettlement of the land owners.

Details of Land Acquisition:

Sr. No	Name of Farmers	Village	Gut No	Area in Ha
1.	Shri. Dattu Chandrum	Vejegaon Tal:-Khanna	145	0.28

	oreandShri.LaxmanChandrumMore	pur,Dist.Sangli		
2.	Shri.RajaramGovindDevkar Shri.Han	VejegaonTal:-Khanapur,Dist.Sangl	146	0.19

	mantGovindDevkar	i		
3.	Shri.DavalMalikArchak	Bhikavadi Tal:-Khanapur, Dist.Sangli	992	0.0625
4.	Shri.UttamAtm	Renavi Tal:-Kh	498	0.40

	aramYadavandother	anapur, Dist. Sangli		
5.	Shri. Anil Pandhrinath Gaikeadandother10	Kasabe Vitaeast, Tal:-Khanapur, Dist. Sangli	194	0.40
6.	Smt.	Pos	836	0.05

	Sharadaramchandranicholandother	ewadi, Tal:-Khanapur, Dist. Sangli		
7.	Shri. Arjun Tukaram kole and other	Dhonewadi, Tal:-Kanapur, Dist. Sa	450	0.05

		ngli		
8.	Shri. Dipak Sadashiv Kanase and other 2	Vijaynagar, Tal-Khanapur, Dist. Sangli	309	0.05
9.	Ujwala Hinduraо Sawanto	Vitaputva	148	0.60

	ther 14			
10.	Maruthi Deo and others	Palashi Tal:-Khanapur Dist. Sangli	610/3	0.20
11.	Jagubai Bhimrao Chandanshiv	Palashi Tal:-Khanapur, Dist. Sa	602	0.40

	e, Mangal Bhimrao Chandansh ive and other	ngli		
12.	Umesh Sukhdeo Jadhav, Sulo	Palashi Tal:- Khanapur, Dist. Sa	232	0.10

	chnaSukhdeoJadhavandother	ngli		
Total				2.7825 Ha

xvi. **Scheduled -I species:**

Sr. No	**Class**	**Scientific Name**	**Common Name**	**IWPA Status**	**IUCN Status**
1.	Mammal	*Canis lupus*	Grey Wolf	Schedul	LC

Sr. No	Class	Scientific Name	Common Name	IWPA Status	IUCN Status
		s		e-I	
2.	Mammal	*Antilopecervicapra*	Blackbuck	Schedule–I	LC
3.	Mammal	*Hyenahyaena*	Striped Hyeana	Schedule–I	Not Enlisted
4.	Mammal	*Vulpesbengalale*	Bengal Fox	Schedule–I	LC

Sr. No	Class	Scientific Name	Common Name	IWPA Status	IUCN Status
		nsis			
5.	Mammal	*Bosgaurus*	Gaur	Schedule-I	VU
6.	Mammal	*Prionailurusrubiginosus*	Rusty Spotted Cat	Schedule-I	NT
7.	Mammal	*Felischaau*	Jungle Cat	Schedul	LC

Sr. No	Class	Scientific Name	Common Name	IWPA Status	IUCN Status
		s		e-I	
8	Bird	*Pavocristatus*	Indian Peafowl	Schedule-I	LC
9.	Bird	*Accipiter badius*	Shikra	Schedule-I	LC
10.	Bird	*Haliastur indus*	Brahminy Kite	Schedule-I	LC
1	R	C	M	S	V

Sr. No	Class	Scientific Name	Common Name	IWPA Status	IUCN Status
1.	eptile	rocodylus palustris	ugger	chedule–I	U
12.	Reptile	Fowleapiscator	Chequeredkeelback	Schedule–I	LC
13.	Reptile	Ptyasmucosa	Dhaman	Schedule-I	LC

Sr. No	Class	Scientific Name	Common Name	IWPA Status	IUCN Status
14	Reptiles	*Varanus bengalensis*	Bengal Monitor	Schedule-I	EN
15	Bird	*Platalea leucorodia*	Eurasian Spoonbill	Schedule–I	LC
16	Bird	*Sterna aurantia*	River Tern	Schedule–I	VU

Sr. No	Class	Scientific Name	Common Name	IWPA Status	IUCN Status
		a			
17	Bird	*Circaetus gallicus*	Short-toed Snake-Eagle	Schedule-I	LC
18	Bird	*Tringa nebularia*	Common Greenshank	Schedule-I	LC
19	Bird	*Aythya ferina*	Common P	Schedul	LC

Sr. No	Class	Scientific Name	Common Name	IWPA Status	IUCN Status
		na	ochard	e-I	
20	Bird	*Pericrocotus cinnamomeus*	Small Minivet	Schedule-I	LC
21	Bird	*Clanga clanga*	Greater Spotted Eagle	Schedule–I	VU

** VU = Vulnerable; **NT = Near Threatened, EN = Endangered*

xvii. **Baseline Environmental Scenario:**

<table>
<tr><td>Period</td><td>From 01/03/2023 to 31/12/2023</td></tr>
<tr><td>AAQ parameters at 14 locations (min. & Max.)</td><td>· PM10 = 23.5 to 76.3 µg/m3
· PM2.5 = 12.4 to 31.9 µg/m3
· SO2 = 6.2 to 16.5 µg/m3
· NOx = 10.4 to 23.2 µg/m3.
· CO = BDL</td></tr>
<tr><td>Surface water samples (10 samples)</td><td>
<table>
<tr><th>Parameter</th><th>Season 1</th><th>Season 2</th><th>Season 3</th></tr>
<tr><td>pH</td><td>7.01 to 7.43</td><td>7.02 to 7.49</td><td>7.1 to 7.5</td></tr>
<tr><td>TDS</td><td>385 to 1459 mg/lit.</td><td>357 to 1662 g/lit.</td><td>492 to 1415 mg/lit.</td></tr>
<tr><td>Total Hardness as Ca</td><td>154.3 to 517 mg/lit.</td><td>169.54 to 490.12 mg/lit.</td><td>171 to 514 mg/lit.</td></tr>
</table>
</td></tr>
</table>

CO3			
Calcium as Ca	46.13 to 113.37 mg/lit	50.13 to 130.45 mg/lit	48 to 110 mg/lit
Magnesium as Mg	18.13 to 83.28 mg/lit	20.14 to 83.02 mg/lit	23 to 80 mg/lit
Chloride as Cl	23.25 to 130.15 mg/lit	41.14 to 138.16 mg/lit.	19 to 104 mg/lit
Sulphate as SO	32.16 to 145.25	37.12 to 148.13	33 to 142 mg/lit.

4	mg/lit	mg/lit		
BOD	4 to 9 mg/lit	5 to 13 mg/lit	4 to 10 mg/lit	
COD	15 to 33 mg/lit	19 to 47 mg/lit	18 to 32 mg/lit	
DO	3.7 to 4.7 mg/lit	2.9 to 4.4 mg/lit	3.5 to 4.6 mg/lit	
Total Coliforms	present	present	present	

Ground Water samples at 36 locations

Parameters	**Season 1**	**Season 2**	**Season 3**
pH	7.02 to 7.5	7.08 to 7.6	7.03 to 7.78

	7	2	
Total Dissolved Solids	314 to 2012 mg/lit.	320 to 1990 mg/lit.	289 to 2183 mg/lit.
Total Hardness as CaCO3	140.56 to 758.13 mg/lit.	130.14 to 771.19 mg/lit.	125.16 to 767.52 mg/lit.
Calcium as Ca	41.08 to 124.1 mg/lit &	37.1 to 130.18 mg/lit &	18.52 to 145.12 mg/lit
Magne	13.26 to	14.25 to	11.13 to 95.27 mg/lit

siumasMg	92.14 mg/lit	95.24 mg/lit	
Chlorideas Cl&	24.25 to 110.92 mg/lit &	21.16 to 115.24 mg/lit	25.42 to 128.12 mg/lit
Sulphateas SO4	14.92 to 120.15 mg/lit.	16.02 to 120.14 mg/lit.	15.9 to 131.15 mg/lit.

Noise levels Leq (Day & Night) at 25 locations

The Leq values for day time was observed to be

Zone /Area	Day Time	Night Time
Residential Zone	47.3-to 54.8dB (A)	39.1to 43.8 dB (A).
Silent Zone	41.6-to 48.9dB (A)	33.2 to 39.8 dB (A).
Commercial Zone	66.5 to 69.4dB (A	60.5 to 64. 2 dB (A).

Soil Quality at 30 Locations

Parameters	**Season 1**	**Season 2**	**Season 3**
p	7.	7.	7.02 to

H	3 5 to 8. 0 5.	2 1 to 7. 9 2.	8.24.
C o n d u c ti vi t y	4 1 1. 8 to 9 0 0. 8 µ s/ c m.	5 0 1. 6 to 1 0 1 4. 6 µ s/ c m.	424.5 t o 872.5 µs/cm.
N	1 3 2. 1 2 to 1 6 8. 9 k g/ ha	1 1 8. 4 7 to 1 6 0. 3 k g/ ha	138.15 to 185. 15 kg/h a,
P	9. 1 5 to 2 5. 2 k g/ ha	1 1. 0 2 to 1 9. 1 k g/ ha	13.45 t o 24.1 kg/ha
K	1 5 2. 1 3 to 2 0	1 2 4. 0 5 to 2 0	148.1 t o 211.6 7 kg/ha

	<table><tr><td></td><td>4.3 kg/ha</td><td>6.1 kg/ha</td><td></td></tr></table>
Flora & Fauna	Total 172 floral species were recorded in and around the project area (i.e. 10 km radius study). Among them 41 Herbs, 97 Trees, 27 shrubs & climbers were 7. Fauna Diversity : Mammals - 15, Bird – 135, Fishes-109, Frog -3, Reptile -4, Total 22 Schedule 1 species observed in the study area

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

Domestic Waste:

Name of Waste	**Source**	**Qty (TPA)**
Dry Waste	Labour Colony	39.42
Wet Waste	Labour Colony	26.28

Details of Excavation Waste (Muck)

Name of Waste	Qty (cu.m)
Quantity of cutting material (muck)	2906835
Proposed utilization/disposese of cutting	2558014.624

material	
Quantity of filling material	34882 0.176
Source of filling Material	Trench cutting

The detail of the muck likely to be disposal at low lying area adjacent to project site

Sr. No	Stage of LIS	Total Muck quantity in cum
1	Man Khatav	104646
2	Kamat	69764
3	Bevnoor	69764
4	6 A and 6 B	34882
5	Palshi	34882
6	Budhyal	34882

xix. **Public Hearing Details**: Public Hearing for the proposed project has been conducted by the State Pollution Control Board at three districts separately.

Advertisement for PH with date	**Marathi Newspaper:** **Sangli:** Sakal Dated 19.01.2024 **Solapur:** Sanchar 31.01.2024**,** **Satara:** Pudhari Dated 01.02.2024**,** **English Newspaper**: **Sangli:** The Times of India Dated 19.01.2024, **Solapur:** Divya Marathi Dated 31.01.2024, **Satara:** The Indian Express Dated 01.02.2024
Date of Public Hearing	1. Sangli: 21/02/2024 2. Solapur: 01/03/2024 3. Satara: 05/03/2024
Venue	1. Vita Panchayat Samiti, Vita, Khanapur, Sangli 2. Bachat Bhavan Auditorium, Panchayat samite, Sangola, S olapur 3. Tai Convention Hall, Shri Shivaji Maharaj Chowk, Satara
Chaired by	1. Dr. Raja Dayanidhi, Chairman & District Magistrate, Sangl i 2. Mrs. Manisha Kumbhar, Chairman & Additional District M agistrate, Solapur 3. Shri. Nagesh Patil, Chairman &Upper District Magistrate (Residential Deputy Collector), Satara
Main issues raised during P H	All the participants raised the water scarcity issue by heart. Many years the local people are suffering due to drought
No. of people attended	Sangli: 157 Solapur: 102 Solapur: 140

xx. **Details of Certified compliance report submitted by RO, MoEF&CC.**

Dr. P. R. Sakhare, Scientist E, inspected the site to check implementation of environmental safeguards status on 29.07.2024.

Status of compliance of conditions stipulated in the environmental clearance granted by MOEF & CC New Delhi vide letter No. J-12011/43/2003-IAI, dated 17.08.2007 submitted by Regional Office, Nagpur, vide F. No. EC-2556/RON/2024-NGP/3436 dated 12th August, 2024.

xxi. **Status of Litigation Pending against the proposal, if any :** NIL

xxii. The salient features of the project are as under:

· **EAC Meeting Details:**

EAC meeting/s	Agenda ID: EC/AGENDA/EAC/216917/2/2025 Agenda Of 25th Meeting Of The Expert Appraisal Co mmittee
Date of Meeting/s	10/12/2025

Date of earlier EAC meetings	· 51st Meeting of EAC, MoEFCC, New Delhi held on 12/09/2023 (Agenda Item No. 51.4) for Terms of Reference (ToR) · 22nd Meeting of The Expert Appraisal Committee held on 10.01.2025 for EC (PP Absent) · 25th Meeting Of The Expert Appraisal Committee held on 27/02/2025 **for EC**. · 30th Meeting Of The Expert Appraisal Committee held on 30/04/2025 for EC

· **Project details:**

Name of the Proposal	Proposed Expansion of Tembhu Lift Irrigation Project Dist. Satara, Sangli and Solapur, Maharashtra
Proposal No.	IA/MH/RIV/482689/2024
Location (Including Coordinates)	Longitude: 74° 14' (East) Latitude : 17°17' (North)
Company's Name	Executive Engineer Minor Irrigation Division, Sangli Water Resource Department Maharashtra Krishna Valley Development Corporation (MKVDC), District Sangli 416 415
CIN no. of Company/user agency	-
Accredited Consultant and certificate no.	MITCON Consultancy & Engineering Services Ltd., Pune, Maharashtra Certificate No. NABET/EIA/24-27/RA 0343
Project location (Coordinates /River/ Reservoir)	Longitude: 74o 14' (East) Latitude : 17o17' (North)
Inter- state issue involved	No
Proposed on River/ Reservoir	-
Type of Hydro-electric project	Not Applicable
Seismic zone	Zone III (i. e. Moderate Risk Zone)

· **Category details:**

Cate	1 (c) Cat. 'A'

gory of the project	
Capacity/ Cultural command area (CCA)	

Sr No	Taluka	District	Command Area					
			GCA		CCA		ICA	
			Existing	Extended Area	Existing	Extended Area	Existing	Ex
A	Karad	Satara	1150	0	860	0	600	
B	Khanapur	Sangli	41135	19691	32921	11902	18975	
C	Kadegaon	Sangli	20215	0	16179	0	9325	
D	Tasgaon	Sangli	20570	15280	15450	11083	7700	
E	Atpadi	Sangli	61569	9015	43100	9737	16000	
F	Sangola	Solapur	36500	20745	29200	5876	20000	
G	Jat	Sangli	-	6506	-	4848	-	
H	Kavathe Mahankal	Sangli	17475	12455	10300	7826	7872	
I	Khatav	Satara	-	18362	-	13685	-	
J	Man	Satara	-	14033	-	10458	-	
	Total		**198614**	**116087**	**148010**	**75415**	**80472**	

At tracts the General Co	Yes, Bird Conservation Reserve located @ 1.2 km from proposed alignment

nditions (Yes/No)	
Additional information (if any)	

· **ToR/EC Details:**

ToR Proposal No.	IA/MH/RIV/439901/2023, F. No. J-12011/48/2023-IA. I (R)
EAC meeting date	12/09/2023
ToR L	F.No. J-12011/48/2023-IA. I (R)

<table>
<tr><td>etter No.</td><td></td></tr>
<tr><td>To R grant Date</td><td>02/11/2023</td></tr>
<tr><td>Cost of project</td><td>Existing Project: Rs 4088.14
Proposed Expansion: Rs. 3281.89
Total Cost: Rs. 7370.0</td></tr>
<tr><td>Total area of Project</td><td><table>
<tr><th>Nature of Land involved in (Ha)</th><th>Area Existing in Ha</th><th>Additional Area Proposed in Ha</th><th>Total Area required ansion in Ha</th></tr>
<tr><td>Non-Forest Land</td><td>2265.138</td><td>2.7825</td><td>2267.92</td></tr>
<tr><td>Forest Land</td><td>7.051</td><td>7.93</td><td>14.981</td></tr>
<tr><td>Total</td><td>2272.189</td><td>10.7125</td><td>2282.902</td></tr>
</table></td></tr>
<tr><td>Height of Dam from River Bed (EL)</td><td>NA</td></tr>
<tr><td>Details of submergence are</td><td>Not applicable as there is no submergence.</td></tr>
</table>

a	
District to provide irrigation facility (if applicable)	v Length of new pipeline proposed (PDN) : 200 km v Length of proposed Distributaries :1000 km
Details of tunnels on upper level & lower level and length of canal (if applicabl	Not Applicable

e)	
No. of affected Village.	9

No. of Affected Families

SI	Name of Farmers	Village	Gut No
1	Shri. DattuChandruMore and Shri. LaxmanChandruMore	Vejegaon Tal:-Khanapur, Dist. Sangli	145
2	Shri. Rajaram GovindDevkar Shri. Hanmant Govind Devkar	Vejegaon Tal:-Khanapur, Dist. Sangli	146
3	Shri. DavalMalik Archak	Bhikavadi Tal:-Khanapur, Dist. Sangli	992
4	Shri. Uttam Atmaram Yadav and other	Renavi Tal:-Khanapur, Dist. Sangli	498
5	Shri. Anil Pandhrinath Gaikead and other 10	Kasabe Vita east, Tal:-Khanapur, Dist. Sangli	194
6	Smt. Sharada Ramchandra Nichaland other	Posewadi, Tal:-Khanapur, Dist. Sangli	836
7	Shri. Arjun Tukaram Kole and other	Dhonewadi, Tal:-Kanapur, Dist. Sangli	450
8	Shri. Dipak Sadashiv Kanaseand other 2	Vijaynagar, Tal-Khanapur, Dist. Sangli	309
9	Ujawala Hindurao Sawant other 14	Vita putva	148
10	Maruthi Deoand others	Palashi Tal:-Khanapur Dist. Sangli	610/3
11	Jagubai Bhimrao Chandanshive, Mangal Bhimrao Chandanshive and other	Palashi Tal:-Khanapur, Dist. Sangli	602
12	Umesh Sukhdeo Jadhav, Sulochna Sukhdeo Jadhav and other	Palashi Tal:-Khanapur, Dist. Sangli	232
Total		2.7825 Ha	

Project Be

- With increased land parcels from draught prone area getting irrigated, farmers are shifting fr crops like sorghum, pearl millet and wheat to Cash crops like sugarcane, pulses, grapes, ar granate.
- Provide better consumer experience and improved operational performance with an end-to-en

nefits	age from pump house to water distribution network with minimum water charges cost to fa v The drought prone area earlier is transforming to horticulture hub. v Improvement in operational performance and reliability in water supply by futuristic intervent bled through SCADA interventions qualifying smart utilities and digital utilities. v Generation of Employment - The draught prone area under the jurisdiction of Tembhu LIS has activities for income generation.
R&R details	For the Expansion of Tembhu Lift Irrigation Project, private land of around 2.7825 Ha is propose uisition. The land acquisition will be done and compensation shall be paid to land owners as per t to Fair Compensation & Transparency in Land Acquisition, Rehabilitation and Resettlement Act

Command area

Sr No	Taluka	District	Command Area					
			GCA		CCA		ICA	
			Existing	Extended Area	Existing	Extended Area	Existing	E
A	Karad	Satara	1150	0	860	0	600	
B	Khanapur	Sangli	41135	19691	32921	11902	18975	
C	Kadegaon	Sangli	20215	0	16179	0	9325	
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E	Atpadi	Sangli	61569	9015	43100	9737	16000	
F	Sangola	Solapur	36500	20745	29200	5876	20000	
G	Jat	Sangli	-	6506	-	4848	-	
H	Kavathe Mahankal	Sangli	17475	12455	10300	7826	7872	
I	Khatav	Satara	-	18362	-	13685	-	
J	Man	Satara	-	14033	-	10458	-	
	Total		**198614**	**116087**	**148010**	**75415**	**80472**	

Types of Waste and quantity o

Name of Waste	Source	Qty (TPA)
Dry Waste	Labour Colony	39.42
Wet Waste	Labour Colony	26.28

Sr No	Type of material	Total generated quantity in excavation in cum	Total generated qu in excavation in M
1	Soft Soil	225174.6	0.225175
2	Hard murum & soft Rock	505580.2	0.50558
3	Hard Rock	2176080	2.176080

f generation during Construction/ Operation		**Total**	2906835	2.90684
Material used for blasting and its composition as per DGMS standards.	Not Applicable		
E-Flows for the P	NA		

roject	
Is Projects earlier studied in Cumulative Impact assessment & Carrying Capacity studies(CIA&CC) for River in which project located. I	NA

c)	f yes then 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.	
Details on provision of fish pass	NA
Project benefit including employment details (no of employee)	**During construction phase** ***Permanent employment*** · No. of permanent employment: 360 · Period of employment (days): 730 ***Temporary employment*** Temporary / Contractual employment (No. of Man days): 33000 **During operational phase** · Permanent employment proposed: 10 · Temporary employment proposed: 5
Area of Compe	Compensatory land 4.50 ha non forest land gut no. 36 at Village Pimpri B, Tal Atpadi, Dist Sang for Compensatory afforestation. 130 number of trees will be affected and same will be transpla arby area.

nsatory Afforestation (CA) with tentative no of plantation.	
Previous EC details	Environmental clearance for 80472 ha ICA. Vide letter No.12011/43/2003-A.I Dated August 17,
EC Compliance Report by R. O, MOEF& CC	Dr. P. R. Sakhare, Scientist E, inspected the site to check implementation of environmental safe tatus on 29.07.2024. Status of compliance of conditions stipulated in the environmental clearance granted by MOEF w Delhi vide letter No. J-12011/43/2003-IAI, dated 17.08.2007 submitted by Regional Office, N ide F. No. EC-2556/RON/2024-NGP/3436 dated 12th August 2024

· **Muck Management Details:**

No. of proposed dispos	**Sr. No**	**Stage of LIS**	**Total Muck quantity i**

<table>
<tr><td>al area/ (type of Land /Pvt. land)</td><td>
<table>
<tr><th></th><th></th><th>n cum</th></tr>
<tr><td>1</td><td>Man Khatav</td><td>104646</td></tr>
<tr><td>2</td><td>Kamat</td><td>69764</td></tr>
<tr><td>3</td><td>Bevnoor</td><td>69764</td></tr>
<tr><td>4</td><td>6 A and 6 B</td><td>34882</td></tr>
<tr><td>5</td><td>Palshi</td><td>34882</td></tr>
<tr><td>6</td><td>Budhyal</td><td>34882</td></tr>
</table>
Muck likely to be disposal at low lying area adjacent to project Site</td></tr>
<tr><td>Cross section of proposed muck area, Height of muck with slope.</td><td>Utilization of 80 % of excavated material shall be backfilled in Approach roads, Conveyance roads, Pump House and 20% shall be filled in low laying areas and local bunds of agriculture land.</td></tr>
<tr><td>Distance of muck disposal area(location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.</td><td>Average 0 km to 5 km</td></tr>
<tr><td>Total Muck Disposal Area</td><td>
<table>
<tr><th>Sr. No</th><th>Stage of LIS</th><th>Total Muck quantity in cum</th></tr>
<tr><td>1</td><td>Man Khatav</td><td>104646</td></tr>
<tr><td>2</td><td>Kamat</td><td>69764</td></tr>
<tr><td>3</td><td>Bevnoor</td><td>69764</td></tr>
<tr><td>4</td><td>6 A and 6 B</td><td>34882</td></tr>
<tr><td>5</td><td>Palshi</td><td>34882</td></tr>
<tr><td>6</td><td>Budhyal</td><td>34882</td></tr>
</table>
</td></tr>
<tr><td>Estimate Muck to be generated</td><td>
<table>
<tr><th>Sr No</th><th>Type of material</th><th>Total generated quantity in excavation in cum</th><th>Total generated quantity in excavation in Mm^3</th></tr>
<tr><td>1</td><td>Soft Soil</td><td>225174.6</td><td>0.225175</td></tr>
<tr><td>2</td><td>Hard murum & soft Rock</td><td>505580.2</td><td>0.50558</td></tr>
<tr><td>3</td><td>Hard Rock</td><td>2176080</td><td>2.176080</td></tr>
<tr><td></td><td>Total</td><td>2906835</td><td>2.90684</td></tr>
</table>
</td></tr>
<tr><td>Transportation</td><td>By Road</td></tr>
<tr><td>Monitoring mechanism for Muck Disposal Transportation</td><td>Environmental Management Cell (EMC) shall monitor mechanism of muck disposal.</td></tr>
</table>

· **Land Area Breakup:**

Private land	2265.138 + 2.7825 = 2267.92
Government land/Forest Land	7.051 + 7.93 = 14.981
Submergence area/Reservoir area	NA
Land required for project components	

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	2265.138	2.7825	2267.92
Forest Land	7.051	7.93	14.981
Total	2272.189	10.7125	2282.902

· **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	

Nature of L	**Area Existing in**	**Additional Area Proposed in Ha**	**Total Area required after expansion in Ha**

and involved in (Ha)	**Ha**		
Forest Land	7.051	7.93	14.981

Sacred groves & conservation reserves present in the study area

Sr. No.	Name of the Grove	Deity	Tahsil	Distance	Direction
1	Arewadi	Biroba	Kavathe Mahankal	3km	SE
2	Raywadi	Lord Shiva	Kavathe Maha	2km	W

<table>
<tr><td></td><td></td><td>
<table>
<tr><th>Sr. No.</th><th>Name of the Grove</th><th>Deity</th><th>Tahsil</th><th>Distance</th><th>Direction</th></tr>
<tr><td></td><td></td><td></td><td>nkal</td><td></td><td></td></tr>
<tr><td>3</td><td>Shukacharya</td><td>Sukhdev</td><td>Khanpur-Atpadi</td><td>2km</td><td>NE</td></tr>
<tr><td>4</td><td>Mayani</td><td>Bird Conservation Reserve*</td><td>Khatav</td><td>1.28 km</td><td>NE</td></tr>
</table>
*5.2 km from Khatav Main Distributary
</td></tr>
<tr><td>National Park</td><td>No</td><td>-</td></tr>
<tr><td>Wildlife Sanctuary</td><td>No</td><td>Not Applicable as per Parivesh Web portal under applicability of green clearances</td></tr>
</table>

Archaeological sites monuments/ historical temples etc.	No	No within 10 km Radius
Additional information (if any)	-	-

· **Court case details:** Nil

· **Status of other statutory clearances**

Particulars	**Letter no. and date**
Status of Stage- I FC	Stage 1 Clearance received vide online Proposal No. FP/MH/Pipeline/466395/ 2024 dated 06.01.2025
Approval of Central Water Commission	In 109th Technical advisory committee of Central Water Commission meeting on 14/03/2011

Approval of Central Electricity Authority	NA
Additional detail (If any)	NA
Is FRA (2006) done for FC-I	Yes

· **Details of the EMP**

Sr. No	Pollution Control & Other Environment Infrastructure	Capital Cost Rs. Lakhs	Recurring Cost (per annum) Rs. Lakhs
1.	Ambient Air Quality	-	12.00
2.	Noise Level	-	25.00
3.	Surface and Ground Water Quality	-	15.00
4.	Soil Quality	-	15.00
5.	Solid/ hazardous wastes	03.00	15.00
6.	Green Belt Development	400.00	50.00
7.	Fisheries Conservation & Management Plan	15.00	
8.	Labour Management Plan	25.00	
9.	Wildlife Conservation Plan	75.00	
10.	Muck Management Plan	25.00	
11.	Health & Safety	-	25.00
12.	Command Area Development Plan	24887.00	
Summary of allocation of fund for EMP			
1.	EMP Capital Cost: (eg.: Air Environment, Water Environment)	25430 Lakhs	

Sr. No	Pollution Control & Other Environment Infrastructure	Capital Cost Rs. Lakhs	Recurring Cost (per annum) Rs. Lakhs
2.	Recurring Cost per annum (In Lakhs)	160.00 L	
3.	Project Cost (in Cr.)	3281.89	
4.	Corporate Environmental Responsibility	820.00	

44.5.3 The proposal was earlier considered by the EAC in its 22nd meeting held on 10.01.2025 wherein PP did not attend the meeting. Afterwards, the proposal was again considered by the EAC in its 22nd meeting held on 10.01.2025. Accordingly, PP submitted following additional details sought by the EAC on 9th April, 2025:

Query 1: PP shall submit the status of the 3.83 Ha of forest land for obtaining Stage-I Forest Clearance (FC), along with all relevant supporting documents.

Reply: Status of the online application of forest land for obtaining Stage-I Forest Clearance (FC) is as below

Sr. No.	Area in ha	Village /Scheme	Status
FP/MH/Pipeline/479779/2024	0.63	Vejegaon & Bhikawadi, Tal- Khanapur, Dist-Sangli	Proposal pending at APCCF, Nagpur
FP/MH/Pipeline/ 514447/2024	0.922	Rewangaon, Pare, Vita Stage 6 A & 6 B	Pending at DCF Office, Sangli

And few more forest land proposals are pending at DFO Sangli office for area evaluation. The forest land for project is increasing because in the pipe drain network (PDN) area on revenue records the land is with government of Maharashtra or private land but in actual it is in custody of forest. Therefore, the proposals are increasing and the initially assessed land area is increasing.

Query 2: PP shall submit a closure report from the RO, MoEF&CC, addressing the observations/ suggestions provided by the RO, MoEF&CC.

Reply: Closure report F. No. EC-2556/RON/2024-NGP/14157 dated 9th April 2025 has been submitted.

Query 3: The concurrence/ approval of CWC for hydrology of the present expansion proposal shall be examined and a clarification of CWC in this regard be submitted.

Reply: The proposed expansion of Tembhu LIS project is the part of Tembhu project and its approved by Government of Maharashtra. Hydrology and water availability for this project is assessed by the State Chief Engineer Hydrology and within the state allocated share of 585 TMC water by KWDT-1. It is an enbloc allocation so projects is in within the allocated share of the state. So separate concurrence /approvals for this expansion of the project is not necessary at this stage.

Query 4: The MoU for water usage for the proposed project shall be submitted along with an English-translated copy, duly attested by the PP.

Reply: The MoU for water usage for the project has been submitted. However, for proposed expansion projects MOU will be signed after completion of Command Area Development Works (CADA)

Query 5: PP shall submit detail plan on water utilization for existing project and proposed Project.

Reply: The Tembhu Lift Project lifting of 22.00 TMC of water from Krishna river and utilizing it for irrigation of 80472 Ha of ICA command area from drought prone talukas of Sangli, Satara and Solapur districts. Also proposed to utilize an addition 8 TMC of water for providing irrigation facility to 109 villages from Sangli, Satara and Solapur districts. Availability of water for Tembhu Lift Irrigation scheme is 30 TMC and which is available from following sources.

S. No.	Sources	Content
1	Koyana Dam	18.46 TMC
2	Wang Dam	0.97 TMC
3	Tarali Dam	1.67 TMC
4	Krishna river monsoon flow	0.90 TMC
5	Balance Water of Tembhu Project (As per 1st Tribunal report)	3.500 TMC
6	Krishna Canal Project Difference i n Total provision & actual use of water (as per 1st Tribunal repor t)	2.5 00 TMC
7	Saving of water (Qty to be diverted towards western from Koyana Project)	2.00 TMC
	Total Qty Of Water	**30.00 TMC**

Tembhu scheme has water use of 30.00 TMC and the water use is as per following:

Sr. No.	Description	Water requirement in TMC			
		Kharif	Rabi	H.W.	Total
1	Irrigation purpose	6.06	16.72	5.41	28.19
2	Non-irrigation purp ose	1.21			1.21
3	K.T. Weir on Man ri ver	---			0.60
				Total	30.00

Details of villages of existing command of Tembhu Project is as given below:

District	Taluka	No. of villages	ICA(Ha)	Water Require ment TMC
Sangli	1) Khanapur	54	18957	5.19

	2) Tasgaon	35	7700	2.11
	3) Kawathemahankal	31	7872	2.15
	4) Atpadi	47	16000	4.37
	5) kadegaon	39	9325	2.55
	Total Of Sangli District	206	59854	16.37
Satara	karad	3	600	0.16
	Total Of Satara District	3	600	0.16
Solapur	8) Sangola	31	20000	5.47
	Total Of Solapur District	31	20000	5.47
	Gross Total	240	80472	22.00

Details of villages of proposed command of Extented Tembhu Project is as given below:

District	**Taluka**	**No. of villages**	**ICA (Ha)**	**Water Requirement TMC**
Sangli	1)Khanapur	**11**	**6471**	**1.5**
	2) Tasgaon	**17**	**6026**	**1.00**
	3) Kawathemahankal	**9**	**2450**	**0.50**
	4) Atpadi	**12**	**5294**	**1.00**
	5) Jat	**4**	**2636**	**0.50**
	Total Of Sangli District	**53**	**22877**	**4.50**
Satara	6) Khatav	**21**	**7440**	**1.50**
	7) Maan	**27**	**5686**	**1.00**
	Total of Satara District	48	13126	2.50
Solapur	8) Sangola	**8**	**5000**	**1.00**

	Total Of Solapur	**8**	**5000**	**1.00**
	Gross Total	**109**	**41003**	**8.00**

The same data was submitted in EIA report also.

Query 6: PP shall submit details of land reclamation practices undertaken in the existing project. Based on these practices, a comprehensive plan for implementing land reclamation in the proposed expansion shall also be submitted.

Reply: Existing land reclamation practices focus on the efficient use of excavated materials to restore and enhance land conditions. The muck retained from excavation is utilized for backfilling purposes, ensuring stability and support for construction or rehabilitation activities. Additionally, the excess muck is strategically placed in low-lying areas to improve land elevation and prevent water logging. The topsoil layer, which is rich in nutrients, is provided to nearby farmers for agricultural purposes.

Reclamation land practices for proposed expansion will be according to PDN Policy. After adopting the PDN policy in 2017 by government of Maharashtra. Extensive PDN work was executed by water resources department 2018-2020. While executing the PDN work the alignment of PDN was through farmer's fertile land. To avoid the losses of farmers, we have made reclamation of land by refilling the top 1 to 1.5 feet layer root zone of with fertile soil from nearby area and make the land to its original state as before excavation.

Encloses the geo tagged photographs of the existing practices and some area where PDN work was executed and then land work reclaims and after that the farmers are taking regular crops on it.

Similar to above we have made provision of around 303558.79 m3 of soil for top 1 feet of layer of fertile soil for reclamation of land. For the proposed expansion work.

44.5. The proposal was re-considered by the EAC in its 30th EAC meeting held on 30.04.2025 wherein EAC sought additional information from the PP. Accordingly, PP submitted following additional details sought by the EAC on 02.12.2025:

Query 1: The PP shall submit the approval/ concurrence/clarification of the Central Water Commission (CWC) for the preliminary hydrology chapter related to the proposed expansion.

Reply: The Screening Committee of CWC under the chairmanship of Chief Engineer, PAO, CWC, in its meeting held on 14.11.2025, considered the Preliminary Report of "Tembhu Lift Irrigation Project (Extended with ICA of 41,003 Ha), Maharashtra". In light of the discussions held in the meeting of Screening Committee of CWC, the "In Principle" consent/Clarification/approval received from CWC for "Tembhu Lift Irrigation Project (Extended with ICA of 41,003 Ha), Maharashtra" vide OM of meeting Dated: 18/11/2025

The In-Principle consent for preparation of DPR will have a validity of three years, within which, State Govt. has to submit the DPR, otherwise, extension and/or fresh "in- principle" consent needs to be obtained from CWC.

Query 2: The PP is required to re-check and revise the Water Balance Table, ensuring all values are accurate and consistent with the hydrological and project design parameters. The revised table must be accompanied by a brief explanation of methodology and assumptions used.

Reply:

Project authority has indicated the following water availability (savings) for Extended Tembhu LIS (irrigated area 41003 ha)

Sl. No.	Source of water	Quantity
1	Water available from Tarali Project	2.50 TMC

2	Water available from Wang Project 1	1.00 TMC
3	Saving from Krishna Canal	2.50 TMC
4	River Flow in Monsoon	2.00 TMC
	Total	8.00 TMC

Water Balance Table for Existence and Proposed

Tembhu Project (Original)					**Tembhu Project (Extension)**			**Grand Total**	
District	Taluka	No. of villages	ICA (Ha)	Water Use inTMC	No. of villages	ICA (Ha)	Water Use inTMC	ICA (Ha)	Water Use in TMC
Satara	Karad	3	600	0.16				600	0.16
	Khatav				29	7,440	1.45	7,440	1.45
	Man				19	5,686	1.11	5,686	1.11
Sangli	Khanapur	54	18,175	5.19	11	6,471	1.26	24,646	6.45
	Tasgaon	35	8,500	2.11	17	6,026	1.18	14,526	3.29
	Atpadi	47	16,000	4.37	12	5,294	1.03	21,294	5.40
	K' Mahankal	31	7,872	2.15	9	4,255	0.83	12,127	2.98
	Kadegaon	39	9,325	2.55				9,325	2.55
	Jath				4	2,636	0.51	2,636	0.51
Solapur	Sangola	31	20,000	5.47	8	3,195	0.63	23,195	6.10
Total		**240**	**80,472**	**22.00**	**109**	**41,003**	**8.00**	**1,21,475**	**30.00**

Methodology

Crop water requirement by Modified Penman Method:

“NET IRRIGATION REQUIREMENT of each crop is worked out modified penman method. For this ETo values of Miraj climatological station area considered Crop factors (kc) are adopted as per published data of State Agriculture Department.

Effective Rainfall and Net Irrigation Requirement: -

Fortnightly effective rainfall is worked out from observed rainfall data of 11 rains Gauge station influencing command area listed below, for the period 1993 to 1991 And is appended NIR is worked out with the help of computer software available in S.E.I.P. & W.R.I. Circle Pune’s office.

A) Season wise water requirement for 1000 Ha. of I.C.A. is as under.

Season	NIR Ha.m/ Mcft	GIR with 45.5% sy stem fficiency Ha. m/Mcft.	NIR Ha.m/ Mcft	GIR with 66.50% system efficiency Ha.m/Mcft.
Kharif	76.07/26.86	167.19/59.03	76.07/26.86	114.39/40.39
Rabi	210.05/74.17	461.65/163.01	210.05/74.17	315.86/111.53
H.W.	67.93/23.99	149.3/52.72	67.93/23.99	102.15/36.07
Total	354.05/125.02	778.13/274.76	354.05/125.02	532.4/187.99

B) Water requirement for 1,21,475 Ha.

	Season wise Water requirement for 61,611 Ha. for open canal		Season wise Water requirement for 59,864 Ha. for closed canal	
Season	**Mcum**	**TMC**	**Mcum**	**TMC**
Kharif	103.00743	3.64	68.47843	2.42
Rabi	284.42718	10.04	189.08643	6.68
H.W.	91.985223	3.25	61.151076	2.16
Total	479.41367	16.93	318.71594	11.26

C) Total Water Utilization for Tembhu Project is 30 TMC out of which 28.19 TMC is for irrigation purpose, 0.6 TMC for K.T weirs on Man River and 1.21 TMC is for Non-Irrigation Purpose (Drinking and Industrial).

3.5.3. Deliberations by the committee in previous meetings

Date of EAC 1 :10/01/2025

Deliberations of EAC 1 :

The accredited consultant ‘MITCON Consultancy & Engineering Services Limited’ vide email dated 10.01.2025 informed that they will be unable to attend meeting and present their case. Accordingly, the EAC decided to **defer** the matter.

Date of EAC 2 :27/02/2025

Deliberations of EAC 2 :

The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted by the Project Proponent and the details presented during the meeting. The Committee observed that the proposal pertains to the grant of Environmental Clearance for the Expansion of Tembhu Lift Irrigation Project in an area of 2284.601 ha at Village Tembhu, Ranad, Govare and etc, Sub District Khatav, Atpadi, Karad and etc, District Satara, Sangli and Solapur, Maharashtra by M/s Minor Irrigation Division, Sangli Water Resources Department, Maharashtra Krishna Valley Development Corporation.
- The project falls under Item 1(c) of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, and is categorized as a Category 'A' project, which requires appraisal at the Central level by the Expert Appraisal Committee (EAC).
- The EAC, constituted under the provisions of the EIA Notification, 2006, and comprising expert members/domain experts from various relevant fields, examined the proposal submitted by the Project Proponent. This examination included a review of the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports, which were prepared and submitted by a QCI/NABET-accredited consultant on behalf of the Project Proponent.
- The EAC further noted that the Ministry had granted Environmental Clearance (EC) to the existing project vide letter No. 12011/43/2003-A.I dated 17/08/2007, in favor of M/s. Minor Irrigation Circle, Maharashtra Krishna Valley Development Corporation, Warnali, Sangli for an Irrigation Command Area (ICA) of 80,472 ha. For the current expansion project, the Ministry has issued Terms of Reference (ToR) for conducting the Environmental Impact Assessment (EIA)/Environmental Management Plan (EMP) and a public hearing vide letter File No. J-12011/48/2023-IA.I(R) dated 02/11/2023.
- The EAC also noted that the project was previously considered during its 22nd meeting on 10/01/2025. However, the proposal was deferred as the Project Proponent (PP) did not attend the meeting.
- The EAC noted that the Project Proponent has given an undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP reports. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the project proponent.
- The EAC further noted that the total land area required for the project is 2282.90 ha, comprising 2272.18 ha of the existing project area and an additional 10.71 ha required for the proposed expansion. Of this additional land, 2.78 ha is non-forest land, while 7.93 ha is forest land. The PP informed that for the 7.93 ha of forest land, Stage-I Forest Clearance (FC) has already been obtained for 4.10 ha (vide FP/MH/Pipeline/466395/2024 dated 06/01/2025), while the proposal for the remaining 3.83 ha has been submitted for approval.
- The estimated project cost is ₹7370.03 crore, which includes the existing investment of ₹4088.14 crore. A total capital cost of ₹193.00 lakh has been allocated for environmental pollution control measures, with a recurring (operation and maintenance) cost of ₹160.00 lakh per annum.
- The Committee discussed the issues raised during the Public Hearing (PH) which was conducted in three districts as per the EIA Notification, 2006 and reviewed the action plan submitted by the Project Proponent to address these concerns. After careful deliberation, the Committee found the action plan satisfactory.
- The EAC observed that approval on the Hydrology has been obtained from State Government, vide letter (Marathi) शासन ननर्णय क्र. टेंभूसुप्रमा- /0411प्रक्र/11/305.मोप्र1-नि2019/02/04. The expert representative from CWC informed the Committee that DPR of the existing project was examined by the CWC; however, the PP has not submitted the DPR for concurrence of CWC for present expansion proposal.

- Additionally, the EAC noted that Certified Compliance Report of earlier EC conditions has been submitted by RO, MoEF&CC vide F. No. EC-2556/RON/2024-NGP/3436 dated 12th August, 2024. The RO, MoEF&CC raised serious concerns over compensatory afforestation, Multidisciplinary Committee, non- submission of half yearly compliance report etc. Taking cognizance of these issues, the EAC requested the PP to submit a closure report from the RO, MoEF&CC, addressing the observations/ suggestions provided by the RO, MoEF&CC.

The EAC after detailed deliberations deferred the proposal for want of following additional information:

1. PP shall submit the status of the 3.83 Ha of forest land for obtaining Stage-I Forest Clearance (FC), along with all relevant supporting documents.
2. PP shall submit a closure report from the RO, MoEF&CC, addressing the observations/suggestions provided by the RO, MoEF&CC.
3. The concurrence/approval of CWC for hydrology of the present expansion proposal shall be examined and a clarification of CWC in this regard be submitted.
4. The MoU for water usage for the proposed project shall be submitted along with an English-translated copy, duly attested by the PP.
5. PP shall submit detail plan on water utilization for existing project and proposed project.
6. PP shall submit details of land reclamation practices undertaken in the existing project. Based on these practices, a comprehensive plan for implementing land reclamation in the proposed expansion shall also be submitted.

Date of EAC 3 :30/04/2025

Deliberations of EAC 3 :

The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted by the Project Proponent and the details presented during the meeting. The Committee observed that the proposal pertains to the grant of Environmental Clearance for the Expansion of Tembhu Lift Irrigation Project in an area of 2284.601 ha at Village Tembhu, Ranad, Govare and etc, Sub District Khatav, Atpadi, Karad and etc, District Satara, Sangli and Solapur, Maharashtra by M/s Minor Irrigation Division, Sangli Water Resources Department, Maharashtra Krishna Valley Development Corporation.
- The project falls under item 1(c) of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended and is categorized as a Category 'B1' project, as Culturable Command Area (CCA) is 223425 Ha. However, presence of Mayani Bird Conservation Reserve it requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

Earlier observations by the EAC

- The EAC, constituted under the provisions of the EIA Notification, 2006, and comprising expert members/domain experts from various relevant fields, examined the proposal submitted by the Project Proponent. This examination included a review of the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports, which were prepared and submitted by a QCI/NABET-accredited consultant on behalf of the Project Proponent.
- The EAC further noted that the Ministry had granted Environmental Clearance (EC) to the existing project vide letter No. 12011/43/2003-A.I dated 17/08/2007, in favor of M/s. Minor Irrigation Circle, Maharashtra Krishna Valley Development Corporation, Warnali, Sangli for an Irrigation Command Area (ICA) of 80,472 ha. For the current expansion project, the Ministry has issued Terms of Reference (ToR) for conducting the Environmental Impact Assessment (EIA)/Environmental Management Plan (EMP) and a public hearing vide letter File No. J-12011/48/2023-IA.I(R) dated 02/11/2023.
- The EAC also noted that the project was previously considered during its 22nd meeting on 10/01/2025. However, the proposal was deferred as the Project Proponent (PP) did not attend the meeting.
- The EAC noted that the Project Proponent has given an undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP reports. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the project proponent.
- The EAC further noted that the total land area required for the project is 2282.90 ha, comprising 2272.18 ha of the existing project area and an additional 10.71 ha required for the proposed expansion. Of this additional land, 2.78 ha is non-forest land, while 7.93 ha is forest land. The PP informed that for the 7.93 ha of forest land, Stage-I Forest Clearance (FC) has already been obtained for 4.10 ha (vide FP/MH/Pipeline/466395/2024 dated 06/01/2025), while the proposal for the remaining 3.83 ha has been submitted for approval.
- The estimated project cost is ₹7370.03 crore, which includes the existing investment of ₹4088.14 crore. A total capital cost of ₹193.00 lakh has been allocated for environmental pollution control measures, with a recurring (operation and maintenance) cost of ₹160.00 lakh per annum.
- The Committee discussed the issues raised during the Public Hearing (PH) which was conducted in three districts as per the EIA Notification, 2006 and reviewed the action plan submitted by the Project Proponent to address these concerns. After careful deliberation, the Committee found the action plan satisfactory.
- The EAC observed that approval on the Hydrology has been obtained from State Government, vide letter (Marathi) शासन ननर्णय क्र. टेंभूसुप्रमा- /0411प्रक्र/11/305.मोप्र1-

नि2019/02/04. The expert representative from CWC informed the Committee that DPR of the existing project was examined by the CWC; however, the PP has not submitted the DPR for concurrence of CWC for present expansion proposal.

- Additionally, the EAC noted that Certified Compliance Report of earlier EC conditions has been submitted by RO, MoEF&CC vide F. No. EC-2556/RON/2024-NGP/3436 dated 12th August, 2024. The RO, MoEF&CC raised serious concerns over compensatory afforestation, Multidisciplinary Committee, non- submission of half yearly compliance report etc. Taking cognizance of these issues, the EAC requested the PP to submit a closure report from the RO, MoEF&CC, addressing the observations/ suggestions provided by the RO, MoEF&CC.

Current deliberations:

- The EAC observed that approval of pre chapter of hydrology is a requisite document for examination of the proposal. In this regard, earlier, an ADS was raised and PP couldn't submit the document for appraisal. Therefore, it was opined that PP shall obtain concurrence/ approval of CWC for hydrology of the present expansion or otherwise.
- The EAC further noted that the values submitted in the water balance table shall be rechecked and be submit accordingly.

The proposal ***deferred*** on the following lines.

i. The PP shall submit the approval/concurrence/clarification of the Central Water Commission (CWC) for the preliminary hydrology chapter related to the proposed expansion.

ii. The PP is required to re-check and revise the Water Balance Table, ensuring all values are accurate and consistent with the hydrological and project design parameters. The revised table must be accompanied by a brief explanation of methodology and assumptions used.

3.5.4. Deliberations by the EAC in current meetings

The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted by the Project Proponent and the details presented during the meeting. The Committee observed that the proposal pertains to the grant of Environmental Clearance for the Expansion of Tembhu Lift Irrigation Project in an area of 2284.601 ha at Village Tembhu, Ranad, Govare and etc, Sub District Khatav, Atpadi, Karad and etc, District Satara, Sangli and Solapur, Maharashtra by M/s Minor Irrigation Division, Sangli Water Resources Department, Maharashtra Krishna Valley Development Corporation.
- The project falls under item 1(c) of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended and is categorized as a Category 'B1' project, as Culturable Command Area (CCA) is 223425 Ha. However, presence of Mayani Bird Conservation Reserve it requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

Observations of the EAC in its meeting held on 10.01.2025

- The EAC, constituted under the provisions of the EIA Notification, 2006, and comprising expert members/domain experts from various relevant fields, examined the proposal submitted by the Project Proponent. This examination included a review of the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports, which were prepared and submitted by a QCI/NABET-accredited consultant on behalf of the Project Proponent.
- The EAC further noted that the Ministry had granted Environmental Clearance (EC) to the existing project vide letter No. 12011/43/2003-A.I dated 17/08/2007, in favor of M/s. Minor Irrigation Circle, Maharashtra Krishna Valley Development Corporation, Warnali,

Sangli for an Irrigation Command Area (ICA) of 80,472 ha. For the current expansion project, the Ministry has issued Terms of Reference (ToR) for conducting the Environmental Impact Assessment (EIA)/Environmental Management Plan (EMP) and a public hearing vide letter File No. J-12011/48/2023-IA.I(R) dated 02/11/2023.

- The EAC also noted that the project was previously considered during its 22nd meeting on 10/01/2025. However, the proposal was deferred as the Project Proponent (PP) did not attend the meeting.
- The EAC noted that the Project Proponent has given an undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP reports. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the project proponent.
- The EAC further noted that the total land area required for the project is 2282.90 ha, comprising 2272.18 ha of the existing project area and an additional 10.71 ha required for the proposed expansion. Of this additional land, 2.78 ha is non-forest land, while 7.93 ha is forest land. The PP informed that for the 7.93 ha of forest land, Stage-I Forest Clearance (FC) has already been obtained for 4.10 ha (vide FP/MH/Pipeline/466395/2024 dated 06/01/2025), while the proposal for the remaining 3.83 ha has been submitted for approval.
- The Committee discussed the issues raised during the Public Hearing (PH) which was conducted in three districts as per the EIA Notification, 2006 and reviewed the action plan submitted by the Project Proponent to address these concerns. After careful deliberation, the Committee found the action plan satisfactory.
- The EAC observed that approval on the Hydrology has been obtained from State Government, vide letter (Marathi) शासन ननर्णय क्र. टेंभूसुप्रमा- /0411प्रक्र/11/305.मोप्र1-नि2019/02/04. The expert representative from CWC informed the Committee that DPR of the existing project was examined by the CWC; however, the PP has not submitted the DPR for concurrence of CWC for present expansion proposal.
- Additionally, the EAC noted that Certified Compliance Report of earlier EC conditions has been submitted by RO, MoEF&CC vide F. No. EC-2556/RON/2024-NGP/3436 dated 12th August, 2024. The RO, MoEF&CC raised serious concerns over compensatory afforestation, Multidisciplinary Committee, non- submission of half yearly compliance report etc. Taking cognizance of these issues, the EAC requested the PP to submit a closure report from the RO, MoEF&CC, addressing the observations/ suggestions provided by the RO, MoEF&CC.

Observations of the EAC in its meeting held on 30.04.2025

- The EAC observed that approval of pre chapter of hydrology is a requisite document for examination of the proposal. In this regard, earlier, an ADS was raised and PP couldn't submit the document for appraisal. Therefore, it was opined that PP shall obtain concurrence/ approval of CWC for hydrology of the present expansion or otherwise.
- The EAC further noted that the values submitted in the water balance table shall be rechecked and be submit accordingly.

Current meeting EAC deliberations:

- The EAC noted that during the last two meetings, the Committee had repeatedly emphasized the requirement for concurrence/approval from the Central Water Commission (CWC) for the hydrology of the proposed expansion. The Committee further noted that the PP has now submitted in Principle consent/Clarification/approval for "Tembhu Lift Irrigation Project (Extended with ICA of 41,003 Ha), Maharashtra" vide OM 18/11/2025 granted by CWC.
- The Committee also examined the revised Water Balance Table and noted that the PP has provided comprehensive data on water availability for the Extended Tembhu LIS along with the consolidated water requirement for the entire command area of 1,21,475 ha, totaling

30 TMC. Additionally, the Committee found the methodology, assumptions, and water balance figures to be technically sound and satisfactory.

- The EAC noted that the estimated project cost is Rs 7370.03 Cr. including existing investment of Rs 4088.14 crores. Total capital cost earmarked towards environmental pollution control measures is Rs. 25430 Lakhs and the Recurring cost (operation and maintenance) will be about Rs 160.00 L per annum.

3.5.5. Recommendation of EAC

Recommended

3.5.6. Details of Environment Conditions

3.5.6.1. Specific

Miscellaneous:	
1.	After 5 years of the commissioning of the project, a study shall be undertaken regarding impact of the project on the environment. The study shall be undertaken by an independent agency.
2.	PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground). A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis.
3.	A dedicated team to oversee environmental management activities (at project site) shall be set up comprising Environment Manager having post graduate qualification in Environmental Sciences/ Environment Engineering along with other supporting staff. The Environment Manager Shall report to Project Head directly.
4.	PP shall procure construction material only from those Organizations having all valid legal/statutory clearances/permissions or necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and as amended thereof.
Socio-economic:	
1.	Land acquired for the project shall be suitably compensated in accordance with the prevailing guidelines of the state government and provisions under Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
2.	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.
3.	Solar panel be provided to the families living in rural areas within 10 km radius of project.

4.	School up to 12th Standard with smart classrooms shall be established to provide quality education for children from project affected villages/Tribal villages.
5.	Skill Development Centre shall be established within 10 km radius of the project and regular training programmes for development and promotion of traditional art/products of tribal/local population.
6.	The compliance of above conditions shall be monitored by IRO, MoEF&CC and regularly site visit once in year. The compliance report of IRO shall be regularly submitted to MoEF&CC.
7.	Bio-Gas plant shall be installed in the Project affected villages @ per family for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.
Disaster Management:	
1.	Disposal of the excavated muck and its filling on the low-lying area with proper measures for the stabilization and greenery to minimize the impacts of the generated construction muck shall be taken up pari passu with construction work.
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.	The green belt plan and reclamation plan of existing canal shall be implemented strictly in time bound manner, and bi-annual status shall be submitted to regional office in six monthly compliance report. The EAC Sub-Committee observations shall be suitably incorporated in the reclamation plan.
2.	The Environmental Management Plan (EMP) shall strictly adhere 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.
3.	The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.
4.	Ambient Air Quality Monitoring Stations for real time data to be installed at project site before commencement of the construction, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.
5.	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.
6.	Native plants shall be planted around the muck disposal area in consultation with Forest Department and the survival of plants shall be reported in the 6 monthly compliance report.
7.	Plantation of saplings (10000 nos.) shall be carried out as a part of the tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).

3.5.6.2. 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.

4. Any Other Item(s)

N/A

5. List of Attendees

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

MINUTES OF THE 44TH MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 10TH DECEMBER, 2025 THROUGH VIDEO CONFERENCE

The 44th meeting of the EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on through virtual mode, under the Chairmanship of Prof. G. J. Chakrapani. The list of Members present in the meeting is at **Annexure**.

Confirmation of the Minutes of the 43rd EAC meeting:

The Minutes of the 43rd EAC meeting held on 12th November, 2025 were confirmed.

Agenda Item No. 44.1

Hiran Closed-Loop Pumped Storage Project (1000 MW) in an area of 300 Ha located at village Tala, Kanra, etc., Sub-District Patan & Jabera, District Jabalpur and Damoh, Madhya Pradesh by M/s Renew Green (Tnj Two) Private Limited – Terms of References (TOR) – reg.

[Proposal No. IA/MP/RIV/557786/2025; F. No. J-12011/42/2025-IA.I (R)]

44.1.1 The proposal is for grant of Terms of Reference (ToR) to the project Hiran Closed-Loop Pumped Storage Project (1000 MW) in an area of 300 Ha located at Tala, Kanra, etc., Sub-District Patan & Jabera, District Jabalpur and Damoh, Madhya Pradesh by M/s Renew Green (Tnj Two) Private Limited.

44.1.2 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. Hiran Standalone Pumped Storage Project is a self-identified project, envisages construction of upper reservoir located near Tala village in Jabera tehsil of Damoh district whereas the lower reservoir is located near Akona/Duhara villages in Patan tehsil of Jabalpur district of the state.

ii. Hiran PSP is planned to be constructed with two reservoirs, i.e., an upper and a lower reservoir, which will impound pumped river water by means of constructing CFRDs. These reservoirs will be connected through a surface powerhouse. The plant is envisaged to operate on a closed-loop system with storage for 6 hours of peaking.

iii. The proposed project site is in Damoh and Jabalpur districts in the state of Madhya Pradesh. The upper reservoir is located near Tala village in Jabera tehsil of Damoh district is about 90 km from Jabalpur airport and lower reservoir is located near Akona/Duhara villages in Patan tehsil of Jabalpur district is about 60 km from Jabalpur airport.

iv. The geographical coordinates of the proposed upper reservoir are at latitude 23°26'18.67" North and longitude 79°45'12.78" East and that of lower reservoir are at 23°25'37.51" North and 79°44'59.22" East. The proposed rating of Pumped Storage Project is 1000 MW.

v. **Land requirement:** The total land required for the construction of various components and related works for Hiran PSP is estimated to be around 300.0 ha, out of which 183.5 ha is non-forest land and 116.5 ha is forest land. Diversion of forest land for non-forest purpose will be involved for construction of Hiran project components. Therefore, Forest Clearance is required to be obtained under Forest Conservation Act.

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

- Villages within the project area are small, scattered, and primarily agrarian. Population density is low compared to state averages.
- The project area comes under tribal belt represented mainly by Baiga, Gond & Saur, and their occupation is mainly based on Agriculture, livestock rearing, fishing and wage labour .
- Some people of these community also collect clay to manufacture bricks from Hiran reserved forest and biproducts of medicinal plants from the Tala reserve forest for their livelihood.
- Basic infrastructure such as schools, health facilities, and road networks exists but remains underdeveloped.

Parameters	Damoh District			Jabalpur District		
	Tala	Katangi	Amjhir	Akauna	Dohra	Charguwan
Households	19	362	13	22	77	101
Total Population	110	1368	75	86	333	443
Male Population	64	701	41	45	166	234
Female Population	46	667	34	41	167	209
Scheduled Caste (SC) Pop.	0	258	0	0	58	0
Scheduled Tribe (ST) Pop.	82	103	0	0	227	23

(Source: Census 2011; Mission Antyodaya 2020)

- The demographic profile of the villages surrounding the project area indicates that Katangi is the largest settlement with a total population of 1,368 residing in 362

households. In contrast, Amjhir is the smallest, with only 75 people and 13 households.

- Across all locations, the male and female populations are nearly balanced, though males slightly outnumber females in most villages.
- Scheduled Tribe (ST) populations are significant in several settlements, especially Dohra (227) and Tala (82). In contrast, Amjhir and Akauna report no ST population.
- The presence of Scheduled Caste (SC) populations is limited: only Katangi (258) and Dohra (58) report SC residents, while all other villages have zero SC population.

vii. **Water requirement:** Water requirement for Hiran PSP is 19.59 MCM (17.41 MCM Gross storage of for lower reservoir + 2.07 MCM dead storage of upper reservoir + 0.11 MCM vol. of WCS) of water will be lifted one-time from nearby existing Hiran River by pumping (which is located at about 1.27 km from the proposed lower reservoir). The Hiran PSP is envisaged with a total gross storage capacity of 14.62 MCM in the Upper reservoir and 17.41 MCM in the Lower reservoir.

viii. **Project Cost:** The estimated project cost is Rs 5876.23 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).

ix. **Project Benefit:** Total Employment will be 1000 nos during construction & 55 nos during O&M persons as direct & indirect.

x. **Environmental Sensitive area:** Veerangana Durgawati WLS is about 7.0 km from project area. All the components of the project are outside the ESZ boundary. ESZ boundary is notified vide notification S.O.4617(E) dated 8th November 2021; therefore, Wildlife clearance is not applicable. Water will be pumped from Hiran River.

xi. In principal approval of Initial Allotment of Hiran Pumped Hydro Storage by Office of the Commissioner, New and Renewable Energy, Bhopal vide letter no. F/NRE/2025-26/05-11/456 dated August 20, 2025.

xii. **Alternative Studies:**

Two different alternatives have been studied for choosing the final layout of the project. The following aspects have been considered for formulation of alternative layouts.

- Maximum utilization of available head at the project site.
- Minimal area of Forest land acquisition to accommodate project components
- Topography and Geological considerations
- Development of economical and optimized layout
- Ease of construction.
- Operational consideration during the operations of the plant over its service life
- Surface Vs. Underground PH based on geology

Continuous peaking of 6 hours has been considered for fixing installed capacity and computation of annual energy.

Alternative – 1: Layout with **Surface Powerhouse** and other components of this scheme are Upper reservoir, Intake structure, Penstock / Pressure Shaft, Tail Race Outlet and Lower reservoir for the capacity of 1000 MW.

Alternative – 2: Layout with **Surface Powerhouse** and other components of this scheme are Upper reservoir, Intake structure, Penstock / Pressure Shaft, Tail Race Outlet and Lower reservoir for the capacity of 1000 MW.
Upper reservoir for Alternative-1 and Alternative-2 are located in the same plateau with overlapping boundary. However, the locations of the lower reservoir for Alternatives 1 and 2 are different. Minimum distance between lower reservoirs is about 500 m.

Summary of Alternatives

S. No.	Description	Alternative-1	Alternative-2	Remarks
1	Type of Power House	Surface	Surface	
2	Water Source	Hiran River		**ALT-2 (SELECTED FOR ADOPTION)**
3	District	Damoh & Jabalpur		
4	Upper Reservoir			
	Lattitude/Longitude	23°26'18.67"N, 79° 45'12.78"E	23°26'18.67"N, 79° 45'12.78"E	
	Bed Level (m)	567	567	
	Max.Dam Height (m)	24	24	
	Length of Dam (m)	3435	3432	
	Type of Dam	CFRD	CFRD	
	Top of the Dam (m)	591	591	
	FRL (m)	587	587	
	MDDL (m)	570	570	
	Area at FRL (Ha)	77.7	78.07	
	Area at MDDL (Ha)	69.31	69.69	
	Live Storage capacity (MCM)	12.49	12.55	
5	**Lower Reservoir**			
	Latitude/Longitude	23°25'15.47"N, 79°44'45.61"E	23°25'37.51"N, 79°45'59.22"E	
	Bed Level (m)	367	367	

S. No.	Description	Alternative-1	Alternative-2	Remarks
1	Type of Power House	Surface	Surface	
	Max Dam Height (m)	24	24	
	Length of Dam (m)	4596	3988	
	Type of Dam	CFRD	CFRD	
	Top of the Dam (m)	391	391	
	FRL (m)	387	387	
	MDDL (m)	370	370	
	Area at FRL (Ha)	93.25	92.84	
	Area at MDDL (Ha)	81.9	83.04	
	Live Storage capacity (MCM)	14.88	14.94	
6	Total Discharge(cumecs)	577.97	580.82	
7	Max Head (m)	217	217	
8	Min Head (m)	179	178	
9	Rated Net Head (m)	195.97	195	
10	Max Min Head ratio	1.21	1.22	
11	IC (MW)	1000	1000	
12	Nos. of Turbine Units	4	4	
13	Unit Capacity (MW)	4 no.s of 250 MW	4 no.s of 250 MW	
14	Unit Discharge (cumecs)	144.49	145.21	
15	Length of the WCS		924.85	
	Main Pressure shaft			
	Nos.	4	4	
	Diameter (m)	5.8	5.8	
	Length (m)	659.58	734.53	
	Main Tail Race Tunnel			
	Nos.	4	4	
	Diameter (m)	7.6	7.6	
	Length (m)	194.45	193.15	
16	Upstream L/H Ratio	3.37	3.77	
17	Upstream Surge Tank	Not Required	Not Required	

S. No.	Description	Alternative-1	Alternative-2	Remarks
1	Type of Power House	Surface	Surface	
18	Downstream Surge Gallery	Not Required	Not Required	
19	Max Excavation in Power House (m)	76	79	
20	Storage Capacity (MWh)	6000		
21	Annual Energy (MU)	2080.5	2080.5	
22	Land Acquisition	Upper and Lower reservoir area falls in the forest area only	Upper reservoir area falls in the forest area, but the lower reservoir area falls in the private agriculture land.	

Land Requirement for Alternatives

Sl.No.	Project Component	Alternative 1			Alternative 2		
		Forest Land (Ha)	Non-Forest Land (Ha)	Total (Ha)	Forest Land (Ha)	Non-Forest Land (Ha)	Total (Ha)
1	Upper Reservoir & Dam	94.3	-	94.3	100	-	100
2	Lower Reservoir & Dam	120	-	120	-	117.5	117.5
3	WCS, PH, Pothead Yard	7.4	1	6.2	7.8	-	7.8
4	Approach Road to all Components	6.6	1	7.6	7.2	-	7.2

Sl.No.	Project Component	Alternative 1			Alternative 2		
		Forest Land (Ha)	Non-Forest Land (Ha)	Total (Ha)	Forest Land (Ha)	Non-Forest Land (Ha)	Total (Ha)
5	Site Office	-	1	1	-	1	1
6	Crushing & Batching Plant	*10	-	*10	*5	*5	*10
7	Stacking Area & Workshop	-	5	5	-	5	5
8	Magazine Area	-	1	1	-	1	1
9	Labor Camp	-	5	5	-	5	5
10	Colony Area	-	10	10	-	10	10
11	Muck Disposal Area	-	44	44	-	44	44
12	Water Pipeline Filling Including Pump House	1.7	-	1.7	1.5	-	1.5
	Total	**230**	**68**	**298**	**116.5**	**183.5**	**300.0**

*This area is included in UR & LR.

Selection of Final Alternative

The forest land required for Alternatives 1 and 2 is 230 Ha and 116.5 Ha respectively. However, total land required (including private land) for alternative 1 and 2 is 298 Ha and 300 Ha respectively. Nevertheless, the Forest land needed for Alternative 1 exceed that of Alternative 2 by roughly 113.5 Ha respectively.

Alternative 2 with surface powerhouse has been considered for preparation of pre-feasibility report owing to its advantages over Alternatives 1 as mentioned above.

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

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

- **Project details:**

Name of the Proposal	Hiran Pumped Storage Project
Location (Including coordinates)	Lower Reservoir : Latitude: 23°25' 37.51" N Longitude: 79° 44' 59.22" E Upper Reservoir : Latitude: 23° 26' 18.67" N Longitude: 79° 45' 12.78" E
Inter- state issue involved	No
Seismic zone	Zone-III

- **Category details:**

Category of the project	A
Provisions	
Capacity / Cultural command area (CCA)	1000 MW
Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	Nil

- **Electricity generation capacity:**

Powerhouse Installed Capacity	1000 MW
Generation of Electricity Annually	2096.5 MU
No. of Units	4 nos. (4 x 250 MW)
Additional information (if any)	Nil

- **ToR/EC Details:**

Cost of project	5876.23 Cr.
Total area of Project	300.0 ha
Height of Dam from River Bed (EL)	Lower Dam – 24.0 m Upper Dam –24.0 m
Length of Tunnel/Channel	924.85 m
Details of Submergence area	217.50 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	Not Applicable, as this is Closed Loop Pumped Storage Project (PSP)
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then a) E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Basin. b) If not the E-Flows maintain criteria for sustaining river ecosystem.	No
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	500

- **Muck Management Details:**

No. of proposed disposal area/ (type of land- Forest/Pvt. land)	44 ha (Non-Forest 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:**

Private Land	183.50 ha
Government land	-
Forest Land	116.50 ha
Total Land	300.0 ha
Submergence area/Reservoir area	217.50 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	--	• Veerangana Durgawati WLS is about 7.0 km from project area. • All the components of the project are outside the ESZ boundary. ESZ boundary is notified vide notification S.O.4617(E) dated 8th November 2021; therefore, Wildlife clearance is not applicable.
National Park	--- --	
Wildlife Sanctuary	--- --	

- **Court case details:**

Court Case	Nil
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/25-28/RA0415 Validity : August 15, 2028

	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 other statutory clearances	Forest Clearance - Online application seeking forest diversion for around 116.5 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

44.1.3 The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA/EMP and Public hearing for Hiran Closed-Loop Pumped Storage Project (1000 MW) in an area of 300 Ha located at Tala, Kanra, etc., Sub-District Patan & Jabera, District Jabalpur and Damoh, Madhya Pradesh by M/s Renew Green (Tnj Two) Private Limited.

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

- The EAC observed that the Hiran PSP is proposed to generate 1000 MW comprises of Upper and Lower reservoir located away from riverine system and therefore it is treated as a close loop PSP. Water requirement for Hiran PSP is 19.59 MCM (17.41 MCM

Gross storage of for lower reservoir + 2.07 MCM dead storage of upper reservoir + 0.11 MCM vol. of WCS) of water will be lifted one-time from nearby existing Hiran River. Water will be pumped from Hiran River.

- The EAC noted that total land required for the construction of various components and related works for Hiran PSP is estimated to be around 300.0 ha, out of which 183.5 ha is non-forest land and 116.5 ha is forest land. Diversion of forest land for non-forest purpose will be involved for construction of project components. However, it was observed that the application for Stage-I Forest Clearance (FC) has not yet been submitted, which necessitates further action from the Project Proponent.

- The PP informed that the Veerangana Durgawati WLS is about 7.0 km from project area and ESZ boundary is notified vide notification S.O.4617(E) dated 8th November 2021. PP also informed that all the components of the project are outside the ESZ boundary, therefore, Wildlife clearance is not applicable. However, the EAC noted the recent establishment of Veerangana Durgavati Tiger Reserve, which has been formally notified as the seventh Tiger Reserve in the State of Madhya Pradesh under Section 38V of the Wildlife (Protection) Act, 1972. This Tiger Reserve covers the Nauradehi Wildlife Sanctuary and the Veerangana Durgavati Wildlife Sanctuary, covering a total area of approximately 2,339 km² with core and buffer zones designated to strengthen tiger conservation and biodiversity protection. The EAC further noted that the Hiran Closed-Loop Pumped Storage Project (1000 MW) is proposed at a distance of approximately 2.8 km from the boundary of the notified Tiger Reserve. However, the EAC emphasized that the Project Proponent shall obtain a duly issued certificate/No Objection Certificate (NoC) from the concerned State Forest Department and/or the National Tiger Conservation Authority (NTCA), as applicable, confirming that the proposed project area does not fall within any tiger habitat and does not intersect or adversely affect any identified tiger corridor.

- It has been observed that in-principal approval of Initial Allotment of Hiran Pumped Hydro Storage issued by Office of the Commissioner, New and Renewable Energy, Bhopal vide letter no. F/NRE/2025-26/05-11/456 dated August 20, 2025.

44.1.4 The EAC based on the information submitted and as presented during the meeting, recommended the proposal for grant of Specific ToR issued by the Ministry for Close Loop Pumped Storage Projects vide OM dated 14.08.2023 for conducting EIA study for proposed construction of the project for Hiran Closed-Loop Pumped Storage Project (1000 MW) in an area of 300 Ha located at village Tala, Kanra, etc., Sub-District Patan & Jabera, District Jabalpur and Damoh, Madhya Pradesh by M/s Renew Green (Tnj Two) 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. A detailed action plan need to prepare ensuring that no natural rivulets, drainage channels, or streams feeding the river are disturbed, diverted, or obstructed due to the construction or operation of the project. A detailed study on surface hydrology shall be carried out to assess and demonstrate that the natural drainage pattern of the area remains unaffected.

ii. PP shall submit the Water Utilization Mapping within a 10 km radius of the project for examining the impacts on sustainability of ecosystem of the region after withdrawal of water for proposed project. The risk analysis w.r.t water availability shall also be carried out.

iii. Detailed action plan for large scale plantation of native species of plant sapling within 10 km radius of the project shall be prepared in consultation with State Forest Department.

iv. Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for 116.5 ha of forest land involved in the project shall be submitted within stipulated time.

v. A detailed assessment shall be carried out to optimize and possibly reduce the land area earmarked for quarrying area.

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

vii. The Project Proponent shall obtain, certificate/No Objection Certificate (NoC) from the Chief Wildlife Warden and/or the National Tiger Conservation Authority (NTCA), as applicable, certifying the distance of the Hiran Closed-Loop Pumped Storage Project (1000 MW), from the boundary of the notified Tiger Reserve, and that any part of the project component does not fall within any notified or potential tiger habitat and does not intersect, fragment, or adversely affect any identified tiger corridor. The certificate/NoC so obtained shall be submitted as part of the EIA/EMP documentation for appraisal.

viii. Certificate and certified map from Chief Wildlife Warden shall also be submitted mentioning that project boundary is not falling in any Ecological Sensitive Area, Wildlife Sanctuary/Tiger/elephant corridor/Critically polluted area within 10 km of Project site.

ix. The PP shall prepare a detailed Wildlife Conservation Plan in consultation with the State Forest Department for all Schedule–I species reported or likely to be present in

the project area, including the influence zone. The plan shall be duly approved by the Chief Wildlife Warden of the State prior to appraisal of the proposal for Environmental Clearance in view project location around Veerangana Durgawati TR.

x. PP shall submit the detailed plan for filling the reservoir along with necessary approval form water resource department.

xi. Transportation Plan for transporting construction materials shall be submitted.

xii. The baseline data collection will cover the changes in biological and ecological profile of the region after monsoon with worst-case scenario study and critical mineral assessment.

xiii. Risk Assessment Study of aquatic biota through its mapping in all streams and nullahs in the study area during rainy season shall be submitted in the EIA/EMP report.

xiv. Detailed study on human-animal conflict during project construction and operation shall be conducted considering past incidences and proper action plan for its management shall be prepared in consultation with State Wildlife Department.

xv. Calculation and values of GHGs (CO_2, CH_4 etc.) emissions during construction and during operation till the life of the project shall be estimated and submitted.

xvi. The longitudinal connectivity/Free flowing sketch be provided in the EIA/EMP report.

xvii. Details of mineral zone, if any, in the study area, certified by Geological Survey of India or any other concerned Government Organization shall be submitted. The project area should not come up on any critical mineral zone, the same shall to be verified by GSI/NMDC.

xviii. Quantitative values of Impact modelling of environmental parameters shall be submitted for during construction and operation. Also, mitigation measures shall be submitted in terms of construction and operation phase.

xix. Conducting site-specific ecological study emphasizing on riverine ecology viz. fishes diversity, fish migration, habitat and aquatic biota due to construction PSP. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.

xx. Cumulative Impact of projects in the basin on carrying capacity and sustainability of Reservoir/ River /nala of catchment area due to tapping of water for filling reservoir shall be studied.

xxi. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Specific 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.

xxii. 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.

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

xxiv. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Indian Council of Agriculture Research (ICAR) Institutes/ Expert Govt. institutions and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report. All springs available in the study area shall be mapped and action plan for their conservation and protection need to be prepared.

xxv. Any archaeological sites in the vicinity of the project, if any, then it shall be certified by ASI.

xxvi. Environmental Cost Benefit Analysis shall be done in terms of loss of Forest ecosystem due to diversion of Forest land/loss of biodiversity, water availability, water uses for generation of hydro power and Ecological flows.

[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. A comparative chart of issues raised by General Public during Public Hearing and commitments made by the Project Proponent will be prepared and submitted in the relevant chapter of EIA/EMP report.

iii. PP shall submit the credible documents to show the status of land acquisition w.r.t project site from/through the concerned State Government as required under Ministry's

OM dated 7th October, 2014 for the project land to be acquired.

iv. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines. Private land (if any) shall be acquired as per provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. Budget earmarked for R&R, CSR shall not be included in the cost of EMP.

[C] Muck Management:

i. Details of quantity of muck generation component wise, types of muck (Excavation in tunnels, pressure shaft and powerhouse etc.) and disposal site/ transportation to be provided.

ii. Details of muck management such as dumping sites and its locations, transportation plan along with monitoring mechanism for muck transportation, detailing the road map of project construction site/ indicating the distances from HFL, river, project construction site along with types of road etc.

iii. Safety measures for avoiding spill over muck into the riverbed/streams and its flow into the river during the high discharge/ flood or monsoon period. Prepare plan for stabilization of muck disposal sites using biological and engineering measures 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.

iv. Restoration plan for construction area including dumping site of excavated materials by levelling, filling up of burrow pits, landscaping etc.

[D] Disaster Management:

i. Impact of Project activities (specially blasting and drilling) on the aquatic and terrestrial ecosystem, within study area to be studied and be incorporated in EIA/EMP report.

ii. The muck dumping sites shall be located with a distance of 100 mts from HFL. The PP shall submit the detailed action plan for transportation of muck along with monitoring mechanism of movement of muck carrying trucks.

[E] Miscellaneous:

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

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

iii. The PP should submit the photograph of monitoring stations & sampling locations. 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 analyze the samples.

iv. Drone video of project site shall be recorded and to be submitted.

v. Undertaking need to be submitted on affidavit stating that no activities has been started on the project site.

vi. Detailed plan to restore wider roads and convert them into narrow up to 10m after construction of the project.

vii. Specific Terms of Reference (ToRs) issued by the Ministry vide Office Memorandum No. F. No. IA3-22/33/2022-IA.III dated 14.08.2023 for Pumped storage projects shall be used for preparation of EIA/ EMP reports.

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

Agenda Item No. 44.2

Savitri Open Loop Pumped Storage Project (2400 MW) in an area of 310.76 Ha located at Village Javali, Dare, Haroshi, Karanje etc, Sub-district Poladpur and Mahabaleshwar, District Satara and Raigarh, Maharashtra by M/s NHPC limited - Terms of References (TOR) – reg.

[Proposal No. IA/MH/RIV/551075/2025; F. No. J-12011/43/2025-IA.I (R)

44.2.1 The proposal is for grant of Terms of Reference (TOR) to the project Savitri Open Loop Pumped Storage Project (2400 MW) in an area of 310.76 Ha located at Village Javali, Dare, Haroshi, Karanje etc, Sub-district Poladpur and Mahabaleshwar, District Satara and Raigarh, Maharashtra by M/s NHPC limited.

44.2.2 The Project Proponent and the accredited Consultant M/s. EQMS Global Pvt. Ltd made a detailed presentation on the salient features of the project and informed that:

i. The proposed Savitri Pumped Storage Project (2400MW), a self-identified off stream open loop project, is being developed by the NHPC around two adjacent valleys drained by the Koyna River and Savitri River in District Satara, and Raigad, Maharashtra.

ii. The project, conceived as an open loop project of installed capacity 2400 MW/15072MWH pumped storage component with 6.28 hours storage capacity for peak power generation shall be located in District Satara and Raigad, Maharashtra. The project is being developed by the NHPC around two adjacent valleys drained by the Koyna River and Savitri River in District Satara, and Raigad, Maharashtra.

iii. The upper and lower dams for the PSP are proposed to be newly constructed. The proposed upper dam (embankment/GFRD) is located across Koyna River, which is a tributary of Krishna River, in Jaoli village near Mahabaleshwar, Satara district. The proposed lower dam (concrete gravity) is located across Savitri River near Lahulase village, Tehsil Poladpur, Raigad district.

iv. The project will generate 2400 MW (8x300MW) by utilizing a design discharge of 60.74 cumec/turbine with rated head of 561.67m. The PSP will utilize 2560 MW(8x320MW) to pump 51.33 cumec/pump from lower reservoir to the upper reservoir. The scheme of operation for the project is 6.28 hours of peak power per day and 7.43 hours for pumping back the water through TRT-reversible turbines-pressure shaft-HRT to the upper reservoir.

v. Water will be used cyclically for energy storage and discharge. For reservoir operation the project contemplates non-consumptive re-utilization of 11.23 MCM of water for recirculation among two proposed reservoirs. The one-time filling requirement of 19.58 MCM and periodical recoupment for losses(1.47MCM) will be met from yield generated within lower dam catchment area (18.94 sq.km) and used cyclically for energy storage and discharge.

vi. The geographical co-ordinates of the project are:
Upper Reservoir Coordinates: 17° 56' 47.04" N & 73° 37' 13.73" E

Lower Reservoir Coordinates: 17° 57' 56.59" N & 73° 35' 11.10" E

vii. **Land requirement:** Total land requirement of the project is 310.76 ha (Forest: 55.64 ha; Government: 170.12 ha; Private 85.00 ha). The private land shall be acquired as per provisions of RFCTLARR Act, 2013.

viii. **Demographic details in 10 km radius of project area:** As per the Census of India 2011, the total population 72 villages of study area comprising of total 9799 households are 42889 composed of 21428 males and 21461 females with sex ratio of 1002.The cast wise composition of the total population of the project affected villages is made up of scheduled cast population of 2808 (6.55%) and Scheduled Tribe population of 3412 (7.96%). The literate population is 30658(80.06%) of which the male and female

population is 16881(88.20%) and 13777 (71.92%) respectively. The gender gap for literacy rate is 16.28 %. The total working population is 17756 (41.40%) which comprises of main workers 15107(35.22%) and marginal workers 2649(6.18%).

ix. **Water requirement:** The quantity of water required during construction is estimated as 1200kld (Construction-1100 kld; Domestic-100kld) which shall be drawn from Savitri/Koyna River. Water can be pumped and stored in a tank at higher elevation.

x. **Project Cost:** The estimated project cost is Rs 11826 crores (August 2023PL) including existing investment. Total capital cost and recurring annual cost (operation & maintenance) towards EMP shall be earmarked after evaluating cost of EMPs.

xi. **Project Benefit:** The benefits inter alia shall include the benefits like (i) Average annual generation of 5226.22 MU of energy with 95% plant availability; (ii) Increased vegetal cover due to implementing of CAT Plan and Green Belt Development Plans (iii) Employment Potential during construction (1000 labour); (iv) Overall development of area by implementing CSR initiatives and Watershed Development Plans.

xii. **Environmental Sensitive area:**

(a) Raigad Conserve Reserve: Part of water conductor system, powerhouse and access roads, fall within the Raigad Conserve Reserve.

(b) Mahabalehwar-Panchgani ESZ: Upper dam/reservoir, submergence area, upper intake and part of water conductor system are in Mahabalehwar-Panchgani ESZ.

No archaeological monument of national importance lies either in the project area or in its submergence area. There is also no national heritage structure in the area.

xiii. **MoU / any other clearance/ permission signed with State government:** A MoU has been signed between NHPC and Deptt. of Energy, Govt. of Maharashtra on 06th June'23 for establishment of 4 nos. PSPs including Savitri PSP. Subsequently, another MoU was signed between NHPC & Govt. of Maharashtra on 03rd Sep'24 for development of the PSPs with an objective to prepare the DPR & submit to CEA/GoMWRD for its approval.

xiv. **Resettlement and rehabilitation**: There shall be displacement of families. R&R details shall be finalized later after grant of ToR.

xv. **Alternative Studies**: With broad location of upper and lower dams defined as per MoU signed between Government of Maharashtra and NHPC, the dam axis for upper and lower dam fixed considering minimal R&R issues. Based on two water conductor alignments (WCS-1 and WCS-2), with no suitable site available for deep pit powerhouse, four alternative layouts have been studied and examined for various aspects and environmental perspectives.

Alternate-I: It comprises WCS-1 alignment (total length 3839.1m) consisting of partly surface and partly underground pressure shaft; underground TRT, without surge shaft option, and underground powerhouse. The L/H ratio would be 6.79. The tentative cost would be Rs 12770 crores, the highest of all alternatives. This alternate is riddled with the disadvantage of maximum WCS cost besides more forest land requirement due to partial surface penstock and the least cycle efficiency (78.96%).

Alternate-2: It comprises WCS-1 alignment (3696.4m), with surge shaft option, and underground powerhouse. The L/H ratio would be 6.53. The tentative cost would be Rs 12224 crores, the second highest of all alternatives. This alternate has the advantage of the least L/H ratio, second highest cycle efficiency (79.21%) besides second maximum WCS cost. It has the disadvantage of more forest land requirement due to partial surface penstock, but lesser than Alternate-1.

Alternate-3: It comprises WCS-2 alignment (3812.7m), without surge shaft option, underground pressure shaft and underground powerhouse. The L/H ratio would be 6.72. The tentative cost would be Rs 12155 crores, the second lowest of all alternatives. This alternate has the advantage of the least L/H ratio, second highest cycle efficiency (79.21%) besides second maximum WCS cost. It has the disadvantage of the second highest WCS cost and second highest L/H ratio but has the advantage of lesser forest land requirement due to underground pressure shaft.

Alternate-4: It comprises WCS-2 alignment (3727.8m), with U/s surge shaft and D/s surge chamber option, underground pressure shaft and underground powerhouse. The L/H ratio would be 6.64. The tentative cost would be Rs 11826 crores, the least of all alternatives. This alternate has the advantage of the least WCS cost, highest cycle efficiency (79.37%) besides least forest land requirement due to underground pressure shaft.

It is brought out here that the forest land requirement shall be the least in Alternate-4 and it is best from environmental point of view. Apart from this it is the best from techno economics consideration, too. It is preferred and selected for further studies and development.

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

(a) Municipal Solid Waste (MSW) likely to be generated during construction and operation shall be 38.7 Ton/annum and 25.5 ton/annum respectively which shall be managed as per Solid Wastes Management Rules, 2016.

(b) Hazardous waste: It inter alia includes burnt mobile oil and greases (10 ton/annum) from vehicles and construction machinery and equipment which shall be handled and disposed of through authorized dealer as per Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016.

(c) The total quantity of muck / debris, to be generated due to the project, shall be 41.56 lakh cum, of which 33.84 lakh cum shall be consumed on project work and balance 7.42 lakh cum ()10.25cum with 38% swell factor) shall be dumped at designated muck sites. Muck piles shall be well supported at base by retaining walls and multi-storied plantation will be developed using grasses, shrubs, bushes, and trees in a site-specific manner.

xvii. Status of Litigation Pending against the proposal, if any. None

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

- **Project details:**

Name of the Proposal	Savitri PSP (2400 MW), Districts: Satara & Raigad Maharashtra Proposal No.: IA/MH/RIV/551075/2025 File No. J-12011/43/2025-IA. I(R)
Location (Including coordinates)	Upper Dam: Village Jaoli, Tehsil- Mahabaleshwar, District Satara, Maharashtra Lower Dam: Village Lahulase, Tehsil Poladpur, District Raigad, Maharashtra Upper Reservoir: 17°56'47.04" to 17°37'13.73'' Lower Reservoir: 17°57'56.49" to 17°35'11.1''
Inter- state issue involved	No
Seismic zone	Zone -IV

- **Category details:**

Category of the project	A
Provisions	Project activity covered at S.N.1(c)(i) Standalone Pumped Storage Project
Capacity / Cultural command area (CCA)	2400 MW pumped storage component with 6.28 hours storage capacity for peak power generation and 7.43 hours pumping operation for backfilling of upper reservoir of PSP.
Attracts the General Conditions (Yes/No)	Yes. Part of water conductor system, powerhouse and access roads, fall within the Raigad Conserve Reserve.
Additional information (if any)	The upper dam/ reservoir, submergence area, upper intake and part of water conductor system are in Mahabalehwar-Panchgani ESZ.

- **Electricity generation capacity:**

Powerhouse Installed Capacity	2400 MW
Generation of Electricity Annually	5226.22 MU
No. of Units	8X300MW
Additional information (if any)	The project with installed capacity of 2400 MW(8x300MW) by utilizing a design discharge of 485.92 cumec rated net head of 561.670m for 6.28-hour daily peaking cycle will annually generate 5226.22 MU at 95% plant availability. The PSP will utilize 2560 MW to pump 410.64 cumec from lower reservoir to the upper reservoir in 7.43 hours. The annual pumping energy required shall be 6593.75 MU. The cycle efficiency of the PSP works out to be about 79.26%.

- **ToR/EC Details:**

Cost of project	Rs 11826 Crores.
Total area of Project	310.76 ha
Height of Dam from River Bed (EL)	Upper Dam-59.00 m; Lower Dam-63.50 m
Length of Tunnel/Channel	Length: 13483 m comprising of following components: (i)Main HRT: 1239m; Unit HRT: 640m (ii)Main Pressure shaft:5564m; Unit: 3136m (iii)Main TRT: 1376m; Intermediate &Branch TRT: 1528m
Details of Submergence area	Total Submergence area- 144ha Upper Reservoir-79.76 ha (Forest land: 7.15ha, Non-Forest land :72.61ha) Lower Reservoir-64.24 ha (Forest land: 0.00ha, Non-Forest land :64.24ha)
Types of Waste and quantity of generation during construction/ Operation	

Waste Type	Construction (TPA)	Operation (TPA)
MSW	38.7	25.5
Plastic	5.0	0.50
E-waste	0.5	0.1
Burnt oil	10.0	1.00

	<table><tr><td>Batteries</td><td>2.0</td><td>0.50</td></tr><tr><td>Bio-medical</td><td>0.5</td><td>0.0</td></tr></table>
E-Flows for the Project	
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then a) E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Basin. b) If not the E-Flows maintain criteria for sustaining river ecosystem.	No Not applicable Not applicable in case of PSP
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	

- **Muck Management Details:**

No. of proposed disposal area/ (type of land- Forest/Pvt. land)	Muck Disposal Sites-4 Nos Area and Type of land -15 ha; non-forest
Muck Management Plan	The muck shall be laid with vertical angle not exceeding 28^0 in such a manner that rock mass is properly stacked behind the gabion wall/revetment with minimum of voids. The muck pile shall be later covered with geo-Geo-coir textile and rehabilitated by afforestation of herbs and shrubs. Detailed Muck Management Plan shall be formulated during EIA study.
Monitoring mechanism for Muck Disposal	The project authorities shall erect a barrier to regulate the traffic flow to and fro the muck piles site. Proper e-challan shall be issued.

- **Land Area Breakup:**

Private land	85.00 ha

Government land	170.12ha
Forest Land	55.64 ha
Total Land	310.76
Submergence area/Reservoir area	144.00 ha
Additional information (if any)	Dam structures: 37.87ha Water conductor System:38.39 ha Project & labour colony:20.00 ha Roads;55.00ha. Muck disposal: 15.00 ha Land for transmission line for power evacuation (RoW) is not included.

- **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	(i)Raigad Conservation Reserve (ii)Mahabalehwar-Panchgani ESZ. (Notification, Dated 17th January 2001)
National Park	No	None within 10km
Wildlife Sanctuary	No	None within 10km

- **Court case details:**

Court Case	None
Additional information (if any)	None

- **Affidavit/Undertaking details:**

Affidavit/Undertaking	Annexure-IV of Agenda of meeting
Additional information (if any)	None

- **Previous EC compliance and necessary approvals:**

Particulars	**Letter no. and date**
Certified EC compliance report (if applicable)	Not applicable

Status of Stage- I FC	Not, yet
Additional detail (If any)	Application for diversion of forest land shall be moved
Is FRA (2006) done for FC-I	Not, yet

- **Miscellaneous**

Particulars	**Details**
Details of consultant	EQMS GLOBAL PRIVATE LIMITED 305, 3rd Floor, Plot No. 16, Rishabh Corporate Tower, Community Centre, Karkardooma, Delhi – 110092 Phone: 011-43062757; NABET/EIA/25-28/RA0465, valid up to 23.11.2028)
Project Benefits	The benefits inter alia shall include the benefits like (i) Average annual generation of 5226.22 MU of energy with 95% plant availability; (ii) Increased vegetal cover due to implementing of CAT Plan and Green Belt Development Plans (iii) Employment Potential during construction (1000 labour); (iv) Overall development of area by implementing CSR initiatives and Watershed Development Plans.
Status of other statutory clearances	The mandatory statutory clearance like approval of power potential studies from CEA, site specific earthquake design parameters to be approved by NCSDP, Geological report approval from GSI, DPR approval from CWC and CEA; Forest clearance for diversion of forest land, are yet to be sought.
R&R details	There shall be displacement of families. R&R details shall be finalised later.
Additional detail (If any)	None

44.2.3 The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA/EMP and Public hearing for Savitri Open Loop Pumped Storage Project (2400 MW) in an area of 310.76 Ha located at Village Javali, Dare, Haroshi, Karanje etc, Sub-district Poladpur and Mahabaleshwar, District Satara and Raigarh, Maharashtra by M/s NHPC limited.

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

- The EAC observed that the proposed project is an open loop project of installed capacity 2400 MW/15072MWH pumped storage component with 6.28 hours storage capacity for peak power generation. The upper dam is located across Koyna River, which is a tributary of Krishna River and lower dam is located across Savitri River near Lahulase. For reservoir operation the project contemplates non-consumptive re-utilization of 11.23 MCM of water for recirculation among two proposed reservoirs. The one-time filling requirement of 19.58 MCM and periodical recoupment for losses(1.47MCM) will be met from yield generated within lower dam catchment area (18.94 sq.km) and used cyclically for energy storage and discharge.

- The EAC noted that total land required for the construction of various components and related works for project is 310.76 ha out of which Forest area is 55.64 ha, Government land is 170.12 ha and Private land is 85.00 ha. Diversion of forest land for non-forest purpose will be involved for construction of project components. However, it was observed that the application for Stage-I Forest Clearance (FC) has not yet been submitted, which necessitates further action from the Project Proponent.

- The committee noted that part of water conductor system, powerhouse and access roads, fall within the Raigad Conservation Reserve, Additionally, upper dam/reservoir, submergence area, upper intake and part of water conductor system fall within Mahabalehwar-Panchgani ESZ. The EAC further noted that all the project components are located within the proposed Western Ghats ESA, Maharashtra as per MOEF&CC draft notification S.O.30609(E) dated 31.07.2024.

- It has been observed that Memorandum of Understanding has been signed between NHPC and Deptt. of Energy, Govt. of Maharashtra on 06.06.2023 for establishment of 4 nos. PSPs including Savitri PSP. Subsequently, another MoU was signed between NHPC & Govt. of Maharashtra on 03.09.2024 for development of the PSPs with an objective to prepare the DPR & submit to CEA/GoMWRD for its approval.

- The EAC noted that, as per the notification of the Mahabaleshwar–Panchgani Eco-Sensitive Zone issued vide S.O. 52(E) dated 17.01.2001, only non-polluting non-hazardous service industries, units making footwear from processed and ready-made leather, floriculture, horticulture based or agro based industries producing products from indigenous goods from the Eco Sensitive Zone shall be permitted in this zone, providing the project/ activity does not result in polluting effluent, emission or impacts.

- The Committee further observed that, as per the classification of industries provided by the Central Pollution Control Board (CPCB) on date 12.02.2025, the hydel power plants

(Capacity > 50 MW) fall under the Red category. Accordingly, the EAC noted that the Savitri PSP being a sub category of Hydel Power Plant projects, falls under red category and therefore was not a fit case to be taken up for grant of Terms of Reference (ToR) unless the Project Proponent (PP) obtained requisite No Objection Certificates / clearances from the competent Authoritiy(ies).

- In view of the above mentioned provisions and regulatory restrictions, the EAC decided to defer the proposal and suggested the Project Proponent to obtain the requisite No Objection Certificate/Clearance from the competent authority in accordance with the provisions of the Mahabaleshwar–Panchgani Eco-Sensitive Zone Notification, S.O. 52(E) dated 17.01.2001, for further consideration of the proposal.

44.2.4 The EAC based on the information submitted and as presented during the meeting, and in view of the above provisions and regulatory restrictions, decided to **defer the proposal** for grant of Terms of Reference for conducting EIA study for proposed construction of Savitri Open Loop Pumped Storage Project (2400 MW) in an area of 310.76 Ha located at Village Javali, Dare, Haroshi, Karanje etc, Sub-district Poladpur and Mahabaleshwar, District Satara and Raigarh, Maharashtra by M/s NHPC limited and directed the Project Proponent to obtain the requisite No Objection Certificate/Clearance from the competent authority in accordance with the provisions of the Mahabaleshwar–Panchgani Eco-Sensitive Zone Notification, S.O. 52(E) dated 17.01.2001, for further consideration of the proposal.

Agenda Item No. 44.3

Assam/PSP-02 Closed-Loop Pumped Storage Project (1000 MW) in an area of 259.6 Ha located at Village Baithalangso and Sardangang, Sub District Donka, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited – Terms of References (TOR) – reg.

[IA/AS/RIV/558604/2025; F. No. J-12011/42/2025-IA.I (R)

44.3.1: The Member Secretary informed that, the representative of the PP vide email/letter dated 05.12.2025 expressed its inability to attend the EAC meeting due to unavoidable circumstances, and requested for deferment. Accordingly, the EAC agreed to consider the proposal in a later meeting.

The proposal was ***deferred*** on the above lines.

Agenda Item No. 44.4

Gosaintari Closed-Loop pumped storage project (920 MW) in an area of 261.13 Ha located at Village Dhamni, Jhirkhi, Planki, Sarki, etc, Sub-District Rajauli and Gobindpur, District Nawada, Bihar by M/s Sun Hydro Energy Private Limited – Terms of References (TOR) – reg.

[IA/BR/RIV/560110/2025; F. No. J-12011/41/2025-IA.I (R)]

44.4.1: The Member Secretary informed that, the representative of the PP vide email/letter dated 08.12.2025, expressed its inability to attend the EAC meeting due to unavoidable circumstances, and requested for deferment. Accordingly, the EAC agreed to consider the proposal in a later meeting.

The proposal was ***deferred*** on the above lines.

Agenda Item No. 44.5

Expansion of Tembhu Lift Irrigation Project in an area of 2284.601 ha at Village Tembhu, Ranad, Govare and etc, Sub District Khatav, Atpadi, Karad and etc, District Satara, Sangli and Solapur, Maharashtra by M/s Minor Irrigation Division, Sangli Water Resources Department, Maharashtra Krishna Valley Development Corporation– Environmental Clearance (EC) - reg.

[Proposal No. IA/MH/RIV/482689/2024; F. No. J-12011/48/2023-IA.I (R)]

44.5.1: The proposal is for grant of Environmental Clearance (EC) to the project for Expansion of Tembhu Lift Irrigation Project in an area of 2284.601 ha at Village Tembhu, Ranad, Govare and etc, Sub District Khatav, Atpadi, Karad and etc, District Satara, Sangli and Solapur, Maharashtra by M/s Minor Irrigation Division, Sangli Water Resources Department, Maharashtra Krishna Valley Development Corporation.

44.5.2: The Project Proponent and the accredited Consultant M/s MITCON Consultancy & Engineering Services Ltd., Pune, Maharashtra, made a detailed presentation on the salient features of the project and informed that:

i. Krishna Koyana Lift Irrigation Scheme (KKLI), which is under construction, provides irrigation benefits to drought prone Kadegaon, Khanapur, Tasgaon, Miraj &Kavathe Mahankal and Jat Taluka of Sangli districtand Songola and Mangalvedha taluka of Solapur of district. Takari Lift Irrigation Scheme provides irrigation in Khanapur, Kadegaon and Tasgaon talukas up to RL 2100 ft. while Mhaisal Lift Irrigation Scheme provides Irrigation in Miraj, and Kavathemahankal, Jath, Songala and Mangalvedha taluka up to RL. 2200 ft. There was persistent demand for irrigation benefits to areas above RL 2100 ft from Kadegaon, Khanapur, Tasgaon, Atpadi, Sangola, Kavathe

Mahankal talukas by way of Lift Irrigation Scheme. As it was not possible to make changes in scope of KKLIS, which was in advanced stage of construction, a separate lift irrigation scheme named Tembhu Lift Irrigation Scheme was proposed for drought prone area of Kadegaon, Khanapur, Tasgaon, Atpadi, Sangola, Kavathemahankal taluka above RL 2100 Ft i.e. which could not be covered under KKLI scheme. Accordingly, a preliminary report based on topo sheet study was submitted to Govt. by C.E. (I.D.) Pune vide Letter No. PB/ Desk (2)/ DE (10) Tembhu/ 971 Dt. 22/02/1994 Govt. approved this proposal, vide letter No. 5-95/ 1093/ 668/ (140/93) WRI, DT. 15/04/1994 and directed to prepare D.P.R. of this scheme.

ii. The barrage across Krishna River @ Tembhu is constructed. The F.S.L. of barrage is within the river bank. The 11 gates of size 15 x 9 m. are provided to let out the water from Krishna River to irrigate 80472 ha (ICA) of land from drought prone regions of Satara, Sangli and Solapur districts of Maharashtra state. (Total 5 stages).

iii. The Proposed Expansion of Tembhu Lift Irrigation Project Taluka Karad, Dist. Satara, Sangli and Solapur, Maharashtra by M/s. Executive Engineer, Minor Irrigation Division, Sangli project envisage construction to irrigate ICA 41003 ha

- ❖ Existing Khanapur -Tasgaon Canal (Stage 6 A-6B LIS)
- ❖ Kavathe Mahankal Canal (Bevnur Scheme)
- ❖ Palashi LIS (Palshi LIS)
- ❖ 3 A to Ghanand Canal (Man - Khatav LIS)
- ❖ Kamath Lake (Kamath Scheme)
- ❖ Length of new pipeline proposed (PDN) : 200 km
- ❖ Length of proposed Distributaries :1000 km
- ❖ Total electricity requirement: 22 MW (Source: MSEDCL)
- ❖ Water Utilization: Existing: 22.0 TMC + Proposed 8.00 TMC = Total 30.00 TMC

iv. Accordingly, detailed project Report of Tembhu Lift Irrigation Scheme was prepared which envisaged construction of barrage across river Krishna near village Tembhu and Lifting the stored water in 5 stages to irrigate 79600Ha. Of area from 7, taluka's of Satara, Sangli and Solapur district. This DPR was administratively approved by Govt. letter no. (Marathi) Tembhu 1095/ 1427/ (361/ 95) WRI dt. 19.02.1996. (for Rs. 1456.19 crores)

v. The project proposal was considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 51st meeting held during 12 Sept 2023 and recommended for grant of Terms of References (ToRs) for the Project. The ToR has been issued by Ministry vide letter File No: J-12011/48/2023-IA. I (R) Dated 02/11/2023.

vi. Earlier, Ministry had issued EC vide letter no. 12011/43/2003-A. I Dated August 17, 2007 to the existing project in favour of M/s. Minor Irrigation Circle, Maharashtra Krishna Valley Development Corporation, Warnali, Sangli.

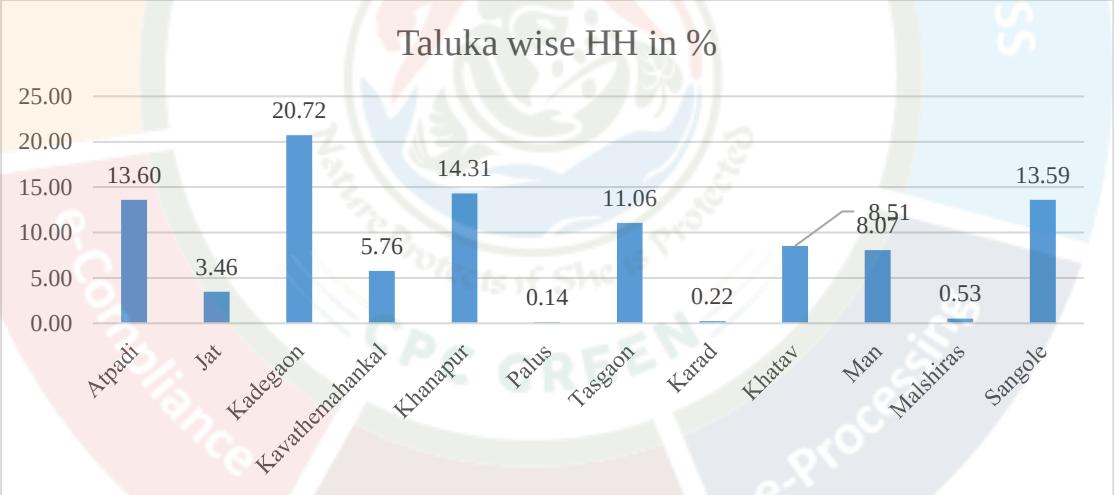
vii. The geographical co-ordinate of the project are:

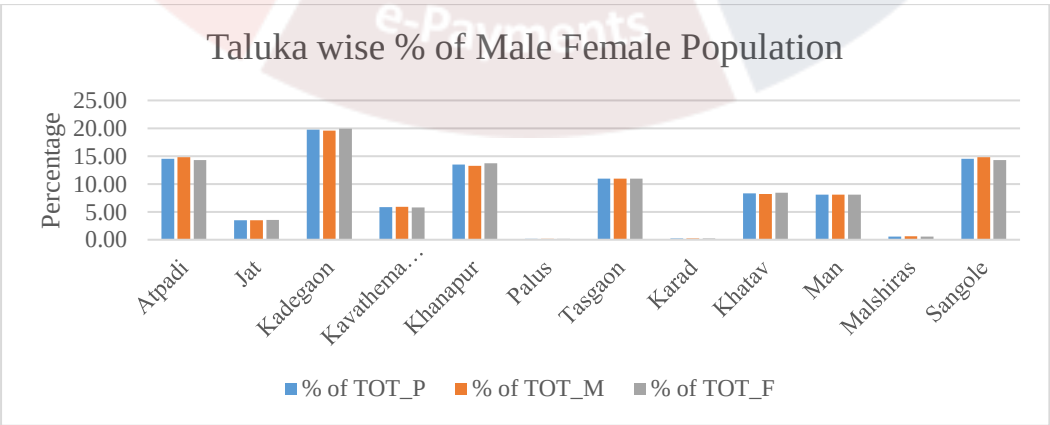
Location (Including coordinates)	Longitude: 74º 14' (East) Latitude : 17º17' (North)

viii. **Land requirement:**

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	2265.13	2.78	2267.92
Forest Land	7.05	7.93	14.98
Total	2272.18	10.71	2282.90

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





x. **Water requirement:**

District	Taluka	No. of villages	ICA (Ha)	Water Requirement TMC
Sangli	1) Khanapur	11	6471	1.5
	2) Tasgaon	17	6026	1.00
	3) Kawathemahankal	9	2450	0.50
	4) Atpadi	12	5294	1.00
	5) Jat	4	2636	0.50
	Total of Sangli	**53**	**22877**	**4.50**
Satara	6) Khatav	21	7440	1.50
	7) Maan	27	5686	1.00
	Total of Satara District	**48**	**13126**	**2.50**
Solapur	8) Sangola	8	5000	1.00
	Total Of Solapur District	**8**	**5000**	**1.00**
	Gross Total	109	41003	8.00

xi. **Project Cost:** The estimated project cost is Rs 7370.03 Cr. including existing investment of Rs 4088.14 crores. Total capital cost earmarked towards environmental pollution control measures is Rs. 25430 Lakhs and the Recurring cost (operation and maintenance) will be about Rs 160.00 L per annum.

Cost of project (Rupees in Crore)	Existing Project : Rs. 4088.14 Proposed Expansion: Rs.3281.89 Total Cost : Rs. 7370.03

1	EMP Capital Cost: (eg.: Air Environment, Water Environment)	25430 Lakhs
2	Recurring Cost per annum (In Lakhs)	160.00 Lakhs

xii. **Project Benefit**: Total Employment will be 15 persons as direct & 360 persons indirect after expansion. Industry proposes to allocate Rs 820 Lakh @ of 0.25 % towards CER (as per Ministry's OM dated 1st May 2018).

xiii. **Environmental Sensitive area:** There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. However, Mayani Bird Conservation Reserve & Other sacred groves are present within 10 km radius.

Sr. No.	Name of the Grove	Deity	Tahsil	Distance	Direction
1	Arewadi	Biroba	Kavathe Mahankal	3 km	SE
2	Raywadi	Lord Shiva	Kavathe Mahankal	3 km	W
3	Shukacharya	Sukhdev	Khanpur-Atpadi	2 km	NE
4	Mayani	Bird Conservation Reserve*	Khatav	1.28 km	NE

**5.2 km from Khatav Main Distributary*

xiv. **MoU / any other clearance/ permission signed with State government:**

Sr. No.	Approvals	Amount	DSR	Remarks
1.	Original Administrative Approval	1416.59	1995-96	GOM vide letter No. Tembhu-1095/ 1427 /(361/95)/WRI dated 19/02/1996
2.	1st Revised Administrative Approval	2106.09	2000-01	MKVDC letter No MKVDDC/MP-6/(383/2002)/718 dated 22/01/2004
3.	CWC Approval	3450.35	2009-10	In 109th Technical advisory committee of Central Water Commission meeting on 14/03/2011
4.	2nd Revised Administrative Approval cost	4088.94	2016-17	(work portion Rs.3729.82 Cr.+ ETP Rs.359.12 Cr)
5.	3nd Revised Administrative Approval cost (Proposed)	7370.03	2022-23	(work portion Rs.6708.48. Cr.+ ETP Rs.661.55 Cr)
6.	Up to date Expenditure September 2022	3388.33	2022-23	(work portion Rs.3155.52. Cr.+ ETP Rs.232.81.Cr)
7.	Balance Cost of Project	3981.69	2022-23	(work portion Rs.3552.96cr +ETP428.73cr)
8.	Stage 1 Clearance	-	-	Stage 1 Clearance received vide online Proposal No. FP/MH/Pipeline/ 466395/ 2024 dated 06.01.2025

xv. **Resettlement and rehabilitation:**

For the Expansion of Tembhu Lift Irrigation Project, private land of around 2.7825 Ha is proposed for acquisition. The land acquisition will be done and compensation shall be paid to land owners as per The Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013. As there are no households in the land to be acquired, there is no issue of rehabilitation & resettlement of the land owners.

Details of Land Acquisition:

Sr. No	Name of Farmers	Village	Gut No	Area in Ha
1.	Shri. Dattu Chandru More and Shri. Laxman Chandru More	Vejegaon Tal:- Khanapur, Dist. Sangli	145	0.28
2.	Shri. Rajaram Govind Devkar Shri. Hanmant Govind Devkar	Vejegaon Tal:- Khanapur, Dist. Sangli	146	0.19
3.	Shri. Daval Malik Archak	Bhikavadi Tal:- Khanapur, Dist. Sangli	992	0.0625
4.	Shri. Uttam Atmaram Yadav and other	Renavi Tal:- Khanapur, Dist. Sangli	498	0.40
5.	Shri. Anil Pandhrinath Gaikead and other 10	Kasabe Vita east, Tal:- Khanapur, Dist. Sangli	194	0.40
6.	Smt. Sharada Ramchandra Nichal and other	Posewadi, Tal:- Khanapur, Dist. Sangli	836	0.05
7.	Shri. Arjun Tukaramkole and other	Dhonewadi, Tal:- Kanapur, Dist. Sangli	450	0.05
8.	Shri. Dipak Sadashiv Kanase and other 2	Vijaynagar, Tal- Khanapur, Dist. Sangli	309	0.05
9.	Ujawala Hindurao Sawant other 14	Vita putva	148	0.60
10.	Maruthi Deo and others	Palashi Tal:- Khanapur Dist. Sangli	610/3	0.20
11.	Jagubai Bhimrao Chandanshive, Mangal Bhimrao Chandanshive and other	Palashi Tal:-Khanapur, Dist. Sangli	602	0.40
12.	Umesh Sukhdeo Jadhav, Sulochna Sukhdeo Jadhav and other	Palashi Tal:- Khanapur, Dist. Sangli	232	0.10
Total				2.7825 Ha

xvi. **Scheduled –I species:**

Sr. No	Class	Scientific Name	Common Name	IWPA Status	IUCN Status
1.	Mammal	*Canis lupus*	Grey Wolf	Schedule - I	LC
2.	Mammal	*Antilope cervicapra*	Blackbuck	Schedule – I	LC
3.	Mammal	*Hyena hyaena*	Striped Hyeana	Schedule – I	Not Enlisted
4.	Mammal	*Vulpes bengalensis*	Bengal Fox	Schedule – I	LC
5.	Mammal	*Bos gaurus*	Gaur	Schedule – I	VU
6.	Mammal	*Prionailurus rubiginosus*	Rusty Spotted Cat	Schedule – I	NT
7.	Mammal	*Felis chaus*	Jungle Cat	Schedule – I	LC
8	Bird	*Pavo cristatus*	Indian Peafowl	Schedule – I	LC
9.	Bird	*Accipiter badius*	Shikra	Schedule – I	LC
10.	Bird	*Haliastur indus*	Brahminy Kite	Schedule – I	LC
11.	Reptile	Crocodylus palustris	Mugger	Schedule – I	VU
12.	Reptile	Fowlea piscator	Chequered keelback	Schedule – I	LC
13.	Reptile	Ptyas mucosa	Dhaman	Schedule - I	LC
14	Reptiles	*Varanus bengaiensis*	Bengal Monitor	Schedule - I	EN
15	Bird	*Platalea leucorodia*	Eurasian Spoonbill	Schedule – I	LC
16	Bird	*Sterna aurantia*	River Tern	Schedule – I	VU
17	Bird	*Circaetus gallicus*	Short-toed Snake-Eagle	Schedule – I	LC
18	Bird	*Tringa nebularia*	Common Greenshank	Schedule – I	LC
19	Bird	*Aythya ferina*	Common Pochard	Schedule - I	LC
20	Bird	*Pericrocotus cinnamomeus*	Small Minivet	Schedule - I	LC
21	Bird	*Clanga clanga*	Greater Spotted Eagle	Schedule – I	VU

** VU = Vulnerable; **NT = Near Threatened, EN = Endangered*

xvii. **Baseline Environmental Scenario:**

Period	From 01/03/2023 to 31/12/2023
AAQ parameters	• PM10 = 23.5 to 76.3 µg/m3 • PM2.5 = 12.4 to 31.9 µg/m3

<table>
<tr><td>at 14 locations (min. & Max.)</td><td>• SO2 = 6.2 to 16.5 µg/m3
• NOx = 10.4 to 23.2 µg/m3.
• CO = BDL</td></tr>
<tr><td>Surface water samples (10 samples)</td><td>
<table>
<tr><th>Parameter</th><th>Season 1</th><th>Season 2</th><th>Season 3</th></tr>
<tr><td>pH</td><td>7.01 to 7.43</td><td>7.02 to 7.49</td><td>7.1 to 7.5</td></tr>
<tr><td>TDS</td><td>385 to 1459 mg/lit.</td><td>357 to 1662 g/lit.</td><td>492 to 1415 mg/lit.</td></tr>
<tr><td>Total Hardness as CaCO3</td><td>154.3 to 517 mg/lit.</td><td>169.54 to 490.12 mg/lit.</td><td>171 to 514 mg/lit.</td></tr>
<tr><td>Calcium as Ca</td><td>46.13 to 113.37 mg/lit</td><td>50.13 to 130.45 mg/lit</td><td>48 to 110 mg/lit</td></tr>
<tr><td>Magnesium as Mg</td><td>18.13 to 83.28 mg/lit</td><td>20.14 to 83.02 mg/lit</td><td>23 to 80 mg/lit</td></tr>
<tr><td>Chloride as Cl</td><td>23.25 to 130.15 mg/lit</td><td>41.14 to 138.16 mg/lit .</td><td>19 to 104 mg/lit</td></tr>
<tr><td>Sulphate as SO4</td><td>32.16 to 145.25 mg/lit</td><td>37.12 to 148.13 mg/lit</td><td>33 to 142 mg/lit.</td></tr>
<tr><td>BOD</td><td>4 to 9 mg/lit</td><td>5 to 13 mg/lit</td><td>4 to 10 mg/lit</td></tr>
<tr><td>COD</td><td>15 to 33 mg/lit</td><td>19 to 47 mg/lit</td><td>18 to 32 mg/lit</td></tr>
<tr><td>DO</td><td>3.7 to 4.7 mg/lit</td><td>2.9 to 4.4 mg/lit</td><td>3.5 to 4.6 mg/lit</td></tr>
<tr><td>Total Coliforms</td><td>present</td><td>present</td><td>present</td></tr>
</table>
</td></tr>
<tr><td>Ground Water samples at 36 location s</td><td>
<table>
<tr><th>Parameters</th><th>Season 1</th><th>Season 2</th><th>Season 3</th></tr>
<tr><td>pH</td><td>7.02 to 7.57</td><td>7.08 to 7.62</td><td>7.03 to 7.78</td></tr>
<tr><td>Total Dissolved Solids</td><td>314 to 2012 mg/lit.</td><td>320 to 1990 mg/lit.</td><td>289 to 2183 mg/lit.</td></tr>
<tr><td>Total Hardness as CaCO3</td><td>140.56 to 758.13 mg/lit.</td><td>130.14 to 771.19 mg/lit.</td><td>125.16 to 767.52 mg/lit.</td></tr>
<tr><td>Calcium as Ca</td><td>41.08 to 124.1 mg/lit &</td><td>37.1 to 130.18 mg/lit &</td><td>18.52 to 145.12 mg/lit</td></tr>
<tr><td>Magnesium as Mg</td><td>13.26 to 92.14 mg/lit</td><td>14.25 to 95.24 mg/lit</td><td>11.13 to 95.27 mg/lit</td></tr>
<tr><td>Chloride as Cl &</td><td>24.25 to 110.92 mg/lit &</td><td>21.16 to 115.24 mg/lit</td><td>25.42 to 128.12 mg/lit</td></tr>
<tr><td>Sulphate as SO4</td><td>14.92 to 120.15 mg/lit.</td><td>16.02 to 120.14 mg/lit.</td><td>15.9 to 131.15 mg/lit.</td></tr>
</table>
</td></tr>
<tr><td>Noise levels Leq (Day & Night)</td><td>The Leq values for day time was observed to be</td></tr>
</table>

<table>
<tr><td>at 25 locations</td><td>
<table>
<tr><td>Zone /Area</td><td>Day Time</td><td>Night Time</td></tr>
<tr><td>Residential Zone</td><td>47.3-to 54.8dB (A)</td><td>39.1to 43.8 dB (A).</td></tr>
<tr><td>Silent Zone</td><td>41.6-to 48.9dB (A)</td><td>33.2 to 39.8 dB (A).</td></tr>
<tr><td>Commercial Zone</td><td>66.5 to 69.4dB (A</td><td>60.5 to 64. 2 dB (A).</td></tr>
</table>
</td></tr>
<tr><td>Soil Quality at 30 Locations</td><td>
<table>
<tr><th>Parameters</th><th>Season 1</th><th>Season 2</th><th>Season 3</th></tr>
<tr><td>pH</td><td>7.35 to 8.05.</td><td>7.21 to 7.92.</td><td>7.02 to 8.24.</td></tr>
<tr><td>Conductivity</td><td>411.8 to 900.8 µs/cm.</td><td>501.6 to 1014.6 µs/cm.</td><td>424.5 to 872.5 µs/cm.</td></tr>
<tr><td>N</td><td>132.12 to 168.9 kg/ha</td><td>118.47 to 160.3 kg/ha</td><td>138.15 to 185.15 kg/ha,</td></tr>
<tr><td>P</td><td>9.15 to 25.2 kg/ha</td><td>11.02 to 19.1 kg/ha</td><td>13.45 to 24.1 kg/ha</td></tr>
<tr><td>K</td><td>152.13 to 204.3 kg/ha</td><td>124.05 to 206.1 kg/ha</td><td>148.1 to 211.67 kg/ha</td></tr>
</table>
</td></tr>
<tr><td>Flora & Fauna</td><td>Total 172 floral species were recorded in and around the project area (i.e. 10 km radius study). Among them 41 Herbs, 97 Trees, 27 shrubs & climbers were 7.
Fauna Diversity : Mammals - 15, Bird – 135, Fishes-109, Frog -3, Reptile -4,

Total 22 Schedule 1 species observed in the study area</td></tr>
</table>

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

Domestic Waste:

Name of Waste	Source	Qty (TPA)
Dry Waste	Labour Colony	39.42
Wet Waste	Labour Colony	26.28

Details of Excavation Waste (Muck)

Name of Waste	Qty (cu.m)
Quantity of cutting material (muck)	2906835
Proposed utilization /dispose of cutting material	2558014.624
Quantity of filling material	348820.176
Source of filling Material	Trench cutting

The detail of the muck likely to be disposal at low lying area adjacent to project site

Sr. No	Stage of LIS	Total Muck quantity in cum
1	Man Khatav	104646
2	Kamat	69764
3	Bevnoor	69764
4	6 A and 6 B	34882
5	Palshi	34882
6	Budhyal	34882

xix. **Public Hearing Details**: Public Hearing for the proposed project has been conducted by the State Pollution Control Board at three districts separately.

Advertisement for PH with date	**Marathi Newspaper:** **Sangli:** Sakal Dated 19.01.2024 **Solapur:** Sanchar 31.01.2024**,** **Satara:** Pudhari Dated 01.02.2024**,** **English Newspaper**: **Sangli:** The Times of India Dated 19.01.2024, **Solapur:** Divya Marathi Dated 31.01.2024, **Satara:** The Indian Express Dated 01.02.2024
Date of Public Hearing	1. Sangli: 21/02/2024 2. Solapur: 01/03/2024 3. Satara: 05/03/2024
Venue	1. Vita Panchayat Samiti, Vita, Khanapur, Sangli 2. Bachat Bhavan Auditorium, Panchayat samite, Sangola, Solapur 3. Tai Convention Hall, Shri Shivaji Maharaj Chowk, Satara
Chaired by	1. Dr. Raja Dayanidhi, Chairman & District Magistrate, Sangli 2. Mrs. Manisha Kumbhar, Chairman & Additional District Magistrate, Solapur 3. Shri. Nagesh Patil, Chairman &Upper District Magistrate (Residential Deputy Collector), Satara
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	Sangli: 157 Solapur: 102 Solapur: 140

xx. **Details of Certified compliance report submitted by RO, MoEF&CC.**

Dr. P. R. Sakhare, Scientist E, inspected the site to check implementation of environmental safeguards status on 29.07.2024.
Status of compliance of conditions stipulated in the environmental clearance granted by MOEF & CC New Delhi vide letter No. J-12011/43/2003-IAI, dated 17.08.2007 submitted by Regional Office, Nagpur, vide F. No. EC-2556/RON/2024-NGP/3436 dated 12th August, 2024.

xxi. **Status of Litigation Pending against the proposal, if any :** NIL

xxii. The salient features of the project are as under:

- **EAC Meeting Details:**

EAC meeting/s	Agenda ID: EC/AGENDA/EAC/216917/2/2025 Agenda Of 25th Meeting Of The Expert Appraisal Committee
Date of Meeting/s	10/12/2025
Date of earlier EAC meetings	• 51st Meeting of EAC, MoEFCC, New Delhi held on 12/09/2023 (Agenda Item No. 51.4) for Terms of Reference (ToR) • 22nd Meeting of The Expert Appraisal Committee held on 10.01.2025 for EC (PP Absent) • 25th Meeting Of The Expert Appraisal Committee held on 27/02/2025 **for EC**. • 30th Meeting Of The Expert Appraisal Committee held on 30/04/2025 for EC

- **Project details:**

Name of the Proposal	Proposed Expansion of Tembhu Lift Irrigation Project Dist. Satara, Sangli and Solapur, Maharashtra
Proposal No.	IA/MH/RIV/482689/2024
Location (Including Coordinates)	Longitude: 74° 14’ (East) Latitude : 17°17’ (North)
Company’s Name	Executive Engineer Minor Irrigation Division, Sangli Water Resource Department Maharashtra Krishna Valley Development

	Corporation (MKVDC), District Sangli 416 415
CIN no. of Company/user agency	-
Accredited Consultant and certificate no.	MITCON Consultancy & Engineering Services Ltd., Pune, Maharashtra Certificate No. NABET/EIA/24-27/RA 0343
Project location (Coordinates /River/ Reservoir)	Longitude: 74o 14' (East) Latitude : 17o17' (North)
Inter- state issue involved	No
Proposed on River/ Reservoir	-
Type of Hydro-electric project	Not Applicable
Seismic zone	Zone III (i. e. Moderate Risk Zone)

- **Category details:**

Category of the project	1 (c) Cat. 'A'							
Capacity / Cultural command area (CCA)	**Sr No**	**Taluka**	**District**	**Command Area**				
				GCA		**CCA**		**ICA**
				Existing	**Extended**	**Existing**	**Extended**	**Existing**	**Extended**
	A	Karad	Satara	1150	0	860	0	600	0
	B	Khanapur	Sangli	41135	19691	32921	11902	18975	6471
	C	Kadegaon	Sangli	20215	0	16179	0	9325	0
	D	Tasgaon	Sangli	20570	15280	15450	11083	7700	6026
	E	Atpadi	Sangli	61569	9015	43100	9737	16000	5294
	F	Sangola	Solapur	36500	20745	29200	5876	20000	5000
	G	Jat	Sangli	-	6506	-	4848	-	2636
	H	Kavathe Mahankal	Sangli	17475	12455	10300	7826	7872	2450
	I	Khatav	Satara	-	18362	-	13685	-	7440

	J	Man	Satara	-	14033	-	10458	-	5686
		Total		**198614**	**116087**	**148010**	**75415**	**80472**	**41003**
Attracts the General Conditions (Yes/No)	Yes, Bird Conservation Reserve located @ 1.2 km from proposed alignment								
Additional information (if any)									

- **ToR/EC Details:**

ToR Proposal No.	IA/MH/RIV/439901/2023, F. No. J-12011/48/2023-IA. I (R)			
EAC meeting date	12/09/2023			
ToR Letter No.	F.No. J-12011/48/2023-IA. I (R)			
ToR grant Date	02/11/2023			
Cost of project	Existing Project: Rs 4088.14 Proposed Expansion: Rs. 3281.89 Total Cost: Rs. 7370.0			
Total area of Project	**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	2265.138	2.7825	2267.92
	Forest Land	7.051	7.93	14.981
	Total	2272.189	10.7125	2282.902
Height of Dam from River Bed (EL)	NA			
Details of submergence area	Not applicable as there is no submergence.			
District to provide	❖ Length of new pipeline proposed (PDN) : 200 km ❖ Length of proposed Distributaries :1000 km			

<table>
<tr><td>irrigation facility (if applicable)</td><td></td></tr>
<tr><td>Details of tunnels on upper level & lower level and length of canal (if applicable)</td><td>Not Applicable</td></tr>
<tr><td>No. of affected Village.</td><td>9</td></tr>
<tr><td>No. of Affected Families</td><td>
<table>
<tr><th>SI</th><th>Name of Farmers</th><th>Village</th><th>Gut No</th><th>Area in Ha</th></tr>
<tr><td>1</td><td>Shri. DattuChandruMore and Shri. LaxmanChandruMore</td><td>Vejegaon Tal:- Khanapur, Dist. Sangli</td><td>145</td><td>0.28</td></tr>
<tr><td>2</td><td>Shri. Rajaram GovindDevkar Shri. Hanmant Govind Devkar</td><td>Vejegaon Tal:- Khanapur, Dist. Sangli</td><td>146</td><td>0.19</td></tr>
<tr><td>3</td><td>Shri. DavalMalik Archak</td><td>Bhikavadi Tal:- Khanapur, Dist. Sangli</td><td>992</td><td>0.0625</td></tr>
<tr><td>4</td><td>Shri. Uttam Atmaram Yadav and other</td><td>Renavi Tal:- Khanapur, Dist. Sangli</td><td>498</td><td>0.40</td></tr>
<tr><td>5</td><td>Shri. Anil Pandhrinath Gaikead and other 10</td><td>Kasabe Vita east, Tal:-Khanapur, Dist. Sangli</td><td>194</td><td>0.40</td></tr>
<tr><td>6</td><td>Smt. Sharada Ramchandra Nichaland other</td><td>Posewadi, Tal:- Khanapur, Dist. Sangli</td><td>836</td><td>0.05</td></tr>
<tr><td>7</td><td>Shri. Arjun Tukaram Kole and other</td><td>Dhonewadi, Tal:- Kanapur, Dist. Sangli</td><td>450</td><td>0.05</td></tr>
</table>
</td></tr>
</table>

	8	Shri. Dipak Sadashiv Kanaseand other 2	Vijaynagar, Tal-Khanapur, Dist. Sangli	309	0.05
	9	Ujawala Hindurao Sawant other 14	Vita putva	148	0.60
	10	Maruthi Deoand others	Palashi Tal:-Khanapur Dist. Sangli	610/3	0.20
	11	Jagubai Bhimrao Chandanshive, Mangal Bhimrao Chandanshive and other	Palashi Tal:-Khanapur, Dist. Sangli	602	0.40
	12	Umesh Sukhdeo Jadhav, Sulochna Sukhdeo Jadhav and other	Palashi Tal:-Khanapur, Dist. Sangli	232	0.10
	Total		2.7825 Ha		
Project Benefits	❖ With increased land parcels from draught prone area getting irrigated, farmers are shifting from food crops like sorghum, pearl millet and wheat to Cash crops like sugarcane, pulses, grapes, and Pomegranate. ❖ 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. ❖ The drought prone area earlier is transforming to horticulture hub. ❖ Improvement in operational performance and reliability in water supply by futuristic interventions enabled through SCADA interventions qualifying smart utilities and digital utilities. ❖ Generation of Employment - The draught prone area under the jurisdiction of Tembhu LIS has limited activities for income generation.				
R&R details	For the Expansion of Tembhu Lift Irrigation Project, private land of around 2.7825 Ha is proposed for acquisition. The land acquisition will be done and compensation shall be paid to land owners as per The Right to Fair Compensation & Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013.				
Command area					
	Taluka		**Command Area**		

Sr No		District	GCA		CCA		ICA	
			Existing	Extended	Existing	Extended	Existing	Extended
A	Karad	Satara	1150	0	860	0	600	0
B	Khanapur	Sangli	41135	19691	32921	11902	18975	6471
C	Kadegaon	Sangli	20215	0	16179	0	9325	0
D	Tasgaon	Sangli	20570	15280	15450	11083	7700	6026
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G	Jat	Sangli	-	6506	-	4848	-	2636
H	Kavathe Mahankal	Sangli	17475	12455	10300	7826	7872	2450
I	Khatav	Satara	-	18362	-	13685	-	7440
J	Man	Satara	-	14033	-	10458	-	5686
	Total		**198614**	**116087**	**148010**	**75415**	**80472**	**41003**

Types of Waste and quantity of generation during Construction /Operation

Name of Waste	Source	Qty (TPA)
Dry Waste	Labour Colony	39.42
Wet Waste	Labour Colony	26.28

Sr No	Type of material	Total generated quantity in excavation in cum	Total generated quantity in excavation in Mm^3
1	Soft Soil	225174.6	0.225175

	2	Hard murum & soft Rock	505580.2	0.50558
	3	Hard Rock	2176080	2.176080
		Total	2906835	2.90684
Material used for blasting and its composition as per DGMS standards.	Not Applicable			
E-Flows for the Project	NA			
Is Projects earlier studied in Cumulative Impact assessment & Carrying Capacity studies(CIA &CC) for River in which project located. If yes then E-flow with TOR/Recommendation by EAC as per CIA&CC study of River Basin. If not the E-Flows maintain criteria for	NA			

sustaining river ecosystem.	
Details on provision of fish pass	NA
Project benefit including employment details (no of employee)	**During construction phase** ***Permanent employment*** • No. of permanent employment: 360 • Period of employment (days): 730 ***Temporary employment*** Temporary / Contractual employment (No. of Man days): 33000 **During operational phase** • Permanent employment proposed: 10 • Temporary employment proposed: 5
Area of Compensatory Afforestation (CA) with tentative no of plantation.	Compensatory land 4.50 ha non forest land gut no. 36 at Village Pimpri B, Tal Atpadi, Dist Sangli selected for Compensatory afforestation. 130 number of trees will be affected and same will be transplanted in nearby area.
Previous EC details	Environmental clearance for 80472 ha ICA. Vide letter No.12011/43/2003-A.I Dated August 17,2007
EC Compliance Report by R.O, MOEF&CC	Dr. P. R. Sakhare, Scientist E, inspected the site to check implementation of environmental safeguards status on 29.07.2024. Status of compliance of conditions stipulated in the environmental clearance granted by MOEF &CC New Delhi vide letter No. J-12011/43/2003-IAI, dated 17.08.2007 submitted by Regional Office, Nagpur, vide F. No. EC-2556/RON/2024-NGP/3436 dated 12th August 2024

- **Muck Management Details:**

<table>
<tr><td>No. of proposed disposal area/ (type of Land /Pvt. land)</td><td colspan="3"><table>
<tr><th>Sr. No</th><th>Stage of LIS</th><th>Total Muck quantity in cum</th></tr>
<tr><td>1</td><td>Man Khatav</td><td>104646</td></tr>
<tr><td>2</td><td>Kamat</td><td>69764</td></tr>
<tr><td>3</td><td>Bevnoor</td><td>69764</td></tr>
<tr><td>4</td><td>6 A and 6 B</td><td>34882</td></tr>
<tr><td>5</td><td>Palshi</td><td>34882</td></tr>
<tr><td>6</td><td>Budhyal</td><td>34882</td></tr>
</table>Muck likely to be disposal at low lying area adjacent to project Site</td></tr>
<tr><td>Cross section of proposed muck area, Height of muck with slope.</td><td colspan="3">Utilization of 80 % of excavated material shall be backfilled in Approach roads, Conveyance roads, Pump House and 20% shall be filled in low laying areas and local bunds of agriculture land.</td></tr>
<tr><td>Distance of muck disposal area(location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.</td><td colspan="3">Average 0 km to 5 km</td></tr>
<tr><td>Total Muck Disposal Area</td><td colspan="3"><table>
<tr><th>Sr. No</th><th>Stage of LIS</th><th>Total Muck quantity in cum</th></tr>
<tr><td>1</td><td>Man Khatav</td><td>104646</td></tr>
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<tr><td>6</td><td>Budhyal</td><td>34882</td></tr>
</table></td></tr>
<tr><td>Estimate Muck to be generated</td><td colspan="3"><table>
<tr><th>Sr No</th><th>Type of material</th><th>Total generated quantity in excavation in cum</th><th>Total generated quantity in excavation in Mm^3</th></tr>
<tr><td>1</td><td>Soft Soil</td><td>225174.6</td><td>0.225175</td></tr>
</table></td></tr>
</table>

	2	Hard murum & soft Rock	505580.2	0.50558
	3	Hard Rock	2176080	2.176080
		Total	2906835	2.90684
Transportation	By Road			
Monitoring mechanism for Muck Disposal Transportation	Environmental Management Cell (EMC) shall monitor mechanism of muck disposal.			

- **Land Area Breakup:**

Private land	2265.138 + 2.7825 = 2267.92
Government land/Forest	7.051 + 7.93 = 14.981
Submergence area/Reservoir area	NA

Land required for project components

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	2265.138	2.7825	2267.92
Forest Land	7.051	7.93	14.981
Total	2272.189	10.7125	2282.902

- **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	

Nature of Land involved in (Ha)	**Area Existing in Ha**	**Additional Area Proposed in Ha**	**Total Area required after expansion in Ha**
Forest Land	7.051	7.93	14.981

<table>
<tr><td></td><td></td><td>Sacred groves & conservation reserves present in the study area
<table>
<tr><th>Sr. No.</th><th>Name of the Grove</th><th>Deity</th><th>Tahsil</th><th>Distance</th><th>Direction</th></tr>
<tr><td>1</td><td>Arewadi</td><td>Biroba</td><td>Kavathe Mahankal</td><td>3km</td><td>SE</td></tr>
<tr><td>2</td><td>Raywadi</td><td>Lord Shiva</td><td>Kavathe Mahankal</td><td>2km</td><td>W</td></tr>
<tr><td>3</td><td>Shukacharya</td><td>Sukhdev</td><td>Khanpur-Atpadi</td><td>2km</td><td>NE</td></tr>
<tr><td>4</td><td>Mayani</td><td>Bird Conservation Reserve*</td><td>Khatav</td><td>1.28 km</td><td>NE</td></tr>
</table>
*5.2 km from Khatav Main Distributary</td></tr>
<tr><td>National Park</td><td>No</td><td>-</td></tr>
<tr><td>Wildlife Sanctuary</td><td>No</td><td>Not Applicable as per Parivesh Web portal under applicability of green clearances</td></tr>
<tr><td>Archaeological sites monuments/historical temples etc.</td><td>No</td><td>No within 10 km Radius</td></tr>
<tr><td>Additional information (if any)</td><td>-</td><td>-</td></tr>
</table>

- **Court case details:** Nil
- **Status of other statutory clearances**

Particulars	**Letter no. and date**
Status of Stage- I FC	Stage 1 Clearance received vide online Proposal No. FP/MH/Pipeline/466395/2024 dated 06.01.2025
Approval of Central Water Commission	In 109th Technical advisory committee of Central Water

	Commission meeting on 14/03/2011
Approval of Central Electricity Authority	NA
Additional detail (If any)	NA
Is FRA (2006) done for FC-I	Yes

- **Details of the EMP**

Sr. No	Pollution Control & Other Environment Infrastructure	Capital Cost Rs. Lakhs	Recurring Cost (per annum) Rs. Lakhs
1.	Ambient Air Quality	-	12.00
2.	Noise Level	-	25.00
3.	Surface and Ground Water Quality	-	15.00
4.	Soil Quality	-	15.00
5.	Solid/ hazardous wastes	03.00	15.00
6.	Green Belt Development	400.00	50.00
7.	Fisheries Conservation & Management Plan	15.00	
8.	Labour Management Plan	25.00	
9.	Wildlife Conservation Plan	75.00	
10.	Muck Management Plan	25.00	
11.	Health & Safety	-	25.00
12.	Command Area Development Plan	24887.00	
Summary of allocation of fund for EMP			
1.	EMP Capital Cost: (eg.: Air Environment, Water Environment)	25430 Lakhs	
2.	Recurring Cost per annum (In Lakhs)	160.00 L	
3.	Project Cost (in Cr.)	3281.89	
4.	Corporate Environmental Responsibility	820.00	

44.5.3 The proposal was earlier considered by the EAC in its 22nd meeting held on 10.01.2025 wherein PP did not attend the meeting. Afterwards, the proposal was again considered by the EAC in its 22nd meeting held on 10.01.2025. Accordingly, PP submitted following additional details sought by the EAC on 9th April, 2025:

Query 1: PP shall submit the status of the 3.83 Ha of forest land for obtaining Stage-I Forest Clearance (FC), along with all relevant supporting documents.

Reply: Status of the online application of forest land for obtaining Stage-I Forest Clearance (FC) is as below

Sr. No.	Area in ha	Village /Scheme	Status
FP/MH/Pipeline/479779/2024	0.63	Vejegaon & Bhikawadi, Tal-Khanapur, Dist-Sangli	Proposal pending at APCCF, Nagpur
FP/MH/Pipeline/ 514447/2024	0.922	Rewangaon, Pare, Vita Stage 6 A & 6 B	Pending at DCF Office, Sangli

And few more forest land proposals are pending at DFO Sangli office for area evaluation. The forest land for project is increasing because in the pipe drain network (PDN) area on revenue records the land is with government of Maharashtra or private land but in actual it is in custody of forest. Therefore, the proposals are increasing and the initially assessed land area is increasing.

Query 2: PP shall submit a closure report from the RO, MoEF&CC, addressing the observations/ suggestions provided by the RO, MoEF&CC.

Reply: Closure report F. No. EC-2556/RON/2024-NGP/14157 dated 9th April 2025 has been submitted.

Query 3: The concurrence/ approval of CWC for hydrology of the present expansion proposal shall be examined and a clarification of CWC in this regard be submitted.

Reply: The proposed expansion of Tembhu LIS project is the part of Tembhu project and its approved by Government of Maharashtra. Hydrology and water availability for this project is assessed by the State Chief Engineer Hydrology and within the state allocated share of 585 TMC water by KWDT-1. It is an enbloc allocation so projects is in within the allocated share of the state. So separate concurrence /approvals for this expansion of the project is not necessary at this stage.

Query 4: The MoU for water usage for the proposed project shall be submitted along with an English-translated copy, duly attested by the PP.

Reply: The MoU for water usage for the project has been submitted. However, for proposed expansion projects MOU will be signed after completion of Command Area Development Works (CADA)

Query 5: PP shall submit detail plan on water utilization for existing project and proposed
Project.

Reply: The Tembhu Lift Project lifting of 22.00 TMC of water from Krishna river and utilizing it for irrigation of 80472 Ha of ICA command area from drought prone talukas of Sangli, Satara and Solapur districts. Also proposed to utilize an addition 8 TMC of water for providing irrigation facility to 109 villages from Sangli, Satara and Solapur districts. Availability of water for Tembhu Lift Irrigation scheme is 30 TMC and which is available from following sources.

S. No.	Sources	Content
1	Koyana Dam	18.46 TMC
2	Wang Dam	0.97 TMC
3	Tarali Dam	1.67 TMC
4	Krishna river monsoon flow	0.90 TMC
5	Balance Water of Tembhu Project (As per 1st Tribunal report)	3.500 TMC
6	Krishna Canal Project Difference in Total provision & actual use of water (as per 1st Tribunal report)	2.5 00 TMC
7	Saving of water (Qty to be diverted towards western from Koyana Project)	2.00 TMC
	Total Qty Of Water	**30.00 TMC**

Tembhu scheme has water use of 30.00 TMC and the water use is as per following:

Sr. No.	Description	Water requirement in TMC			
		Kharif	Rabi	H.W.	Total
1	Irrigation purpose	6.06	16.72	5.41	28.19
2	Non-irrigation purpose	1.21			1.21
3	K.T. Weir on Man river	---			0.60
				Total	30.00

Details of villages of existing command of Tembhu Project is as given below:

District	**Taluka**	**No. of villages**	**ICA(Ha)**	**Water Requirement TMC**
Sangli	1) Khanapur	54	18957	5.19
	2) Tasgaon	35	7700	2.11
	3) Kawathemahankal	31	7872	2.15
	4) Atpadi	47	16000	4.37
	5) kadegaon	39	9325	2.55

	Total Of Sangli District	206	59854	16.37
Satara	karad	3	600	0.16
	Total Of Satara District	3	600	0.16
Solapur	8) Sangola	31	20000	5.47
	Total Of Solapur District	31	20000	5.47
	Gross Total	240	80472	22.00

Details of villages of proposed command of Extented Tembhu Project is as given below:

District	**Taluka**	**No. of villages**	**ICA (Ha)**	**Water Requirement TMC**
Sangli	1)Khanapur	**11**	**6471**	**1.5**
	2) Tasgaon	**17**	**6026**	**1.00**
	3) Kawathemahankal	**9**	**2450**	**0.50**
	4) Atpadi	**12**	**5294**	**1.00**
	5) Jat	**4**	**2636**	**0.50**
	Total Of Sangli District	**53**	**22877**	**4.50**
Satara	6) Khatav	**21**	**7440**	**1.50**
	7) Maan	**27**	**5686**	**1.00**
	Total of Satara District	48	13126	2.50
Solapur	8) Sangola	**8**	**5000**	**1.00**
	Total Of Solapur	**8**	**5000**	**1.00**
	Gross Total	**109**	**41003**	**8.00**

The same data was submitted in EIA report also.

Query 6: PP shall submit details of land reclamation practices undertaken in the existing project. Based on these practices, a comprehensive plan for implementing land reclamation in the proposed expansion shall also be submitted.

Reply: Existing land reclamation practices focus on the efficient use of excavated materials to restore and enhance land conditions. The muck retained from excavation is utilized for backfilling purposes, ensuring stability and support for construction or rehabilitation activities. Additionally, the excess muck is strategically placed in low-lying areas to improve land elevation and prevent water logging. The topsoil layer, which is rich in nutrients, is provided to nearby farmers for agricultural purposes.

Reclamation land practices for proposed expansion will be according to PDN Policy. After adopting the PDN policy in 2017 by government of Maharashtra. Extensive PDN work was executed by water resources department 2018-2020. While executing the PDN work the alignment of PDN was through farmer's fertile land. To avoid the losses of farmers, we have made reclamation of land by refilling the top 1 to 1.5 feet layer root zone of with fertile soil from nearby area and make the land to its original state as before excavation.

Encloses the geo tagged photographs of the existing practices and some area where PDN work was executed and then land work reclaims and after that the farmers are taking regular crops on it.

Similar to above we have made provision of around 303558.79 m3 of soil for top 1 feet of layer of fertile soil for reclamation of land. For the proposed expansion work.

44.5. The proposal was re-considered by the EAC in its 30th EAC meeting held on 30.04.2025 wherein EAC sought additional information from the PP. Accordingly, PP submitted following additional details sought by the EAC on 02.12.2025:

Query 1: The PP shall submit the approval/ concurrence/clarification of the Central Water Commission (CWC) for the preliminary hydrology chapter related to the proposed expansion.

Reply: The Screening Committee of CWC under the chairmanship of Chief Engineer, PAO, CWC, in its meeting held on 14.11.2025, considered the Preliminary Report of "Tembhu Lift Irrigation Project (Extended with ICA of 41,003 Ha), Maharashtra". In light of the discussions held in the meeting of Screening Committee of CWC, the "In Principle" consent/Clarification/approval received from CWC for "Tembhu Lift Irrigation Project (Extended with ICA of 41,003 Ha), Maharashtra" vide OM of meeting Dated: 18/11/2025

The In-Principle consent for preparation of DPR will have a validity of three years, within which, State Govt. has to submit the DPR, otherwise, extension and/or fresh "in- principle" consent needs to be obtained from CWC.

Query 2: The PP is required to re-check and revise the Water Balance Table, ensuring all values are accurate and consistent with the hydrological and project design parameters. The revised table must be accompanied by a brief explanation of methodology and assumptions used.

Reply:

Project authority has indicated the following water availability (savings) for Extended Tembhu LIS (irrigated area 41003 ha)

Sl. No.	Source of water	Quantity
1	Water available from Tarali Project	2.50 TMC
2	Water available from Wang Project 1	1.00 TMC
3	Saving from Krishna Canal	2.50 TMC
4	River Flow in Monsoon	2.00 TMC
	Total	8.00 TMC

Water Balance Table for Existence and Proposed

Tembhu Project (Original)					**Tembhu Project (Extension)**			**Grand Total**	
District	Taluka	No. of villages	ICA (Ha)	Water Use inTMC	No. of villages	ICA (Ha)	Water Use inTMC	ICA (Ha)	Water Use inTMC
Satara	Karad	3	600	0.16				600	0.16
	Khatav				29	7,440	1.45	7,440	1.45
	Man				19	5,686	1.11	5,686	1.11
Sangli	Khanapur	54	18,175	5.19	11	6,471	1.26	24,646	6.45
	Tasgaon	35	8,500	2.11	17	6,026	1.18	14,526	3.29
	Atpadi	47	16,000	4.37	12	5,294	1.03	21,294	5.40
	K' Mahankal	31	7,872	2.15	9	4,255	0.83	12,127	2.98
	Kadegaon	39	9,325	2.55				9,325	2.55
	Jath				4	2,636	0.51	2,636	0.51
Solapur	Sangola	31	20,000	5.47	8	3,195	0.63	23,195	6.10
Total		**240**	**80,472**	**22.00**	**109**	**41,003**	**8.00**	**1,21,475**	**30.00**

Methodology

Crop water requirement by Modified Penman Method:

"NET IRRIGATION REQUIREMENT of each crop is worked out modified penman method. For this ETo values of Miraj climatological station area considered Crop factors (kc) are adopted as per published data of State Agriculture Department.

Effective Rainfall and Net Irrigation Requirement: -

Fortnightly effective rainfall is worked out from observed rainfall data of 11 rains Gauge station influencing command area listed below, for the period 1993 to 1991 And is appended NIR is worked out with the help of computer software available in S.E.I.P. & W.R.I. Circle Pune's office**.**

A) Season wise water requirement for 1000 Ha. of I.C.A. is as under.

Season	NIR Ha.m/ Mcft	GIR with 45.5% system fficiency Ha.m/Mcft.	NIR Ha.m/ Mcft	GIR with 66.50% system efficiency Ha.m/Mcft.
Kharif	76.07/26.86	167.19/59.03	76.07/26.86	114.39/40.39
Rabi	210.05/74.17	461.65/163.01	210.05/74.17	315.86/111.53
H.W.	67.93/23.99	149.3/52.72	67.93/23.99	102.15/36.07
Total	354.05/125.02	778.13/274.76	354.05/125.02	532.4/187.99

B) Water requirement for 1,21,475 Ha.

	Season wise Water requirement for 61,611 Ha. for open canal		Season wise Water requirement for 59,864 Ha. for closed canal	
Season	**Mcum**	**TMC**	**Mcum**	**TMC**
Kharif	103.00743	3.64	68.47843	2.42
Rabi	284.42718	10.04	189.08643	6.68
H.W.	91.985223	3.25	61.151076	2.16
Total	479.41367	16.93	318.71594	11.26

C) Total Water Utilization for Tembhu Project is 30 TMC out of which 28.19 TMC is for irrigation purpose, 0.6 TMC for K.T weirs on Man River and 1.21 TMC is for Non-Irrigation Purpose (Drinking and Industrial).

44.5.4 The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted by the Project Proponent and the details presented during the meeting. The Committee observed that the proposal pertains to the grant of Environmental Clearance for the Expansion of Tembhu Lift Irrigation Project in an area of 2284.601 ha at Village Tembhu, Ranad, Govare and etc, Sub District Khatav, Atpadi, Karad and etc, District Satara, Sangli and Solapur, Maharashtra by M/s Minor Irrigation Division, Sangli Water Resources Department, Maharashtra Krishna Valley Development Corporation.

- The project falls under item 1(c) of the Schedule to the Environmental Impact Assessment (EIA) Notification, 2006, as amended and is categorized as a Category ‘B1’ project, as Culturable Command Area (CCA) is 223425 Ha. However, presence of Mayani Bird Conservation Reserve it requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

Observations of the EAC in its meeting held on 10.01.2025

- The EAC, constituted under the provisions of the EIA Notification, 2006, and comprising expert members/domain experts from various relevant fields, examined the proposal submitted by the Project Proponent. This examination included a review of the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports, which were prepared and submitted by a QCI/NABET-accredited consultant on behalf of the Project Proponent.

- The EAC further noted that the Ministry had granted Environmental Clearance (EC) to the existing project vide letter No. 12011/43/2003-A.I dated 17/08/2007, in favor of M/s. Minor Irrigation Circle, Maharashtra Krishna Valley Development Corporation, Warnali, Sangli for an Irrigation Command Area (ICA) of 80,472 ha. For the current expansion project, the Ministry has issued Terms of Reference (ToR) for conducting the Environmental Impact Assessment (EIA)/Environmental Management Plan (EMP) and a public hearing vide letter File No. J-12011/48/2023-IA.I(R) dated 02/11/2023.

- The EAC also noted that the project was previously considered during its 22nd meeting on 10/01/2025. However, the proposal was deferred as the Project Proponent (PP) did not attend the meeting.

- The EAC noted that the Project Proponent has given an undertaking that the data and information given in the application and enclosures are true to the best of his knowledge and belief and no information has been suppressed in the EIA/EMP reports. If any part of data/information submitted is found to be false/ misleading at any stage, the project will be rejected and Environmental Clearance given, if any, will be revoked at the risk and cost of the project proponent.

- The EAC further noted that the total land area required for the project is 2282.90 ha, comprising 2272.18 ha of the existing project area and an additional 10.71 ha required for the proposed expansion. Of this additional land, 2.78 ha is non-forest land, while 7.93 ha is forest land. The PP informed that for the 7.93 ha of forest land, Stage-I Forest Clearance (FC) has already been obtained for 4.10 ha (vide FP/MH/Pipeline/466395/2024 dated 06/01/2025), while the proposal for the remaining 3.83 ha has been submitted for approval.

- The Committee discussed the issues raised during the Public Hearing (PH) which was conducted in three districts as per the EIA Notification, 2006 and reviewed the action plan submitted by the Project Proponent to address these concerns. After careful deliberation, the Committee found the action plan satisfactory.

- The EAC observed that approval on the Hydrology has been obtained from State Government, vide letter (Marathi) शासन ननर्णय क्र. टेंभूसुप्रमा- /0411प्रक्र/11/305.मोप्र1-नि2019/02/04. The expert representative from CWC informed the Committee that DPR

of the existing project was examined by the CWC; however, the PP has not submitted the DPR for concurrence of CWC for present expansion proposal.

- Additionally, the EAC noted that Certified Compliance Report of earlier EC conditions has been submitted by RO, MoEF&CC vide F. No. EC-2556/RON/2024-NGP/3436 dated 12th August, 2024. The RO, MoEF&CC raised serious concerns over compensatory afforestation, Multidisciplinary Committee, non- submission of half yearly compliance report etc. Taking cognizance of these issues, the EAC requested the PP to submit a closure report from the RO, MoEF&CC, addressing the observations/ suggestions provided by the RO, MoEF&CC.

Observations of the EAC in its meeting held on 30.04.2025

- The EAC observed that approval of pre chapter of hydrology is a requisite document for examination of the proposal. In this regard, earlier, an ADS was raised and PP couldn't submit the document for appraisal. Therefore, it was opined that PP shall obtain concurrence/ approval of CWC for hydrology of the present expansion or otherwise.

- The EAC further noted that the values submitted in the water balance table shall be rechecked and be submit accordingly.

Current meeting EAC deliberations:

- The EAC noted that during the last two meetings, the Committee had repeatedly emphasized the requirement for concurrence/approval from the Central Water Commission (CWC) for the hydrology of the proposed expansion. The Committee further noted that the PP has now submitted in Principle consent/Clarification/approval for "Tembhu Lift Irrigation Project (Extended with ICA of 41,003 Ha), Maharashtra" vide OM 18/11/2025 granted by CWC.

- The Committee also examined the revised Water Balance Table and noted that the PP has provided comprehensive data on water availability for the Extended Tembhu LIS along with the consolidated water requirement for the entire command area of 1,21,475 ha, totaling 30 TMC. Additionally, the Committee found the methodology, assumptions, and water balance figures to be technically sound and satisfactory.

- The EAC noted that the estimated project cost is Rs 7370.03 Cr. including existing investment of Rs 4088.14 crores. Total capital cost earmarked towards environmental pollution control measures is Rs. 25430 Lakhs and the Recurring cost (operation and maintenance) will be about Rs 160.00 L per annum.

44.5.5 The EAC after examining the information submitted and detailed deliberations **recommended** the proposal for grant of Environmental Clearance by the Ministry to Expansion of Tembhu Lift Irrigation Project in an area of 2284.601 ha at Village Tembhu, Ranad, Govare and etc, Sub District Khatav, Atpadi, Karad and etc, District Satara, Sangli and Solapur, Maharashtra by M/s Minor Irrigation Division, Sangli Water Resources Department, Maharashtra Krishna Valley Development Corporation, 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. The green belt plan and reclamation plan of existing canal shall be implemented strictly in time bound manner, and bi-annual status shall be submitted to regional office in six monthly compliance report. The EAC Sub-Committee observations shall be suitably incorporated in the reclamation plan.
ii. The Environmental Management Plan (EMP) shall strictly adhere 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.
iii. The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.
iv. Ambient Air Quality Monitoring Stations for real time data to be installed at project site before commencement of the construction, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.
v. 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.
vi. Native plants shall be planted around the muck disposal area in consultation with Forest Department and the survival of plants shall be reported in the 6 monthly compliance report.
vii. Plantation of saplings (10000 nos.) shall be carried out as a part of the tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).

[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. 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.

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

iv. School up to 12th Standard with smart classrooms shall be established to provide quality education for children from project affected villages/Tribal villages.

v. Skill Development Centre shall be established within 10 km radius of the project and regular training programmes for development and promotion of traditional art/products of tribal/local population.

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

vii. Bio-Gas plant shall be installed in the Project affected villages @ per family for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.

[D] Miscellaneous:

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

ii. PP should establish in house (at project site) environment laboratory for measurement of environment parameter with respect to air quality and water (surface and ground). A dedicated team to oversee environment management shall be setup which should comprise of Environment Engineers, Laboratory chemist and staff for monitoring of air, water quality parameters on routine basis.

iii. A dedicated team to oversee environmental management activities (at project site) shall be set up comprising Environment Manager having post graduate

qualification in Environmental Sciences/ Environment Engineering along with other supporting staff. The Environment Manager Shall report to Project Head directly.

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

The meeting ended with vote of thanks to and from the Chair.

ANNEXURE

ATTENDANCE

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

APPROVAL OF THE CHAIRMAN