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 56th MEETING OF THE EXPERT APPRAISAL COMMITTEE meetin g River Valley and Hydroelectric Projects held from 08/06/2026 to 08/06/2026 **Date:** 22/06/2026

MoM ID: EC/MOM/EAC/496824/6/2026

Agenda ID: EC/AGENDA/EAC/496824/6/2026

Meeting Venue: N/A

Meeting Mode: Virtual

Date & Time:

08/06/2026	10:30 AM	05:30 PM

1. Opening remarks

The 56th 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 8th June, 2026 through Virtual Mode, under the Chairmanship of Prof. G. J. Chakrapani.

2. Confirmation of the minutes of previous meeting

Confirmation of the Minutes of the 55th EAC meeting:

The Minutes of the 55th meeting held on 25th May, 2026 were confirmed.

Corrigendum in the Minutes of the 52nd EAC meeting held on 13.04.2026:
The Member Secretary informed the EAC that the proposal for grant of prior Environmental Clearance to the proposed Chentikheda Major Irrigation Project (15,300 ha CCA) in an area of 1369.35 located at Aroda, Pachnia, and Garhi etc., Sub-District Vijaypur & Sabalgarh, District Sheopur & Morena, Madhya Pradesh by M/s Water Resource Department Sabalgarh, District Morena, MP [Proposal No. IA/MP/RIV/557462/2026; F. No. J-12011/28/2024-IA.I (R)] was considered during 52nd meeting of the EAC held on 13.04.2026. The EAC after detailed

deliberations recommended the proposal for grant of Environmental Clearance with suitable environmental safeguards.

During the processing of the recommendations of the EAC, it was observed that, due to an inadvertent typographical error in a sub-paragraph of paragraph 52.3.3 of the minutes, the name of the project was incorrectly recorded as *Dulhasti Stage-II HEP* instead of *Chentikheda Major Irrigation Project*.

The EAC examined the matter and, upon verification of the relevant facts and records, concurred the proposed correction and recommended that sub-paragraph (iii) of paragraph 52.3.3 be suitably amended. Accordingly, the said sub-paragraph shall be read as follows:

"...The Terms of Reference for conducting EIA/EMP study along with Public hearing for proposed Chentikheda Major Irrigation Project was granted by the MoEF&CC vide letter no. J-12011/28/2024-IA.I (R) dated 28.01.2025....."

3. Details of proposals considered by the committee

Day 1 -08/06/2026

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Formation of reservoir across Koraiyar river in Vickramasingapuram village of Ambasamudram Taluk in Tirunelveli District by **Water Resources Department** located at **TIRUNELVELI,TAMIL NADU**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/TN/RIV/569236/2026	J-12011/08/2026-IA.I(R)	26/05/2026	River Valley/Irrigation projects Irrigation Projects (1(c))

3.1.2. Project Salient Features

The proposal is for grant of Terms of Reference (ToR) to the project for Formation of reservoir across Koraiyar river in Vickramasingapuram village of Ambasamudram Taluk in Tirunelveli District, Tamil Nadu by M/s Water Resources Department, Government of Tamil Nadu.

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

i. The Government of Tamil Nadu, through the Water Resources Department (WRD), has proposed the Koraiyar Reservoir Project across the Koraiyar River in Vickramasingapuram Village of Ambasamudram Taluk, Tirunelveli District, Tamil Nadu.

ii. The Koraiyar River is a tributary of the Thamirabarani River Basin and presently its flood flows during monsoon season remain largely unutilized after feeding only one irrigation tank namely Singaperumalkulam. The proposed project aims to harness surplus monsoon runoff by construction of a reservoir and associated canal system for irrigation development, flood moderation, groundwater recharge and regional socio-economic development.

iii. Several drought-prone areas adjacent to the Thamirabarani Basin such as portions of Alangulam Taluk, Manur Taluk, Tirunelveli Taluk and surrounding command areas face recurring water shortages due to inadequate rainfall and limited dependable irrigation sources. Farmers of Manur and Pallamadai regions have been demanding assured irrigation

support. The proposed project is intended to:

· Utilize presently unutilized flood waters of Koraiyar River
· Provide assured irrigation to deficit areas
· Stabilize existing ayacut
· Create additional irrigation potential
· Improve groundwater recharge
· Reduce downstream flood damages during heavy rainfall periods

iv. **Proposed Benefits**

Ø Irrigation Benefits

· Existing ayacut presently served: 1225.66 ha

· Proposed ayacut after project: 9091.5 ha

Ø Agricultural Benefits · Increase in cultivation of:

· Paddy

· Banana

· Tomato

· Chilli

· Onion

Ø Other Benefits

· Flood moderation in downstream reaches

· Groundwater recharge through tank system

· Increased cropping intensity

· Rural employment generation

· Improvement in socio-economic conditions

v. The geographical co-ordinate of the project are:
8°43'41"N, 77°21'.21"

vi. Formation of reservoir across Koraiyar River for Irrigation of 9091.50 Ha Cultural Command Area in Tirunelveli District of Tamil Nadu

vii. **Land requirement:** The total extent of land required for Reservoir, High Level canal and Supply Channel is about 819.211 Ha. The details are given below:

Nature of Land involved	Area in Ha

The proposed project is located in Ambasamudram Taluka in Tirunelveli District. As per Census 2011, the total population in the study area is 6,11,045. The male and Female population in study area blocks comprises about 49.40% and 50.59% respectively of the total population

ix. **Water requirement:**
Water requirement during Construction phase is estimated as 16.95 KLD

x. **Project Cost:** The estimated project cost is Rs 1875 Crores**.**

xi. **Project Benefit:** The proposed project shall irrigate cultural Command of 9091.50 Ha. The implementation of proposed project will significantly enhance the food production in the region and shall benefit the local population and Flood in the area.

xii. **Environmental Sensitive Area:** The proposed project falls under Kallakkad Mundanthurai Tiger Reserve (KMTR), Tamil Nadu.

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

xiv. **Alternative Studies:** No.

xv. **Details of Solid waste/ Hazardous waste generation/ Muck and its management:** Solid Waste – 14.24 TPA (Construction Phase); Management Plans to be prepared as part of EMP of EIA study after approval of ToR

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

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

Name of the Proposal	Formation of reservoir across Koraiyar River in Vickramasingapuram village of Ambasam udram Taluk in Tirunelveli District, Tamil Na du
Location (Including coordinates)	Village: Vickramasingapuram, Taluka: Amba samudram, District: Tirunelveli, Tamil Nadu 8°43'41"N, 77°21'.21"E
Inter- state issue involved	Nil
Seismic zone	III
Category of the project	Category A
Provisions	--
Capacity / Cultural command area (CCA)	9091.50 Ha
Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	--

· **Electricity generation capacity**: NA

· **ToR/ EC Details**

Cost of project	Rs. 1875 Crores
Total area of Project	819.211 Ha
Height of Dam from River Bed (EL)	43 m
Length of Tunnel/Channel	-

Details of Submergence area	278.105 Ha (Reserve Forest Land-156.440 Ha, Government Land- 80.195 Ha and Private Land – 41.47 Ha)
Types of Waste and quantity of generation during construction/ Operation	Solid Waste – 14.24 TPA (Construction Phase)
E-Flows for the Project	As Applicable
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	Shall be proposed during EIA study

No. of proposed disposal area/(type of land-Forest/Pvt. land)	All the Muck generated shall be utilized for Bund formation of the Reservoir
Muck Management Plan	--
Monitoring mechanism for Muck Disposal	--

Private land /Non-Forest Land	506.886 Ha
Government land	125.59 Ha
Forest Land	186.735 Ha
Total Land	819.211 Ha
Submergence area/Reservoir area	278.105 Ha
Additional information (if any)	--

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate/ letter/Remarks**
Reserve Forest/Protected Forest Land	Yes	

National Park	No	Kallakkad Mundanthurai Tiger Reserve (KMTR)
Wildlife Sanctuary	Yes	

Particulars	**Details**
Details of consultant	WAPCOS Limited
Project Benefits	· The implementation of proposed project will significantly enhance the food production in the region and shall benefit the local population · Mitigation of the Flood in the area
Status of other statutory clearances	Yet to be submitted
R&R details	To be prepared as part of EIA Studies
Additional detail (If any)	-

3.1.3. Deliberations by the committee in previous meetings

N/A

3.1.4. Deliberations by the EAC in current meetings

The EAC during deliberations noted the following:

- The EAC deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA study for Formation of reservoir across Koraiyar river in Vickramasingapuram village of Ambasamudram Taluk in Tirunelveli District, Tamil Nadu by M/s Water Resources Department, Government of Tamil Nadu.

- The EAC noted that the present project proposal comes under "B1" category; as per the provisions of the EIA Notification, 2006, as amended as Culturable Command Area (CCA 9091.50 Ha). However, the project components are falling under Kallakkad Mundanthurai Tiger Reserve (KMTR), it requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

- The EAC observed that the Koraiyar reservoir schemes comprises of the formation of reservoir across river Koraiyar in Vickramasingapuram village of Ambasamudram Taluk in Tirunelveli district of Tamilnadu. At present Koraiyar irrigates only one tank, namely Singaperumalkulam, in Vickramasingapuram village, having an ayacut of 46.22 acres, and then it confluences with the Tamiraparani River.

· The EAC noted that the total land required for the project is estimated to be 819.211 Ha. Out of which, non-forest land affected is 632.476 ha and forest land involved is about 186.735 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 EAC noted with concern that the proposed project is located within the Kallakkad Mundanthurai Tiger Reserve, a protected area of high ecological significance that serves as a critical habitat for several endemic wildlife species, including the Tiger, Nilgiri langur and other flora and fauna of conservation importance.

· The Committee observed that the PP had not adequately examined alternative options for meeting the proposed command area requirements. The EAC further opined that PP shall explore the alternate sites in the headwater of Chittar basins for enhancing the capacity of Manur and Pallamadai tanks located in the same river basin. This may achieve the intended objectives while minimizing ecological/ environmental impacts. The Committee also noted that such an alternative could potentially be implemented with comparatively lower investment and reduced environmental implications.

· The EAC emphasized that, considering the environmental sensitivity of the project location, a rigorous alternatives analysis is an essential component of project planning and appraisal.

· During the deliberations, the Committee opined that the possibility of relocating the proposed dam site to other tributaries of Chittar river basin to achieve the target and it may potentially lie outside the boundary of the Tiger Reserve and could therefore substantially reduce the project's ecological footprint and associated impacts on wildlife habitats and protected ecosystems, which will be comparatively lower investment requirements.

56.5.4 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 Formation of reservoir across Koraiyar river in Vickramasingapuram village of Ambasamudram Taluk in Tirunelveli District, Tamil Nadu by M/s Water Resources Department, Government of Tamil Nadu, for want of following information:

i. The PP shall undertake and submit a comprehensive alternatives analysis for achieving the intended irrigation and command area objectives, including but not limited to alternative project configurations, locations, and design options, with due consideration to environmental, ecological, technical, and economic parameters. The alternatives analysis shall be supported by site-specific data, maps, and relevant studies, clearly establishing the rationale for selection of the proposed site over other feasible options, particularly in view of the environmental sensitivity of the region.

ii. The Project Proponent (PP) shall furnish a detailed justification for siting the proposed project within the Kallakkad Mundanthurai Tiger Reserve, a protected area of high ecological significance, including an assessment of anticipated impacts on wildlife habitats, particularly on tiger populations and other endemic flora and fauna of conservation importance.

iii. The PP shall specifically examine the feasibility of relocating the proposed dam site to other undammed tributaries of Chittar river basin, outside the boundary of the Tiger Reserve, and provide a comparative analysis vis-à-vis the current proposal in terms of ecological impacts, project cost, technical viability, and overall benefits.

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

3.1.5. Recommendation of EAC

Deferred for ADS

4. Any Other Item(s)

N/A

5. List of Attendees

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

MINUTES OF THE 56TH MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 8th JUNE, 2026 THROUGH VIRTUAL MODE.

The 56th 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 8th June, 2026 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 55th EAC meeting:

The Minutes of the 55th meeting held on 25th May, 2026 were confirmed.

Corrigendum in the Minutes of the 52nd EAC meeting held on 13.04.2026:

The Member Secretary informed the EAC that the proposal for grant of prior Environmental Clearance to the proposed Chentikheda Major Irrigation Project (15,300 ha CCA) in an area of 1369.35 located at Aroda, Pachnia, and Garhi etc., Sub-District Vijaypur & Sabalgarh, District Sheopur & Morena, Madhya Pradesh by M/s Water Resource Department Sabalgarh, District Morena, MP [Proposal No. IA/MP/RIV/557462/2026; F. No. J-12011/28/2024-IA.I (R)] was considered during 52nd meeting of the EAC held on 13.04.2026. The EAC after detailed deliberations recommended the proposal for grant of Environmental Clearance with suitable environmental safeguards.

During the processing of the recommendations of the EAC, it was observed that, due to an inadvertent typographical error in a sub-paragraph of paragraph 52.3.3 of the minutes, the name of the project was incorrectly recorded as *Dulhasti Stage-II HEP* instead of *Chentikheda Major Irrigation Project*.

The EAC examined the matter and, upon verification of the relevant facts and records, concurred the proposed correction and recommended that sub-paragraph (iii) of paragraph 52.3.3 be suitably amended. Accordingly, the said sub-paragraph shall be read as follows:

"…The Terms of Reference for conducting EIA/EMP study along with Public hearing for proposed Chentikheda Major Irrigation Project was granted by the MoEF&CC vide letter no. J-12011/28/2024-IA.I (R) dated 28.01.2025….."

<u>Agenda Item No. 56.1</u>

Indirasagar-Omkareshwar Open loop Pumped Storage Project (8x80= 640 MW) at Village-Narmada Nagar, Tahasil Punasa, District- Khandwa, Madhya Pradesh by M/s NHDC Limited– Environmental Clearance (EC) - reg.

[Proposal No. IA/MP/RIV/576898/2026; F. No. J-12011/31/2024-IA.I (R)]

56.1.1: The proposal is for environmental clearance to the project for Indirasagar-Omkareshwar Open loop Pumped Storage Project (8x80= 640 MW) at Village- Narmada Nagar, Tahasil Punasa, District- Khandwa, Madhya Pradesh by M/s NHDC Limited.

56.1.2: The Project Proponent and the accredited Consultant M/s. Centre for Envotech and Management Consultancy Pvt. Ltd, made a detailed presentation on the salient features of the project and informed that:

i. NHDC (a joint venture of NHPC Ltd. and the Government of Madhya Pradesh) proposes the Indira Sagar-Omkareshwer Pumped Storage Scheme (ISPOSP PSP), located near Punasa Village in Punasa Tehsil of Khandwa District, Madhya Pradesh.

ii. The scheme is designed to optimally utilize existing infrastructure by operating between two already constructed reservoirs.

iii. Indirasagar-Omkaresher Pump Storage Project (ISP-OSP PSP) is a pumped storage scheme on Narmada River. The proposed project utilizes the capacity of Reservoirs of Indirasagar and Omkareshwar power station for power generation by installing a pumped storage scheme of 640 MW in the vicinity on right bank of existing Indirasagar Power Station (ISPS) in Madhya Pradesh.

iv. The Indira Sagar Project reservoir on the Narmada River will function as the upper reservoir, while the Omkareshwar Power Station reservoir will serve as the lower reservoir. The upper diversion arrangement is proposed near the Indira Sagar Dam, with the overall scheme aligned along the river bank.

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

Latitude : 220 17' 00" N

Longitude : 760 28' 00" E

vi. The Indirasagar-Omkareshwar Pumped Storage Project (8x80= 640 MW) envisages construction of Pumped Storage Project.

vii. **Project Background:**

NHDC Limited, a joint venture of NHPC Ltd. and the Government of Madhya Pradesh, was incorporated on 1 August 2000. The company was established to develop hydropower

projects in the Narmada Basin and has executed landmark projects such as the Indira Sagar Project (1000 MW) and the Omkareshwar Project (520 MW).

a. The new initiative, the Indira Sagar–Omkareshwar Pumped Storage Project (ISP-OSP PSP), is designed to enhance energy reliability by storing surplus electricity during off-peak hours and releasing it during peak demand.
b. The Proposed project is planned to locate near Village Narmada Nagar, Tahasil - Punasa, District - Khandwa, Madhya Pradesh. The land area required for the proposed project is 198 hectares, which is entirely of forest area. It will produce 640 MW more in addition to the existing electricity production of 1000 MW by utilising both Indira Sagar as upper reservoir and Omkareshwar as lower reservoir.
c. The Purpose of the project is to balance electricity demand by pumping water during off-peak periods and generating power during peak hours. This scheme leverages existing infrastructure, avoiding the need for new dams or additional storage creation.
d. No new reservoirs are required; the project depends on established datasets of Indira Sagar and Omkareshwar reservoirs.

viii. **Land requirement:** A total land of 198 ha is required for the construction of this proposed Indirasagar-Omkareshwer Pumped Storage Project. The entire area comes under Forest land.

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

Total number of villages & towns	
Number of Households	8066
Total Population	38011
Total number of Males	19786
Total number of Females	18225
Male/ Female (Sex) ratio	1000:921
Percentage of Child population (Below 6 years)	7.84
Percentage of S.C population	11.41
Percentage of S.T Population	43.75
Percentage of Literates	56.36
Percentage of Illiterates	43.64

x. **Water requirement:**

Indira Sagar Pump Storage Project is a pump storage project hence no consumptive use of water has been envisaged for Power Generation. The upper reservoir i.e. Indira Sagar has Gross capacity of 11628 MCM and Live capacity of 9282 MCM. The Lower reservoir i.e. Omkareshwar has 868.79 MCM and Live capacity of 230.49 MCM. The proposed Indira

Sagar PSP envisages recycling of stored water between upper and lower reservoirs which are already in operation.

xi. **Project Cost:** The estimated project cost is Rs. **5243.19 Crore.**

xii. **Project Benefit:** The project will produce additional 640 MW electricity along with installed capacity of 1000 MW and make a significant contribution to energy security, grid stability. From an electricity system perspective, pumped storage projects provide large-scale energy storage and respond rapidly to fluctuations in demand. Their ability to ensure immediate power supply and manage peak loads enhances grid reliability and operational flexibility, especially in scenarios where the share of variable renewable energy, such as solar and wind, is increasing.

xiii. **Environmental Sensitive area**: The study area indicates that no ecologically protected areas, such as National Parks, Wildlife Sanctuaries, or notified Eco-Sensitive Zones, are located within a 10 km radius of the proposed project site. However, two Reserve Forests, namely Chandgarh Reserve Forest and Punasa Reserve Forest, are located within the 10 km buffer zone of the project area.

xiv. **MoU/any other clearance/permission signed with State government:** Yes, the Letter of Pump Hydro Storage Site Allotment (LOPSA) was granted to NHDC Ltd by Office of the Commissioner, New & Renewal Energy (Govt. of M.P.), Bhopal vide letter No. F/NRE/23-24/05-102/238, dated 07.06.2023.

xv. **Resettlement and rehabilitation:** There will be no displacement of families due to the project

xvi. **Scheduled–I species:**

Rusa unicolor, Canis aureus, Panthera pardus, Felis chaus, Paradoxurus hermaphroditus, Viverricula indica, Melursus ursinus, Accipiter nisus, Anhinga melanogaster, Spilornis cheela, Aythya farina, Bubo bengalensis, Ciconia episcopus, Circaetus gallicus, Circus aeruginosus, Pavo cristatus, Hieraaetus pennatus, Leiopicus mahrattensis, Neophron percnopterus, Nettapus coronandelianus, Ocyceros birostris, Pandion haliaetus, Pernis ptilorhynchus, Tringa nebularia, Tyto javanica, Lissemys punctata, Trionyx gangeticus, Varanus bengalensis, Python molurus, Eryx conicus, Eryx johnii, Ptyas mucosa, Amphiesma stolata, Xenochrophis piscator, Bungarus caeruleus, Naja naja, Naja naja Oxiana, Echis carinatus, Vipera russelli etc.

xvii. **Alternative Studies:**

For Indirasagar PSP three alternative i.e. Alternative I (480 MW), Alternative II (640 MW) and Alternative III (640 MW) have been studied.

Aspects	Description	Alternative-I	Alternative-II	Alternative-III

Design Aspects	Inlet	6 Nos., 6.75 m (W) x 8.1 m (H) Intake gate size and 173 m(L) x 25 m (W) x 43 m (H) upper inlet outlet Structure.	8 Nos., 6.75 m (W) x 8.1 m (H) Intake gate size and 233 m x 25 m (W) x 43 m (H) Upper Inlet- Outlet Structure.	Broad crested Inlet Weir, 100 m long, 20 m widewithan Inlet Channel of Trapezoidal shape about 147 m long (approx.), Concrete Lined. Width varying from 100 m to 32 m.
	Head race tunnel Length	1.25 to 1.36 km long, 6nos. of 8.1m dia. Horse shoe shaped concrete lined underground HRT.	1.25 to 1.4 km long, 8nos. of 8.1m dia. Horse shoe shaped concrete lined underground HRT.	Not applicable
	Head race channel Length	Not applicable	Not applicable	Trapezoidal, Concrete Lined,32m(Bottom Width) x 40.20 m (H) of 445 m length (approx.) Head race Channel.
	Semi underground powerhouse	213 m (L) x 27 m (W) x 55.4 m (H).	275 m (L) x 27 m (W) x 55.4 m (H).	243.30 m (L) x 27 m (W) x 57.40 m (H).
	Installed capacity	480	640	640
	Gross Head (m)	68.59	68.59	68.59
	Inlet area	Grey colour, med. strong to strong quartz arenite interbedded with purple coloured siltstone & purple coloured fine grained sandstone		
	HRT (Head Race Tunnel)	Grey colour, med. strong to strong quartz arenite interbedded with purple coloured siltstone & purple coloured fine grained sandstone.		Not applicable

Geology (Rock Type)	HRT (Head Race Channel)	Not applicable	Not applicable	Grey colour, med. strong to strong quartz arenite interbedded with purple coloured siltstone & purple coloured fine grained sandstone
	Semi underground Powerhouse	Grey colour, med. strong to strong quartz arenite interbedded with purple coloured siltstone & purple coloured fine grained sandstone.		
Geological Remarks	Inlet area	Rock is grey colour, med. strong to strong quartz arenite interbedded with purple coloured siltstone & purple coloured fine grained sandstone.		
	Head Race Tunnel	Number of HRT in Alternative- I is 6 separated by around 29m. Rock cover is approx. 60-85m.	Number of HRT in Alternative II is 8, separated by around 29m. Rock cover is approx. 60-85m.	Not applicable
Geological Remarks	Head Race Channel	Not applicable	Not applicable	Maximum depth of excavation is 45m. No major ground challenges, slope instability at side walls are foreseen.
	Powerhouse	Considering the orientation of faces and different sets of joints the optimum orientation of longer axis of semi underground powerhouse is aligned along **N020^{o} -N200^{o}**.		
Geological Suitability Remarks				Instead of underground excavation for HRT, surface head race channel poses lesser ground challenges.

The investigations carried out at Alternative-III (present layout) include topographical survey, detailed geological mapping of project area covering all the components.

xviii. **Baseline Environmental Scenario:**

Period	**From Dec 2024 to Sep 2025**
AAQ parameters at 8 locations (min. & Max.)	PM10 = 40.59 µg/m^3 to 67.3 µg/m^3 PM2.5 = 20.57 µg/m^3 to 39.89 µg/m^3 SO2 = 4.0 µg/m^3 to 8.8 µg/m^3 NOx = 9.1 µg/m^3 to 16.46 µg/m^3. CO = <0.05 mg/m^3 NH_3= <20 µg/m^3 Pb= <0.05 µg/m^3 As = <0.1 ng/m^3 Ni= <3.2 ng/m^3
River water samples **(6 samples)**	pH 7.23 to 8.23, Dissolved Oxygen: 4.5 to 5.7 mg/lit; Total Dissolved Solids: 208 to 278 mg/lit; Oil and grease: ND (mg/lit); Sulphate (as SO4): 7.8 to 20.6 mg/lit , Nitrate (asNO3) : 3.51 to 10.12 mg/lit; Chloride (as Cl) : 16.9 to 32.4 mg/lit; Iron (as Fe): 0.05 to 1.22 mg/lit; BOD 2.1 to 2.9 mg/lit; Heavy metals like Copper (as Cu)- <0.005 mg/l, Lead (as Pb)- <0.005 mg/l, Cadmium (as Cd)- <0.003 mg/l, Chromium (as Cr)- <0.005 mg/l and Arsenic (as As)- <0.001 mg/l
Pond water samples quality at 2 locations	pH: 7.24 to 7.88; Dissolved Oxygen: 4.1 to 5.1 mg/lit; Total Dissolved Solids: 228 to 320 mg/lit; Oil and grease: ND (<1.4 mg/lit); Sulphate (as SO4): 10.8 to 22.4 mg/lit, Nitrate (as NO3): 5.64 to 13.54 mg/lit; Chloride (as Cl): 14.9 to 39.4 mg/lit; Iron (as Fe): 0.33 to 0.53 mg/lit; BOD 2.2 to 3.0 mg/lit; Heavy metals like Copper (as Cu)- <0.005 mg/l, Lead (as Pb)- <0.005 mg/l, Cadmium (as Cd)- <0.003 mg/l, Chromium (as Cr)- <0.005 mg/l and Arsenic (as As)- <0.001 mg/l

Ground Water samples at 10 locations	pH: 6.52 to 7.6; Total Dissolved Solids: 404 to 492 mg/lit; total Hardness (as CaCO3): 144 to 192 mg/lit; Total Alkalinity(asCaCO3): 144 to 178 mg/lit; Calcium (as Ca): 38.48 to 51.3 mg/lit; Magnesium (as Mg): 10.5 to 19.93 mg/lit; Oil and grease: ---to --- (<1.4 mg/lit); Sulphate (as SO4): 41.6 to 92.2 mg/lit, Nitrate (as NO3): 19.6 to 41.5 mg/lit; Chloride (as Cl): 88.9 to 128.1 mg/lit; Iron (as Fe): 0.16 to 0.91 mg/lit; Heavy metals like Copper (as Cu): <0.005 mg/l, Lead (as Pb): 0.005 mg/l, Cadmium(as Cd): <0.003 mg/l, Chromium (as Cr): <0.005 mg/l, Manganese (as Mn): <0.005 mg/l, Arsenic (as As): <0.001 mg/l and Mercury(as Hg) : <0.001 mg/l.
Noise levels Leq (Day & Night) at -- locations	The Leq values for day time was observed to be 36.1 to 46.9 dB (A) in residential area, while during night time 31.4 to 37.3 dB (A).
Soil Quality at -- Locations	Bulk density: 0.00124 to 0.00306 gm/cm3; pH range 6.91 to 8.81; Electrical conductivity (EC); 157.2 to 237.5 µmhos/cm; calcium content: 22.38 to 30.71 mg/kg; sodium: 1.56 to 3.28 mg/kg; potassium: 65.18 to 79.68 mg/kg; Nitrogen: 78.46 to 120.68 mg/kg; Phosphorous: 7.45 to 10.52 mg/kg; Magnesium: 2.1 to 5.57 mg/kg; Organic Matter: 0.54 to -1.67 %
Flora & Fauna	**Schedule-I species observed in the study area:** *Rusa unicolor, Canis aureus, Panthera pardus, Felis chaus, Paradoxurus hermaphroditus, Viverricula indica, Melursus ursinus, Accipiter nisus, Anhinga melanogaster, Spilornis cheela, Aythya farina, Bubo bengalensis, Ciconia episcopus, Circaetus gallicus, Circus aeruginosus, Pavo cristatus, Hieraaetus pennatus, Leiopicus mahrattensis, Neophron percnopterus, Nettapus coronandelianus, Ocyceros birostris, Pandion haliaetus, Pernis ptilorhynchus, Tringa nebularia, Tyto javanica, Lissemys punctata, Trionyx gangeticus, Varanus bengalensis, Python molurus, Eryx conicus, Eryx johnii, Ptyas mucosa, Amphiesma stolata, Xenochrophis piscator, Bungarus*

	caeruleus, Naja naja, Naja naja Oxiana, Echis carinatus, Vipera russelli etc.

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

The total quantity of muck generated from soil and rock excavation is about 10.24 Mcum out of which about 4.10 Mcum is expected to be utilized for Rockfill and as aggregate for construction. Total quantity of muck proposed to be disposed in designated muck disposal area, after considering 40% swelling factor would be 8.60 Mcum. The entire unused excavated material is proposed to be dumped at identified location specifically for this purpose.

xx. **The salient features of the project are as under:**

- **Project details:**

Name of the Proposal	Indirasagar-Omkareshwar on-stream Pumped Storage Project (8x80MW= 640 MW)
Proposal No.	IA/MP/RIV/576898/2026
Location (Including coordinates)	Village- Narmada Nagar, Tehsil- Punasa, District- Khandwa, Madhya Pradesh
Company's Name	NHDC LIMITED
CIN no. of Company/user agency	U31200MP2000GOI014337
Accredited Consultant and certificate no.	M/s. Centre for Envotech and Management Pvt. Ltd. Certificate No: NABET/EIA/25-28/RA 0392
Project location (Coordinates /River/ Reservoir)	Latitude: 22° 17' 00" N Longitude: 76° 28' 00" E
Inter-state issue involved	NA
Proposed on River/ Reservoir	Indirasagar & Omkareshwar Reservoir
Type of Hydro-electric project	Pumped Storage Project
Seismic zone	III

- **Category details:**

Category of the project	Category-A, (As per notification ≥ 50 MW hydroelectric power generation)
Capacity/Cultural command area (CCA)	640 MW Power Generation
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	NA

- **ToR/EC Details:**

ToR Proposal No.	IA/MP/RIV/508766/2024
EAC meeting date	19.12.2024
ToR Letter No.	J-12011/31/2024-IA.I(R)
ToR grant Date	11.01.2025
Cost of Project	Rs. **5243.19** Crore
Total area of Project	198.0 Ha
Height of Dam from River Bed (EL)	NA, the project utilizes existing Indirasagar-Omkareswar reservoir & doesn't involve construction of new dam.
Details of submergence area	Nil
District to provide irrigation facility (if applicable)	NA
Details of tunnels on upper level & lower level and length of canal (if applicable)	*Pressure Shaft*- 249 m to 363 m HRC- 445.43 m TRT- 142-210 m
No. of affected Village.	Nil
No. of Affected Families	Nil
Project Benefits	From an electricity system perspective, pumped storage projects provide large-scale energy storage and respond rapidly to fluctuations in demand. Their ability to ensure immediate power supply and manage peak loads enhances grid reliability and operational flexibility, especially in scenarios where the share of variable renewable energy, such as solar and wind, is increasing.
R&R details	NA
Catchment area/ Command area	NA
Types of Waste and quantity of generation during construction/ Operation	Spoils/mucks may appear from the excavation activities like rock excavation, removal of over burden for Inlet weir, Forebay, TRT outlet area, upper and lower Inlet and Outlet structure, Pressure shaft, Erection chamber, Adit and Power house area etc. Solid wastes will be generated 10235690 m^3. The construction activities such as cement slurry from mixer machines; residuals of air-water jetting and periodic maintenance of vehicles etc., will be led to a settling pond for

	appropriate treatment before releasing to the nearest water body.
Material used for blasting and its composition as per DGMS standards.	Controlled blasting using slurry explosives/emulsion explosives, detonators as per Directorate General of Mines Safety (DGMS) guidelines & approved blasting plan.
E-Flows for the Project	No dam or barrage is proposed to be constructed, nor is any new reservoir being created under the proposed Indirasagar–Omkareshwar Pumped Storage Project. The project utilizes the already existing reservoirs of the Indirasagar and Omkareshwar Hydropower Projects. Therefore, the e-flow conditions applicable to new river valley projects are not directly relevant to the proposed Indirasagar–Omkareshwar Pumped Storage 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.	30% in monsoon season, 20% in lean season and 25% in non-monsoon & non-lean season, to be followed corresponding to flow of 90% dependable year.
Details on provision of fish pass	NA, The proposed PSP utilizes to existing reservoirs & doesn't involve construction of any new dam, barrage across the river channels.
Project benefit including employment details (no of employee)	The project will add 640 MW of flexible peaking capacity & provide grid balancing support for integration of renewal energy. The project will improve grid stability, frequency, regulation, energy storage capability & enhance energy security. Significant direct & indirect employment will be generated during construction & operation phases.

Area of Compensatory Afforestation (CA) with tentative no of plantation.	4,00,000 Nos.
Previous EC details	NA
EC Compliance Report by R.O, MOEF&CC	NA
No. of tree/ saplings proposed in view of Ek Ped Maa Ke Naam' campaign	1,15,200 Nos.

- **Electricity generation capacity:**

Powerhouse Installed Capacity	640 MW
Generation of Electricity Annually	1472.58 MU
No. of Units	08

- **Muck Management Details:**

No. of proposed disposal area/ (type of land-Forest/Pvt. land)	The total quantity of muck generated from soil and rock excavation is about 10.24 Mcum, out of which about 4.10 Mcum is expected to be utilized for Rockfill and as aggregate for construction. Total quantity of muck proposed to be disposed in designated muck disposal area, after considering 40% swelling factor would be 8.60 Mcum. The entire unused excavated material is proposed to be dumped at identified location specifically for this purpose.
Cross section of proposed muck area, Height of muck with slope.	

Section	RD (m)	Area of Cross section (Sqm)	Quantity (Cum)
	0.00	0.00	
2-2	100.00	2597.15	86571.67
3-3	200.00	6813.74	453919.59
4-4	300.00	8512.30	764728.41
5-5	400.00	8876.64	869383.38
6-6	500.00	8317.63	859562.01
7-7	600.00	6605.67	744522.99
8-8	700.00	6511.39	655847.35
9-9	800.00	10227.75	829994.35
10-10	900.00	12915.13	1154534.66

	11-11	1000.00	16705.33	1476964.74
	12-12	1100.00	6412.74	1115609.48
		1222.17	0.00	261148.15
			Total Quantity	9272786.77

Distance of muck disposal area(location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.	14 Km
Total Muck Disposal Area	37.48 Ha.
Estimate Muck to be generated	10.24 MCum
Transportation	
Monitoring mechanism for Muck Disposal Transportation	Muck disposal at designated place will be monitored periodically by the project authority.

- **Land Area Breakup:**

Private land	-
Government land	-
Forest Land	198 Ha.
Total Land	198 Ha.
Submergence area/Reservoir area	Nil
Additional information (if any)	NA

- **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	Two Reserve Forests i.e. Chandgarh Reserve Forest & Punasa Reserve Forest are located within 10 km of project area.
National Park	No	No National Park within 10 km radius of the project
Wildlife Sanctuary	No	Nil
Archaeological sites monuments/historical temples etc	No	Nil
Additional information (if any)	No	NA

- **Public Hearing (PH) Details**

Advertisement for PH with date	06.02.2026 & 08.02.2026
Date of PH	12.03.2026
Venue	The venue for the public hearing was Kala Bhavan, Narmada Nagar.
Chaired by	Chaired by Shri K. R. Badole, Additional District Magistrate, Khandwa.
Main issues raised during PH	Issues Related to Employment, Skill Development, Health and Sanitation and Environment
No. of people attended	72

- **Brief of base line Environment:**

Particulars	**Details**
Period of baseline data collection/ Sampling period.	December, 2024 to September, 2025
(Air, noise, water, land)	1st Dec 2024 to 28th Feb 2025 and 1st Mar 2025 to 31st May 2025
flora and fauna of the project area,	09th Feb 2025 to 17th Feb 2025 18th Apr 2025 to 27th Apr 2025 07th Aug 2025 to 14th Aug 2025
aquatic ecology, etc.	
Brief description on hydrology and water assessment as per the approved Pre-DPR:	The Indirasagar–Omkareshwar Pumped Storage Project shall utilize the existing Indira Sagar reservoir as the upper reservoir and the existing Omkareshwar reservoir as the lower reservoir, both of which are already operational. As the project does not involve the construction of any new dam or creation of additional storage, the hydrological assessment relies entirely on the well-established data sets of the two reservoirs. The Hydrology Directorate of CWC examined the hydrological inputs submitted for the PSP and conveyed that no fresh hydrological studies are required since the reservoirs have been in operation since 2005 and

	2007 respectively, and their hydrological characteristics are fully documented.
Additional detail (If any)	NA

- **Court case details: Nil**

- **Status of other statutory clearances:**

Particulars	**Letter no. and date**
Status of Stage-I FC	The application for obtaining Stage I FC for 198 Ha of forest land involved in the project has been submitted by vide Proposal No-FP/MP/HYD/IRRIG/539829/2025 and is Pending with Regional Office, MoEFCC-HQ.
Approval of Central Water Commission	No fresh hydrological study is required for this project since both reservoirs are already existing as per Letter no. T-11039/1/2023-HYD(C) DTE, Dated 28.03.2024 of CWC.
Approval of Central Electricity Authority	Obtained from Ministry of Power, Govt. of India provided clearance for preparation of DPR vide letter no. CEA-HY-12-12/9/2023-HPA Division, dated 22.03.2024.
Additional detail (If any)	NA
Is FRA (2006) done for FC-I	Under Progress

- **Details of the EMP:**

Activities	**Capital cost (Lakhs)**	**Recurring cost (Lakhs/annum)**
Wildlife Management Plan	1112.713	-
Fisheries Management Plan	97.0	-
Muck Management Plan	1526	-
Sanitation & Solid Waste Management Plan	229.2	-
Public Health Delivery System	340.0	-
Compensatory Afforestation (including NPV)	4659.0	-

Disaster Management Plan	430.0	-
Watershed Management Plan	764.28	-
Greenbelt and Landscaping Development Plan	300.0	-
Energy Conservation Measures	78.0	-
Labour Management Plan	79.0	-
Training & Awareness Program	2.0	-
Environmental Monitoring	66.6	-

56.1.3 The EAC during deliberations noted the following:

- The EAC deliberated on the information submitted and presented during the meeting. It was observed that the proposal is for the grant of Environmental Clearance (EC) to the project for Indirasagar-Omkareshwar Pumped Storage Project (8x80= 640 MW) Near Village- Narmada Nagar, Tehsil- Punasa District- Khandwa, Madhya Pradesh of M/S NHDC limited.

- The project is listed under item 1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification, 2006, as amended as a Category 'A' project, which requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

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

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

- The committee observed that earlier MoEF&CC had granted Terms of Reference (ToR) on 11.01.2025. Thereafter, the Public Hearing for the project was conducted in 12.03.2026.

- The EAC noted that the Indirasagar–Omkareshwar Pumped Storage Project will utilize the existing Indira Sagar reservoir as the upper reservoir and the existing Omkareshwar reservoir as the lower reservoir, both of which are already operational. Since the project does not involve the construction of any new dams or the creation of additional storage, the hydrological

assessment relies entirely on the well-established datasets of the two reservoirs.

- The EAC Noted that Narmada Valley Development Authority, Govt. of Madhya Pradesh vide their letter no. 2025/94 dt. 07.03.2025 has permitted Non-Consumptive Cyclic use of 31.855 MCM of water per day to NHDC Ltd for Indirasagar-Omkareshwar (640MW) Pumped Storage Project. The EAC also noted that the Letter of Pump Hydro Storage Site Allotment (LOPSA) was granted to NHDC Ltd by Office of the Commissioner, New & Renewal Energy (Govt. of M.P.), Bhopal vide letter No. F/NRE/23-24/05-102/238, dated 07.06.2023.

- The PP informed that there is no national park, wildlife sanctuary, Biosphere Reserve, Tiger/Elephant Reserve, and Wildlife Corridor etc. within 10 km distance from the project site. Two Reserve Forests i.e. Chandgarh Reserve Forest & Punasa Reserve Forest are located within 10 km of project area. The EAC also noted that Site-Specific Wildlife Conservation Plan is approved by PCCF, Wildlife & Chief Wildlife Warden, Madhya Pradesh vide letter no. 4028 dated 05.05.2026 and also the application for obtaining Stage I FC for 198 Ha of forest land involved in the project has been submitted by Project Proponent vide Proposal No-FP/MP/HYD/IRRIG/539829/2025.

- The EAC noted that the baseline data has been carried out from Dec, 2024 to Sep, 2025 and all the parameters are within the prescribed norms. Additionally, it was noted by the EAC that the total land requirement is about 198 ha of which entire land is forest land.

- The EAC noted that the Public hearing for the proposed project was conducted on 12.03.2026 at the Kala Bhavan, Narmada Nagar under the Chairmanship of Shri K. R. Badole, Additional District Magistrate, Khandwa. The Publications of notice for public hearing were given in state and newspapers namely "DAINIK BHASKAR NATIONAL – NAI DUNIYA on 06.02.2026 and "National Times of India, on 08.02.2026. The EAC discussed the concerns raised during the Public Hearing (PH) and reviewed the action plan submitted by the PP to address these issues. After detailed deliberation, the Committee found the action plan satisfactory, recognizing that the proposed mitigation measures adequately respond to stakeholder's concerns.

- The EAC noted that the Power Potential Studies chapter of the Indirasagar–Omkareshwar On-stream Pumped Storage Project (8 x 80 = 640 MW) was vetted by the CEA on 22.03.2024 for an installed capacity of 640 MW (generating mode), with an average design energy of 1,472.58 MU cycle efficiency of 76.31 % and generation of design energy of 277.25 MU.

- The EAC also noted that the CWC, vide letter dated 28.03.2024, intimated that since both reservoirs of the Indirasagar–Omkareshwar On-stream Pumped Storage Project already exist, no fresh hydrological studies are required for this project.

- The EAC observed that the proposed EMP financial outlay is ₹96.8379 crore, which includes a CA & NPV cost of ₹46.59 crore; however, the EAC opined that the CA cost must be excluded from the EMP Budget head.

- During the meeting, the EAC enquired about the availability of fish species and provision of fish pass in the project. In response, the PP informed that a fisheries Management plan has been prepared and will be implemented for conservation of Fishes available in reservoir area.

- During the meeting, the EAC observed that the 50.87 hectares of land required for the temporary stacking area is at higher side, considering that both reservoirs are already present. Therefore, this area should be minimized as much as possible.

- The EAC observed that periodic pumping cycles in the Pumped Storage Project can alter local hydrology, causing sediment disturbance that disrupt fish spawning and feeding. fluctuations in water temperature and dissolved oxygen levels can stress native fish and aquatic invertebrates, harming overall biodiversity. Therefore, formulate a plan to mitigate native fish species and macro-invertebrates from operational impacts.

- While deliberating on the Watershed Development Plan submitted by the project proponent and prepared by the accredited consultant, the Expert Appraisal Committee (EAC) examined the proposed interventions aimed at sustainable water resource management, groundwater recharge, soil and moisture conservation, and protection of local hydrological systems within the study area. The Committee noted that the plan has been prepared based on the hydrological characteristics of the region and incorporates appropriate measures for conservation, restoration, and augmentation of water resources. The EAC observed that the study area comprises several natural and man-made water bodies, drainage channels, and catchment areas that play an important role in maintaining the local ecological balance and groundwater regime. The Committee emphasized that all proposed watershed management activities shall be implemented in a time-bound manner through a well-defined action plan. The action plan should clearly specify the activities, implementation schedule, monitoring mechanism, and budgetary provisions to ensure effective execution and long-term sustainability of the proposed measures. The EAC further stressed that special attention shall be given to the conservation, rejuvenation, and protection of all local water bodies mapped within the study area, with periodic monitoring of their hydrological and ecological status. Adequate safeguards shall be adopted to prevent siltation, encroachment, contamination, and degradation of these water resources. The Committee also recommended that the effectiveness of the watershed interventions be periodically assessed through suitable indicators such as groundwater levels, water availability, recharge potential, and overall improvement in watershed health. After detailed deliberations, the EAC found the Watershed Development Plan to be comprehensive

and satisfactory, covering all essential components required for sustainable watershed management and conservation of water resources in the project area. The Committee, therefore, accepted the plan subject to its implementation in a time-bound and outcome-oriented manner as committed by the project proponent.

56.1.4: The EAC after examining the information submitted and detailed deliberations recommended the proposal for grant of Environmental Clearance to Indirasagar-Omkareshwar Pumped Storage Project (8x80= 640 MW) Near Village- Narmada Nagar, Tehsil- Punasa District-Khandwa, Madhya Pradesh by the M/s NHDC, under the provisions of EIA Notification, 2006, as amended subject to compliance of applicable Standard EC conditions along with the following specific conditions:

[A] Environmental management and Biodiversity conservation:

i. The project proponent shall implement a comprehensive water-flow management plan to minimize alterations to local hydrological conditions caused by periodic pumping cycles between the two reservoirs.
ii. The project proponent shall minimize this temporary stacking area to the maximum extent possible.
iii. The project proponent shall minimize this temporary stacking area to the maximum extent possible.
iv. The water of rainfall yield of self-catchment of the reservoir shall be released to downstream through body of dam/ barrage/ embankment etc
v. The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. The budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also be updated proportionately.
vi. The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.
vii. Ambient Air Quality Monitoring Stations for real time data to be installed at project site before commencement of the construction, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.
viii. No vehicle purchase shall be allowed from funds earmarked for implementation of Wildlife Conservation plan. Measures for minimizing the human–animal conflict specially for black bear and leopard be suitably incorporated in the wildlife conservation plan in consultation with State Forest Department.
ix. Dense plantation should be done in and around the muck disposal area in consultation with local Forest Department and the survival of plants shall be submitted with the 6 monthly compliance report.

x. Watershed development plan prepared shall be implemented within 10 km radius of the project. Implementation status be submitted in the 6 monthly compliance report to the concerned regional office of the Ministry.

[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. RO plant shall be installed in the nearby tribal villages and the maintenance shall be done by the project Authorities.
ii. School up to 12^{th} Standard shall be established to provide free quality education for children from Tribal villages.
iii. 50 bed multi-speciality hospital shall be established to cater the need of tribal population/locals. The tribal population within 10 km radius of the project shall be given free of cost medical facility.
iv. 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 population.
v. Solar panel be provided to the families living in rural areas within 10 km radius of project.
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.

[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. Bio-Gas plant (Deenn Bandhu Model of Bio-Gas) shall be installed in the Project affected area for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.
iii. A separate Environmental Management Cell, under the supervision of a Environment Manager having Post Graduate qualification in Environmental Sciences/ Environmental Engineering shall be established, equipped with full-fledged laboratory facilities shall be set up both at the project and company headquarter levels to carry out Environmental Management activities. The Environment Manager shall report directly to the Head of the Organization/Head of the Project.

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

Agenda Item No. 56.2

Munjari Irrigation Project (CCA: 11575 Ha) in Sub District Badoda and Karahal, Sheopur, Madhya Pradesh by M/s Madhya Pradesh Water Resources Department - Environmental Clearance (EC) - reg.

[Proposal No. IA/MP/RIV/525632/2025; F. No. J-12011/07/2019-IA.I(R)]

56.2.1: The proposal is for grant of Environmental Clearance (EC) to the project for Munjari Irrigation Project (CCA: 11575 Ha) Sub District Badoda and Karahal, Sheopur, Madhya Pradesh by M/s Madhya Pradesh Water Resources Department.

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

i. Munjri Irrigation Project, a major irrigation project, has been conceptualized as a critical infrastructure initiative aimed at harnessing the water potential of the region to bridge the irrigation gap. Munjri project is aligned with the broader objective of maximizing irrigation coverage in the state, while also addressing water-sharing and environmental considerations

related to interstate river systems.

ii. The project is proposed by Madhya Pradesh Water Resources Department to cater the need of farmers in Karahal and Badoda tehsil of Sheopur district. The dam under Munjri Irrigation Project is proposed to be constructed on Aheli river near Munjri village in Karahal tehsil of Sheopur district in Madhya Pradesh. Purpose of the dam is to store water during monsoon season and serve the command of 11,575 ha CCA during Rabi season.

iii. The committee discussed the proposal for grant of Environmental Clearance in its 39th EAC meeting held on 12.09.2025 and the EAC noted that the Project Proponent (PP) had not shared complete and proper documents prior to the meeting, which constrained the Committee from adequately understanding key components of the proposal. While enquiring about the concurrence of CWC for the project, the Committee observed that no clear response was provided by the PP. The EAC therefore decided to defer the proposal.

iv. The project envisages construction of 7380 m long composite dam comprising of 7279.74 m long earthen dam with maximum height of 27.99 m; 63 m central ogee shaped spillway fitted with four 12 mx8.0m radial gates with crest level at El.285.00m; non-overflow dam section 18.63 m long on either side of spillway. It is designed for gross and live storage of 56.30 MCM and 54.62 MCM respectively at FRL 293.00 m for providing Rabi irrigation to command area of 11575 ha (CCA) in 34 villages of draught prone Badoda and Karahal Tehsils, through a well-planned network of 2 rising main of total length 4.3 km long and 6 km gravity mains and pressurized pipe irrigation network. Proposed irrigation under Rabi shall be 11575 ha which includes 6000 ha Wheat Hybrid (3MV) and 5300 ha Gram and 275ha oil seeds.

v. The project proposal was considered by the Expert Appraisal Committee (Hydro River Valley Sector) in its 26th meeting, dated 20th August 2019 and recommended for grant of Terms of References vide letter No. J-12011/07/2019-IA-1(R), dated 27.11.2019.

vi. The geographical co-ordinates of the project are:

Reservoir Coordinates:

25° 22' 59.88" N 76° 47' 37.14" E

25° 23' 38.79" N 76° 48' 40.60" E

25° 24' 39.04" N 76° 49' 00.41" E

25° 24' 23.64" N 76° 48' 10.32" E

Composite Dam Structure:

25° 24' 46.13" N 76° 47' 05.62" E

25° 24' 05.40" N 76° 46' 07.34" E

25° 23’ 27.00” N 76° 46’ 46.40” E

25° 22' 54.37" N 76° 46' 05.42" E

25° 22' 45.80" N 76° 47' 20.66" E

vii. **Project description:** The Munjari Irrigation Project envisages construction of 7380 m long composite dam comprising of 7279.74 m long earthen dam with maximum height of 27.99 m; 63 m central ogee shaped spillway fitted with four 12 mx8.0m radial gates with crest level at El.285.00m; non-overflow dam section 18.63 m long on either side of spillway. It is designed for gross and live storage of 56.30 MCM and 54.62 MCM respectively at FRL 293.00 m for providing Rabi irrigation to command area of 11575 ha (CCA) in 34 villages of draught prone Badoda and Karahal Tehsils, through a well-planned network of 2 rising main of total length 4.3 km long and 6 km gravity mains and pressurized pipe irrigation network. Proposed irrigation under Rabi shall be 11575 ha which includes 6000 ha Wheat Hybrid (3MV) and 5300 ha Gram and 275ha oil seeds. The project is likely to be completed in timeframe of three years. The cost of project is Rs 414.79 Crores only. The benefit-cost ratio of project is 1.6:1.

viii. **Land Requirement:**

Total land required of the project is 1043.0890 ha (Forest: 740.1592 ha; non-forest: 302.9298 ha). The non-forest land is comprised of 52.9404 ha Government land and 249.9 894 ha private land of which 99.075 ha shall be permanently acquired and balance 150.9144ha shall be taken on temporary. The private land shall be acquired as per provisions of RFCTLARR Act, 2013. The process of land acquisition is under progress.

ix. **Demographic Details in 10 km radius of Project Area:**

As per the Census of India 2011, the total population of study area villages comprising of total 13131 households is 65273 composed of 34047 males and 31226 females with sex ratio of 917.The cast wise composition of the total population of the project affected villages is made up of scheduled cast population of 7922 (12.14%) and Scheduled Tribe population of 23673 (36.27%). The literate population is 28114 (52.16%) of which the male and female population is 17753(63.35%) and 10361 (40.04%) respectively. The gender gap for literacy rate is 23.31 %. The total working population is 26454 (40.53%) which comprises of main workers 15729(24.10%) and marginal workers 10725(16.43%).

x. **Water Requirement:**

The quantity of water required during construction is estimated as 150 kld (Construction-138 kld; Domestic-12 kld) which shall be drawn from **Aheli River**. Water can be pumped and stored in a tank at higher elevation.

xi. **Project Cost:**

The estimated project cost is Rs 414.79 crores. The total capital cost earmarked towards the environmental management plan is Rs 42.65 crore and the Recurring cost (operation and maintenance) will be about Rs 0.74 crore per annum.

xii. **Project Benefit:**

Project benefits inter alia shall include the benefits like (i) Increase in irrigation potential (7075ha); (ii) Sustained Water Availability for Agriculture and drinking (54.62MCM); (iii) Increased Green cover (48ha /52800 saplings) and (iv)Employment Potential (250 labour and 204 fisherman) and (v) Recharge of ground water from reservoir (1.49 MCM).

xiii. **Environmental Sensitive Area:**

No National Park, Sanctuary, Defense Establishments, Archaeological Monuments, Notified Eco-sensitive areas or protected areas under Wildlife (Protection) Act exists within the project area or within 10 km distance from it. Nearest Protected Area is Kuno wildlife Sanctuary, which is situated at distance about 50 km from the project components.

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.

xiv. **MoU / Any Other Clearance/ Permission Signed with State Government:**

The Administrative Approval granted to the project by State Government of Madhya Pradesh.

xv. **Resettlement and Rehabilitation:**

No R&R issue is involved. For the project 99.075 ha private land shall be acquired only and there will be no displacement of any family. Therefore, neither any Rehabilitation and Resettlement Plan formulated, nor any resettlement colony needs to be developed.

xvi. **Scheduled –I Species:**

Mammalian Species: Fox (*Vulpes bengalensis)*, Porcupine (*Hystrix indica*) and Mongoose (*Herpestes edwardsii*)

Herpetofauna Species: Python (Python molurus) and Indian Monitor lizard (*Varanus bengalensis*)

Avifauna species: Peafowl (*Pavo cristatus*)

xvii. **Alternative Studies:**

Three alternative locations for locating dam axis were studied. Alternate alignment No.1 is located at 1.1715 km upstream of the proposed site. In this proposal villages Bukhari, Chak Majidpur were coming under submergence, the reservoir gross capacity is the least and the proposed CCA shall be the least, besides R&R aspects are involved. Alternate alignment No.2 is located at 735 m upstream of proposed site along the river. In this proposal the capacity of dam is less than the proposed site, further prima facie only Bukhari village will come under submergence. Alternate alignment No.3 is located across deep gorge and riverbed. The

available flank impounds 56.247 MCM of water. But comparatively slightly larger forest comes under submergence as compared to Alignment no. 2. Considering the Geological conditions, Submergence area, Water impoundment capacity, Displacement of people, Alternative-3 appeared to be most suitable for constructing the composite dam.

xviii. **Baseline Environmental Scenario:**

Period	Monsoon-2019, Winter2019-20, Pre-monsoon 2020 Additional Season Pre-monsoon 2025.
AAQ parameters at 6 locations (minimum & maximum)	PM_{10}: 16.1 to 69.8µg/m^3 $PM_{2.5}$: 7.0 to 32.3µg/m^3 SO_2: <5.0µg/m^3 to 9.5µg/m^3 NOx: <7.0to 16.0µg/m^3
Incremental GLC Level	PM_{10}: Max. GLC: 19.0 µg/m^3 $PM_{2.5}$: Max. GLC: 1.69 µg/m^3 SO_2: Max. GLC: 0.63 µg/m^3 NOx: Max. GLC:3.8 µg/m^3
River water samples at 4 locations	pH: 7.2 to 7.8, Dissolved Oxygen: 5.8 to7.6mg/l, Total Dissolved Solids: 141to 228mg/l, Total Hardness (as $CaCO_3$): 92.8 to 147.1mg/l, Total Alkalinity (as $CaCO_3$): 49 to 134 mg/l, Calcium (as Ca): 21.2 to 34.5 mg/l, Magnesium (as Mg): 9.0 to 16.3 mg/l, Oil and Grease: <1mg/l, Sulphate (as SO_4):1.1 to 2.7 mg/l, Nitrate (as NO3) : 9.8 to 27.2 mg/l, Chloride (as Cl): 28.9 to 57.3mg/l, Iron (as Fe): 0.15 to0.25mg/l, BOD: 2.0 to 6.6mg/l, Copper (as Cu): <0.01 mg/l, Lead (as Pb): <0.01mg/l, Cadmium (as Cd): <0.003mg/l, Chromium (as Cr): <0.05mg/l, Manganese (as Mn): <0.05mg/l, Arsenic (as As): <0.01mg/l, Mercury (as Hg): <0.001mg/l
Pond water samples at 1 location	pH: 7.3 to 7.8, Dissolved Oxygen: 6.0 to 7.2mg/l, Total Dissolved Solids: 47to 134mg/l, Total Hardness (as $CaCO_3$):73.6 to 85mg/l, Total Alkalinity (as $CaCO_3$):29 to 80 mg/l, Calcium (as Ca):17.8 to 20.8 mg/l, Magnesium (as Mg):6.8 to 7.9 mg/l, Oil and Grease: <1mg/l, Sulphate (as SO_4):1.2 to 1.8 mg/l, Nitrate (as NO3): 18.3 to 24.2 mg/l, Chloride (as Cl): 25.6 to 40.8mg/l, Iron (as Fe):0.03 to 0.25mg/l, Copper (as Cu): <0.01 mg/l, Lead (as Pb): <0.01mg/l Cadmium (as Cd): <0.003mg/l, Chromium (as Cr): <0.05mg/l, Manganese (as Mn): <0.05mg/l, Arsenic (as As): <0.01mg/l, Mercury (as Hg): <0.001mg/l
Ground Water samples at 6 locations	pH: 7.0 to 7.7, Total Dissolved Solids: 482.4 to 1145.7mg/l, Total Hardness (as $CaCO_3$):70.9 to 308mg/l, Total Alkalinity (as

	$CaCO_3$): 68.4 to 248 mg/l, Calcium (as Ca): 30.8 to 40.1mg/l, Magnesium (as Mg): 15.1 to24.6 mg/l, Oil and Grease: :<1mg/l, Sulphate (as SO_4):9.8 to 68.4 mg/l, Nitrate (as Na):3.8 to 22.4 mg/l, Chloride (as Cl): 24.5 to 80 mg/l, Iron (as Fe) : 0.1 to 0.24mg/l, Copper (as Cu): <0.01 mg/l, Lead (as Pb): <0.01mg/l, Cadmium (as Cd): <0.003mg/l Chromium (as Cr): <0.05mg/l, Manganese (as Mn): <0.05mg/l, Arsenic (as As): <0.01mg/l, Mercury (as Hg): <0.001mg/l
Noise levels Leq (Day & Night) at 6 locations	Residential Area Leq. (Day): 44.9 to 48.7 dB (A) Residential Area Leq. (Night): 36.7 to 38.5 dB (A) Commercial Area Leq. (Day): 47.1 to 55.4 dB (A) Commercial Area Leq. (Night): 39.3 to 42.2 dB (A)
Soil Quality at 6 locations	Bulk density:1.24 to1.45 gm/cc, pH range: 7.1-to7.8, Electrical conductivity (EC); 119.6 to 280 µmhos/cm, Calcium content: 725 to 980mg/kg; Sodium:59 to 78 mg/kg, Potassium: 133 to 234 mg/kg; Nitrogen:178 to 238 mg/kg, Phosphorous: 21.1 to 26.9 mg/kg; Cation Exchange Capacity (CEC):7.9 to 11.0 meq/100gm, Magnesium: 302.1 to 545mg/kg, Organic Carbon:0.62 % to 0.80 %
Flora & Fauna	Schedule-I species observed in the study area: Fox (*Vulpes bengalensis)*, Porcupine (*Hystrix indica*) and Mongoose (*Herpestes edwardsii*), Python (*Python molurus*) , Indian Monitor lizard (*Varanus bengalensis*) and Peafowl (*Pavo cristatus*)

xix. **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 3.78 Ton/annum and 0.72 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 (2ton/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 531312 cum, of which 321619 cum shall be consumed on project work and balance 209693 cum shall be used in backfilling of borrow area for earthen material for dam.

xx. **Public Hearing:** Public Hearing for the proposed project has been conducted by the State

Pollution Control Board on 24.03.2022. The main issues raised were (i) unawareness about details of land coming under submergence (ii) Houses getting sunder submergence (iii) demand for implementing project since, 1970.

xxi. **Status of Litigation Pending Against the Proposal, if any.** None

xxii. **The Salient Features of the Project are as below:**

- **EAC Meeting Details:**

EAC meeting/s	56th EAC Meeting
Date of Meeting/s	08.06.2026
Date of earlier EAC meetings	39th EAC Meeting held on 12.09.2025

- **Project Details:**

Name of the Proposal	Munjri Irrigation Project (11575ha) Sheopur District, Madhya Pradesh
Proposal No.	IA/MP/RIV/525632/2025
Location (Including Coordinates)	Village Bukhari, Tehsil Karahal, District Sheopur, Madhya Pradesh. Dam: $25^0$23’27” N, $76^0$46’46.4” E
Company’s Name	Madhya Pradesh Water Resources Department
Accredited Consultant and certificate no.	M/s Voyants Solutions Pvt. Ltd. NABET/EIA//25-28/RA 0416, Dated: March 13, 2025, Valid till March 13, 2028
Inter- state issue involved	Yes
Proposed on River/ Reservoir	Aheli River
Type of Hydro-electric project	It is not HEP. Storage dam for Irrigation only.
Seismic zone	Zone II

- **Category Details:**

Category of the project	B
Capacity / Cultural command area (CCA)	11575 ha
Attracts the General Conditions (Yes/No)	Yes

- **ToR/EC Details:**

ToR Proposal No.	IA/MP/RIV/101717/2019

EAC meeting date	26th EAC meeting dated 20th August, 2019		
ToR Letter No.	J-12011/07/2019-IA-1(R), dated 27.11.2019		
ToR grant Date	27.11.2019		
Cost of project	Rs. 414.79 Crores		
Total area of Project	1043.089 ha		
Height of Dam from Riverbed (EL)	29.5m		
Details of submergence area	The submergence area is 838.116 ha (Forest land: 695.0854 ha; Non-Forest: 143.0322 ha).		
District to provide irrigation facility (if applicable)	District Sheopur (i) Badoda Tehsil: 29 villages (CCA - 9825 ha) (ii) Karahal Tehsil: 5 villages (CCA - 1750 ha)		
Details of tunnels on upper level & lower level and length of canal (if applicable)	No tunnel is involved. The micro irrigation project envisages construction of 7380 m long composite dam comprising of 7279.74 m long zonal earthen dam with maximum height of 27.99 m; 63 m central ogee shaped spillway fitted with 12 m x 8.0 m four radial gates; non-overflow dam section 18.63 m long on either side of spillway. Total length of Rising mains =10.407 km Total length of distribution system =295.666 km		
No. of affected Village.	One (1-Bukhari Village)		
No. of Affected Families	PAF:129, but no family shall be displaced		
Project Benefits	(i) Increase in irrigation potential (7075ha); (ii) Sustained Water Availability for Agriculture and drinking (54.62MCM); (iii) Increased Green cover (48ha / 52800 saplings); (iv) Employment Potential (250 labour and 204 fisherman) and (v) Recharge of ground water from reservoir (1.49 MCM)		
R&R details	For the project 99.075 ha private land shall be acquired only and there will be no displacement of any family. Therefore, neither any Rehabilitation and Resettlement Plan formulated, nor any resettlement colony needs to be developed.		
Catchment area/ Command area	Catchment area: 300.71 sq. km. Command Area: 11575 ha		
Types of Waste and quantity of generation during construction/Operation	**Waste**	**Construction TPA**	**Operation TPA**
	MSW	3.78	0.72
	Plastic	0.50	0.10

	Burnt OIL	2.00	0.00
	E-waste	0.05	0.00
Material used for blasting and its composition as per DGMS standards	Ammonium Nitrate Fuel Oil (ANFO), a mixture of ammonium nitrate and fuel oil.		
E-Flows for the Project	The river is an ephemeral in nature and flows in direct response to precipitation. It is proposed to release entire average annual non-monsoon inflows of 1.49 MCM throughout the year and 14.864 MCM during monsoon months (June to Oct) as average spills to take care of environmental flows and downstream uses.		
Is Projects earlier studied in Cumulative Impact Assessment & Carrying Capacity studies (CIA & CC) for River in which project located. If yes, then c) E-flow with TOR/Recommendation by EAC as per CIA&CC study of River Basin. d) If not the E-Flows maintain criteria for sustaining river ecosystem.	No The river is ephemeral and flows in direct response to precipitation. The river flows during June to October only. It is proposed to release entire average annual non-monsoon inflows of 1.49 MCM throughout the year and 14.864 MCM during monsoon months (June to Oct) as average spills to take care of environmental flows.		
Details on provision of fish pass	Fish pass/ladder not provided in design of dam because of height of dam (29.75m). However, management of fish stocks in reservoir shall be undertaken by implementing Fisheries Management Plan		
Project benefit including employment details (no of employee)	During the construction phase, 25 permanent employees and 250 temporary/contractual workers will be employed for a period of 3 years. During the operation phase, a total of 25 permanent employees and 5 temporary workers will be employed for 365 days per year		
Area of Compensatory Afforestation (CA) with tentative no of plantation.	746.343 Ha area shall be approximately planted with 746000 plants @1000 plants /ha. An amount of Rs. 37.54 Crore has been earmarked for CA Scheme. However, the cost for scheme duly approved by the Forest Department shall be deposited with the Forest Department.		
Previous EC details	None, as EC is yet to be granted		
EC Compliance Report by R.O, MOEF&CC	Not applicable		

No. of trees/saplings proposed in view **of 'Ek Ped Maa Ke Naam' campaign**	An area of 746.343 ha non-forest land is proposed for Compensatory Afforestation scheme. As general guidelines 1000 tress can be planted on 1 hectare land. So, the number of trees shall be planted are 746000. Moreover, trees shall be planted in the catchment area treatment plan, Green Belt Development and Reservoir Rim Treatment Plan

- **Electricity Generation Capacity – Nil**

- **Muck Management Details:**

No. of proposed disposal area/ (type of land- Forest/Pvt land)	None
Cross section of proposed muck area, height of muck with slope.	NA
Distance of muck disposal area (location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.	NA
Total Muck Disposal Area	0.00
Estimate Muck to be generated	Muck to be generated: 531312 cum Quantity Used: 531312 cum (Dam: 256619 cum, Road work: 65000cum and Backfilling :209693 cum)
Transportation	By road
Monitoring mechanism for Muck Disposal	NA

- **Land Area Breakup:**

Private land	99.075 ha
Government land	52.9404 ha
Forest Land	740.1592 ha
Total Land	892.1746 ha
Submergence area/Reservoir area	838.1167ha
Additional information (if any)	Besides 838.1176 ha permanent acquisition /transfer of land, 150.9144ha shall be taken on

	temporary lease for laying pipeline and RoW for transmission line.

- **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	Munjri RF, Bukhari RF and Bardha RF
National Park	No	There is no notified Protected Area is the vicinity of the proposed project. Nearest Protected Area is Kuno wildlife Sanctuary, which is situated at distance about 50 km from the project components.
Wildlife Sanctuary	No	
Archaeological sites monuments/ historical temples etc	No	No archaeological monument of national importance lies either in the project area or in its submergence area. There is also no structure of national heritage in the area.

- **Public Hearing (PH) Details:**

Advertisement for PH with date	"Times of India" (English) on 19.2.2022 and Hindi newspaper
Date of PH	24th March 2022
Venue	Panchayat Bhawan, Village Bukhari, Tehsil Karahal, District Sheopur
Chaired by	Deputy Collector, Sheopur
Main issues raised during PH	The main issues raised were (i) unawareness about details of land coming under submergence (ii) Houses getting sunder submergence (iii) demand for implementing project since, 1970.
No. of people attended	50

- **Brief of base line Environment:**

Period of baseline data collection/Sampling period.	Monsoon-2019, Winter2019-20, Pre-monsoon 2020 Additional Season Pre-monsoon 2025.

Air, noise, water, land	**Air:** In core zone the concentration of PM_{10} varied from 16.1 µg/m^3 to 48.8 µg/m^3; $PM_{2.5}$ varied from 7.0 µg/m^3 to 22.2µg/m^3; SO_2 varied from <5.0µg/m^3 to 8.50µg/m^3 and NOx varied from <7.0 µg/m^3 to 14.3 µg/m^3 and were within the NAAQS prescribed by CPCB. In buffer zone the concentration of PM_{10} varied from 20.5 µg/m^3 to 69.8 µg/m^3; $PM_{2.5}$ varied from 8.8µg/m^3 to 32.3µg/m^3; SO_2 varied from <5.0µg/m^3 to 9.5µg/m^3 and NOx varied from <7.0 µg/m^3 to 16.0 µg/m^3 and were within the NAAQS prescribed by CPCB. **Noise:** In buffer area**,** the maximum L-eq noise levels during day and nighttime recorded were 54.4 dB(A) and 42.2 dB(A) respectively and are within the prescribed limits of 65 dB(A) & 55 dB(A) for commercial area. In core area, the maximum L-eq noise levels during day and nighttime recorded were 48.7 dB(A) and 37.9 dB(A) respectively and are within the prescribed limits of 55 dB(A) & 45 dB(A) for commercial area. **Surface Water:** pH: 7.18 to 7.90; Dissolve Oxygen: 5.8 to 7.4 mg/l; Total Dissolved Solids: 47 to 228 mg/l; Total Hardness (as CaCO3): 73.6 to 147.1 mg/l; Calcium: 17.8 to 34.5 mg/l; Magnesium: 6.8 to 16.3 mg/l; Sulphate: 1.1 to 3.0 mg/l, Nitrate: 9.8 to 27.2 mg/l; Chloride: 25.6 to 57.3 mg/l; Iron: 0.15 to 0.25 mg/l; BOD:2.0 to 7.8 mg/l; Total Coliform 135 to 390 MPN/100ml.All physical and general parameters of ground water were observed within the desirable limit at all sampling locations as per IS10500:2012, Second Edition. The WQI for all analyzed surface water samples varied from 65 to 80.2 and is classified as good to excellent (WQI between 63-100). **Ground Water:** The pH 7.0 to 7.7; Total TDS 482.4 to 1145.7 mg/l; Total Hardness 70.9 to 308 mg/l; Chlorides 24.5 -80mg/l; Sulphates 9.8 – 68.4 mg/l; Nitrates 3.82 – 22.4 mg/l; Iron 0.10 – 0.24 mg/l. Fluoride 0.3 – 0.5 mg/l. Bacteriological studies reveal that no coliform bacterial are present.

	The heavy metal contents were observed to be below acceptable limits. All physical and general parameters were observed within the desirable limit as per IS10500:2012 (Second Revision). Based on the WQI for all analysed ground water samples it is classified as good (WQI 50-100) to excellent (WQ < 50). **Soil:** Bulk density: 1.24 to 1.45 gm/cm3; pH: range 7.1 to 7.82; Electrical Conductivity: 119.6 to 280 µS/cm; Potassium: 133 to 234 kg/hectare; Nitrogen: 178 to 238 kg/hectare; Phosphorous: 21.1 to26.9 kg/ha; Organic Carbon: 0.62% to 0.80% and SAR: 0.40 to 0.60. The soil fertility based upon Nutrient Index in terms of NPK for all seasons of monitoring shows that nitrogen is in low range, potassium and phosphorus are in medium range. The organic Carbon for soil is in medium range.
Flora and Fauna of the project area,	**Flora:** In the study area 217 species of plants belonging to 89 families were recorded. These include 54 trees (23 families), 63 shrubs (32 families) and 100 species (34 families) of herbs grasses and climbers. Twenty economically important plants and twenty-two important medicinal/ethnobotanical importance plant species were recorded. No RET species falling under IUCN Red List was recorded/reported from study area. **Fauna:** The faunal study reveals that 7 mammalian species of which 3 species viz., Fox (*Vulpes bengalensis)*, Porcupine (*Hystrix indica*) and Mongoose (*Herpestes edwardsii*) belong to the schedule-I of Indian Wildlife Protection Act (1972), amended in 2022. Forty-eight avifauna species have been recorded /reported of which one (Indian Peafowl) belongs to Schedule-I. Four species of herpetofauna were recorded /reported of which two species (Python and Indian Monitor lizard) belong to Schedule-I. Four species of butterflies were recorded /reported of which none belong to Schedule-I.

Aquatic ecology, etc.	**Fishes:** Seven fish species were recorded/ reported of which none belong to Schedule-I.
Brief description on hydrology and water assessment as per the approved pre-DPR	Monthly weighted rainfall of Aoda dam site RG and Pohri RG station is applied to the derived runoff using rainfall runoff equations for the catchment of Munjri dam to arrive at the monthly series of runoff during monsoon months which on adding gives the yearly yield at the proposed dam site. The 50%, 75% and 90% dependable yields are 68.11MCM, 54.02MCM and 46.03 MCM respectively. The yield rate at 75% dependability is 0.18 MCM/sq km.
Additional detail (If any)	The Administrative Approval granted to the project by State Government of Madhya Pradesh.

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

Particulars	**Letter no. and date**
Status of Stage- I FC	The PP has moved online the application for Forest clearance for diversion of 740.159 ha vide proposal No. FP/MP/IRRIG/471582/2024, dated 03.05.2024. The Stage -1 clearance has been obtained on 15.04.2026.
Approval of Central Water Commission	Not Required.
Approval of Central Electricity Authority	Not required, as it is not a hydro-electric project
Is FRA (2006) done for FC-I	Yes.

- **Additional details:**

A. Site and land details (including DSS analysis, wherever applicable)		
1.	Location of the project	Village: Bukhari Tehsil: Karhal District: Sheopur State: Madhya Pradesh
2.	**Land details**: Total land area of the project & area of land acquired	Total land required of the project is 1043.0890 ha (Forest: 740.1592 ha; Non-forest: 302.9298 ha). The non-forest land is comprised of 52.9404 ha Government land and 249.9 894 ha private land of which 99.075 ha shall be permanently acquired and balance 150.9144

		ha shall be taken on temporary lease for laying pipelines and as right of way for transmission lines.
	In case the entire land is not acquired, adequate documents related to land acquisition are furnished (in terms of MoEF&CC O.M. dated 7/10/2014	Private land has not been acquired so far. It shall be acquired as per provisions of RFCTLARR Act, 2013 and as per provisions of "Consent Land Purchase Policy" vide GoMP order dated 12.11.2014 in which the required land is purchased by the Government with the Mutual Consent of the affected person. The process of land acquisition is under progress.
3.	Project site proximity to sensitive area i. Habitation ii. School iii. River/Waterbody iv. Forest v. Archaeological Survey of India (ASI) protected site vi. Any other	 i. Bukhari, Munjri village (~1 km) ii. Primary School (~1.5km) iii. Aheli River - 0.00 m iv. Munjri RF and Bardha RF v. No such site exists in project area or within 15 km vi. None
4	Whether adequate environmental safeguards provided to address the environmental concerns arising out of proximity to sensitive areas.	Yes, Conservation and Biodiversity Management Plan prepared and submitted to the department for approval.
5.	Involvement of Forest land if any. Status of FC land approval under Van (Sanrakshan Evam Samvardhan) Adhiniyam, 1980 as per Ministry's O.M. dated 9/9/2011 & its subsequent amendments	The PP has moved online the application for Forest clearance for diversion of 740.159 ha vide FP/MP/IRRIG/471582/2024, dated 3.5.2024. Stage-I Clearance has been obtained on 15.04.2026.
6	Any ESZ/ ESA/ national park/ wildlife sanctuary/ biosphere reserve/ tiger reserve/ elephant reserve etc. within 10 km radius of project site. Whether applied for SCNBWL as per MoEF&CC O.M. dated 17/05/2022	None Wildlife Clearance is not required
7	Critically Polluted Area/Severely Polluted	Not applicable

	a. Whether project located in CPA/SPA b. Distance of project from CPA/SPA c. Whether additional environmental safeguards have been proposed as per MoEF&CC O.M. dated 31/10/2019, 30/12/2019 & 05/07/2022	
8	Is there any requirement of CRZ?	No
B. Project details		
9	Whether R&R details incorporated (as applicable)	Since there is no displacement of any family involved, there is no case for evolving budget for R&R, as there will be no entitlement for R&R benefits as contained in Second Schedule to RFCTLARR Act, 2013. The component of compensation in respect of land to be acquired under the Act as contained in First Schedule has been elaborated under R&R Plan.
10	Water requirement and status of permission from the Competent Authority	The quantity of water required during construction is estimated as 150 KLD (Construction-138 KLD; Domestic-12 KLD) which shall be drawn from Aheli River. Water can be pumped and stored in a tank at higher elevation. Permission to use river water shall be taken from the MPWRD.
11	Employment opportunities	About 25 workers will be permanently employed during construction and operation of the project. Besides this about 250 workers shall be deployed on contractual basis by the turnkey contractor during construction
C. EIA report		
12	Date of issuance of ToR & amendment issued if any and validity period of ToR	J-12011/07/2019-IA-1(R), Dated 27.11.2019
13	I. Baseline data collection period (as per MoEF&CC O.M. dated 8/6/2022) ii. Validity of baseline data	Monsoon-2019, Winter2019-20, Pre-monsoon 2020 and Additional Season Pre-Monsoon 2025. Valid as the date of data collection is within three years from the date of public hearing (24-03-2022)

14	Status of wildlife conservation plan (in case of presence of schedule I species)	Plan has been submitted for approval
15	**Public Hearing**: i. Date of advertisement given ii. Date of public consultation iii. Venue iv. Designation of Presiding Officer v. Whether the commitments in public hearing form part of specific conditions/ EMP as per MoEF&CC OM dated 30/09/2020 and 25/02/2021	i. Times of India" (English) on 19.2.2022 and Hindi newspaper 24.03.2022 ii. Pachayat Bhawan, Village Bukhari, Tehsil Karahai, District Sheopur iii. Deputy Collector, Sheopur iv. Yes, the commitments made in public hearing incorporated in EIA Report.
16	Proposed environmental safeguards i. Special Effluent/ Emission measurement devices that have been installed ii. Special Pollution Control / Abatement Devices that have been installed/proposed to be installed iii. How does the Technology compare with the Best Available Technology in the field?	 The micro irrigation project does not lead to any emission. Liquid effluent generated from labour camps which will be suitably processed through STP. The micro irrigation project makes use of the best available design and construction planning technology available. Pressurized pipe Irrigation schemes have far greater water application efficiency and are based on tested technology
17.	Extent of Green Belt developed/ proposed?	Green belt around reservoir and along road in about 4.0 ha (0.44% of project area)
18	Financial outlay towards EMP (Capital& recurring per annum)	Capital costs Rs 42.65 Crores Annual Recurring Rs 0.75 Crores
19	Any other issue relevant to the project	The Administrative Approval granted to the project by State Government of Madhya Pradesh. TS accorded to estimate of Unit-I and II on 6.5.2021

- **Details of the EMP:**

S. N.	Plans	Cost (Rs. Lakh)	Capital Cost (Rs lakh)	Annual Recurring (Rs lakh)
1.	Catchment Area Treatment Plan	117.00	117.00	0.00
2	Command Area Development Plan	63.00	30.00	11.00
3.	Compensatory Afforestation Scheme*	3754.00	3754.00	0.00
4.	Wildlife and Bio-diversity Management plan	85.00	85.00	0.00
5.	Fisheries Management Plan	80.00	77.00	1.00
6.	Resettlement & Rehabilitation Plan**	0.00	0.00	0.00
7.	Green Belt Development Plan	27.00	21.00	2.00
8.	Reservoir Rim Treatment Plan	20.00	20.00	0.00
9	Muck Management Plan	18.00	18.00	0.00
10.	Landscape and Restoration Plan	3.00	3.00	0.00
11.	Restoration Plan for Quarry Sites	12.00	9.00	1.00
12.	Disaster Management Plan	20.00	17.00	1.00
13.	Water, Air and Noise Management Plan	42.00	6.00	12.00
14.	Public Health Delivery Plan	45.00	18.00	9.00
15.	Labour Management Plan	14.00	5.00	3.00
16.	Local Skill Development Schemes	30.00	30.00	0.00
17.	Sanitation and Solid Waste Management Plan	35.00	11.00	8.00
18.	Corporate Environmental Responsibility Plan	40.00	40.00	0.00
19.	Environmental Safeguards During Construction	45.00	0.00	15.00
20.	Energy Conservation Measures	16.00	4.00	4.00
21	Environmental Monitoring Plan	21.00	0.00	7.00
Grand Total EMP		**4487.00**	**4265.00**	**74.00**

- **ADS details**

S. N.	ADS Point	Reply
1	The Project Proponent (PP) had not shared complete and proper documents prior to the meeting, which constrained the Committee from adequately understanding key components of the proposal. While enquiring about the concurrence of CWC for the	It is respectfully submitted that all requisite project documents including DPR, Hydrology Report, Drawings, Administrative Approval, Technical Sanction and EIA Report have been compiled and are being submitted for kind consideration of the Committee. The Aheli River originates near Kola pahar village in the Sheopur district of Madhya

	project, the Committee observed that no clear response was provided by the PP. The Committee also noted with concern that no senior official from the Madhya Pradesh Water Resources Department was present during the deliberation, and instead, the PP had authorized the contractor to attend the meeting, which was not found acceptable by the Committee. The EAC expressed displeasure over such negligence on the part of the Government of Madhya Pradesh, particularly considering that the proposal pertains to an irrigation project aimed at public welfare. In view of the above, the EAC advised the PP to ensure proper preparedness and demonstrate seriousness while presenting the proposal in future meetings	Pradesh; being a rain-fed river, it flows entirely within the boundaries of this state before joining the Parvati River. The proposed project, encompassing its catchment area, submergence area, and command area, is situated entirely within the Sheopur district of Madhya Pradesh. 100% of the Aheli basin lies within the Sheopur district of Madhya Pradesh. This project is located approximately 44 km upstream from the inter-state boundary. It does not involve any form of inter-basin water transfer. The Water Resources Department, Government of Madhya Pradesh, sincerely regrets the absence of senior departmental officers during the EAC deliberation. It is hereby confirmed that for all future meetings, the project shall be represented by a senior officer not below the rank of Chief Engineer, along with the consultant, to ensure comprehensive and accountable responses to any queries raised by the Committee. The Department also assures that documents/ information shall be presented in an organized manner during the EAC presentation.

56.2.3: The EAC during deliberations noted the following:

- The EAC deliberated on the information submitted and presented during the meeting, observing that the proposal is for the grant of Environmental Clearance (EC) to the project Munjari Irrigation Project (CCA: 11575 ha) located in Sub District Badoda and Karahal, District Sheopur of Madhya Pradesh being developed by M/s. Madhya Pradesh Water Resources Department.

- The EAC noted that the as per the provisions the project comes under "B1" category as it is a major irrigation project because the CCA lies between ≥10,000 ha i.e. 11575 ha. of CCA. However, due to location of the project in Madhya Pradesh is within 10km of inter-state

boundary with State of Rajasthan, the project transformed to category 'A' project and will be appraised at Central level.

- 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 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 committee noted that the Terms of References for conducting EIA study for the proposed project were finalized by the Expert Appraisal Committee (Hydro River Valley Sector) in its 26th meeting held on 20th August 2019. The Ministry subsequently issued TOR vide letter No. J-12011/07/2019-IA-1(R), dated 27.11.2019.

- The project authorities confirmed the submission of all documents and reply to the issues raised during the 39th EAC meeting held on 12.09.2025. It was informed that the Aheli river originates near kola pahar village in the Sheopur district of Madhya Pradesh; being rain fed river, it flows entirely within the boundaries of this state before joining the Parvati river. The proposed project, encompassing its catchment area, submergence area, and command area, is situated entirely within the Sheopur district of Madhya Pradesh. 100% of the basin lies within the Sheopur District of Madhya Pradesh. It does not involve any form of inter-basin transfer. It was also informed that being an intra-state project the Hydrology has been approved by the Bureau of Design (Bodhi), a dedicated technical design and engineering wing of the Water Resources Department (WRD) in Madhya Pradesh vide its letter dated 10.05.2018. The concurrence of State Dam Safety Organization (SDSO) has been obtained vide its letter dated 22.01.2025.

- Further, it was observed by the EAC that total land required of the project is 1043.0890 ha (Forest: 740.1592 ha; non-forest: 302.9298 ha). There is No National Park, Sanctuary, Defense Establishments, Archaeological Monuments, Notified Eco-sensitive areas or protected areas under Wildlife (Protection) Act exists within 10 km distance from it. It was

also observed that the Stage-I FC has been obtained vide MoEF&CC letter dated on 15.04.2026 [proposal No. FP/MP/HYD/IRRIG/471582/2014].

- The committee observed that the Public Hearing for the proposed project has been conducted by the State Pollution Control Committee chaired by Deputy Collector, Sheopur dated 24.3.2022 at Panchayat Bhawan, Village Bukhari, Tehsil Karahal, District Sheopur. The EAC discussed the concerns raised during the Public Hearing (PH) and reviewed the action plan submitted by the PP to address these issues. After detailed deliberation, the Committee found the action plan satisfactory, recognizing that the proposed mitigation measures adequately respond to stakeholders' concerns.

- The EAC noted that the total estimated project cost is ₹414.79 Crores. The Committee further observed that a capital cost of ₹44.87 Crores has been earmarked towards the Environmental Management Plan (EMP), with a recurring operation and maintenance cost of ₹0.74 Crore per annum. The cost earmarked for Compensatory Afforestation ₹37.54 Crore shall be excluded from the budget outlay of EMP cost.

56.2.5 The EAC after examining the information submitted and detailed deliberations **recommended** for grant of Environmental Clearance by the Ministry for construction of the Munjari Irrigation Project (CCA: 11575 ha) in an area of 1043.089 ha located in Sub District Badoda and Karahal, District Sheopur of Madhya Pradesh being developed by M/s. Madhya Pradesh Water Resources Department- Khandwa, Madhya Pradesh., under the provisions of EIA Notification, 2006, as amended subject to compliance of applicable Standard EC conditions along with the following specific conditions.

[A] Environmental management and Biodiversity conservation:

i. The financial outlay earmarked for Compensatory Afforestation (CA) shall be excluded from the total Environmental Management Plan (EMP) budget outlay.

ii. 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. On-line monitoring system will be installed to measure and record the E-Flow releases.

iv. Stocking of fish in reservoir should be based on the area and size of fish. It should be implemented in consultation with the central /state department having expertise in reservoir fisheries.

v. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, the trainings to the youths be incorporated for their appropriate engagements in the Project.

vi. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines and all commitments made during the Public Hearing shall be fulfilled.

vii. Six monthly compliance reports shall be submitted by the project proponent to Regional Office, MoEF& CC, without fail until completion of the works.

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

ix. 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.

x. Watershed Management Plan be prepared in consultation with expert government research institute and be implemented in a time bound manner.

xi. 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.

xii. 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 separate Environmental Management Cell, under the supervision of an Environment Manager having Post Graduate qualification in Environmental Sciences/ Environmental Engineering shall be established, equipped with full-fledged laboratory facilities shall be set up both at the project and company headquarter levels to carry out Environmental Management activities. The Environment Manager shall report directly to the Head of the Organization/Head of the Project.

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

Agenda item no. 56.3

Dikchu Hydroelectric Power Project (96 MW) in District Gangtok & Mangan, Sikkim by M/s Sneha Kinetic Power Projects Private Limited (erstwhile Greenko Energies Private Limited)- Environmental Clearance for Expansion of Capacity (from 96 MW to 110 MW)- reg.

[Proposal No. IA/SK/RIV/580316/2026; F. No. J-12011/91/2007-IA.I]

56.3.1 The proposal is for grant of Environmental Clearance (EC) to the proposal for expansion of capacity (from 96 MW to 110 MW) of Dikchu Hydroelectric Power Project (96 MW) in District Gangtok & Mangan, Sikkim by M/s Sneha Kinetic Power Projects Private Limited (erstwhile Greenko Energies Private Limited).

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

i. M/s Sneha Kinetic Power Projects Ltd. (SKPPL), Hyderabad has been issued a Letter of Intent in Sept 2004 for the development of Dikchu Hydro Power Project on a Build, Own, Operate and Transfer (BOOT) basis by Sikkim Power Development Corporation (SPDC), a Government of Sikkim enterprise. The project, located in Northern (Mangan) and Eastern (Gangtok) Districts of Sikkim, envisages utilization of the waters of the river Dik-Chu, a tributary of River Teesta, for power generation. Dikchu HEP (96 MW) is a run-of-the-river hydroelectric project, which is under operation since 2018.

ii. Dikchu Hydroelectric Project located in Mangan and Gangtok Districts of Sikkim envisages utilization of the water of the river Dik Chu, a tributary of River Teesta for power generation on a run-of-the-river type development, harnessing a head of about 350 m. River Bakcha Chu and River Rate Chu join near Lingdok village, downstream of which it is called River Dik Chu. Of the two rivers, River Bakcha Chu carries more flows. A diversion structure is required to divert the river flows for the power generation. It is necessary to locate this diversion structure downstream of the above-mentioned confluence to ensure that the flows carried by both the tributaries are utilized for power generation.

iii. Environmental Clearance to Dikchu HEP for 96 MW (3x32MW) installed capacity was issued by Ministry of Environment, Forest & Climate Change on 01/04/2008 under EIA Notification 2006. Stage I Forest clearance for diversion of 9.7129 Ha of forest land was issued on 17/12/2008 and Stage II was issued on 09/02/2010. Amendment in Stage I Forest clearance for diversion of 9.5319 Ha (adjustment of reduced requirement) of forest land was issued on 08/02/2013 and Stage II was issued on 26/03/2013. Amendment in Environmental Clearance to Dikchu HEP for 96 MW (2x48 MW) installed capacity was issued by Ministry of Environment, Forest & Climate Change on 05/03/2018 under EIA Notification 2006.

iv. Details of the EC and FC process completed is given at **Table** below:

Chronology of Approvals/Clearances

Sl. No.	Activity	Date	IC (MW)	Remarks
1.	Letter of Intent	03/09/04		State Govt of Sikkim
2.	Implementation agreement	01/03/06		State Govt of Sikkim
3.	Scoping Clearance/TOR	19/04/07	96	TOR was issued to M/s Sneha Kinetic Power Projects Private Limited for (3x32MW)
4.	Public Hearing	16/11/07	96	PH was conducted on 16.11.2007 East Sikkim (Gangtok)

Sl. No.	Activity	Date	IC (MW)	Remarks
				19.11.2007 North Sikkim (Mangan)
5.	Environment Clearance	01/04/08	96	MoEF granted EC for (3x32) MW
6.	Techno Economic clearance	28/11/08		State Govt of Sikkim
7.	Forest Clearance Stage-I	17/12/08	96	Department of Forest Environment and Wildlife, Govt of Sikkim granted forest Stage-I clearance for 9.7129 Ha of forest land
8.	Forest Clearance Stage-II	09/02/10	96	Department of Forest Environment and Wildlife, Govt of Sikkim granted forest clearance for 9.7129 Ha of forest land
9.	Consent To Establish	16/04/10	96	Sikkim State Pollution Control Board granted CTE
10.	Lease agreement for acquisition of private land	22/12/11	96	State Govt of Sikkim
11.	Approval for Change in Turbine Configuration of Units	21/10/11	96	State Govt of Sikkim
12.	Fisheries NOC	10/12/12	96	State Govt of Sikkim
13.	NOC from Irrigation and Flood control department	29/06/12	96	State Govt of Sikkim
14.	Forest Clearance Stage-I Amendment (adjustment of reduced requirement of Forest land)	08/02/13	96	Department of Forest Environment and Wildlife, Govt of Sikkim granted forest clearance for 9.5319 Ha of forest land
15.	Forest Clearance Stage-II Amendment (adjustment of reduced requirement of Forest land)	26/03/13	96	Department of Forest Environment and Wildlife, Govt of Sikkim granted forest clearance for 9.5319 Ha of forest land

Sl. No.	Activity	Date	IC (MW)	Remarks
16.	Approval for Revised layout and Salient features	07/11/11	96	State Govt of Sikkim
17.	Renewal of CTE	23/04/15	96	Sikkim State Pollution Control Board granted CTE Renewal
18.	Date of Submission of Case for Amendment in EC	05/08/16	96	State Govt of Sikkim
19.	Consent To Operate	17/02/17	96	Sikkim State Pollution Control Board granted CTO
20.	EC Amendment Clearance	05/03/18	96	MoEF granted EC Amendment for (2x48) MW, Land requirement also increased
21.	Approval for enhancing the rated capacity 96MW to 110MW	17/06/25	110	Govt Of Sikkim Power Department
22.	CCR Site Visit	29/10/25	96	Sub-Office, Kolkata (RO Bhubaneswar), MoEF&CC
23.	CCR Site Visit report	15/12/25	96	
24.	Renewal of CTO	13/12/25	96	Sikkim State Pollution Control Board granted CTO Renewal
25.	Submission of TOR application in Form I	16/3/26	110	Submission of TOR application in Form I
26.	Issue of Scoping Clearance	4/5/26	110	TOR issued without public consultation

v. Based on discharge monitoring at site, it was observed that the inflow in the river for all the years from 2018 has been more than what is considered in the DPR. Additional power potential assessment has been undertaken based on the average of 10-daily discharges from 2018–19 to 2022–23. Revised power potential submitted to Government of Sikkim and approval for enhancing the rated capacity from 96 MW to 110 MW was issued by Power Department, Govt of Sikkim on 17.06.2025.

vi. Keeping in view that, the turbines have inbuilt overload capacity, the same turbines will be operated with 17.5 m^3/s of discharge instead of 15.23 m^3/s (present design discharge) during the period of high flow in the river. Thus, the capacity enhancement from 96 MW to 110 MW can be achieved without any additional construction, hydro-mechanical work or land requirement. Only operational changes will give additional 14 MW of capacity and

provide benefits of increased renewable energy generation and enhanced free-power benefits to the state government.

vii. As per para 7(ii)(a) of EIA Notification of September 2006, all applications seeking prior environmental clearance for expansion with increase in the production capacity beyond the capacity for which prior environmental clearance has been granted under this notification or with increase in either lease area or production capacity in the case of mining projects or for the modernisation of an existing unit with increase in the total production capacity beyond the threshold limit prescribed in the Schedule to this notification through change in process and or technology or involving a change in the product –mix shall be made in Form I and they shall be considered by the concerned Expert Appraisal Committee or State Level Expert Appraisal Committee within sixty days, who will decide on the due diligence necessary including preparation of Environment Impact Assessment and public consultations and the application shall be appraised accordingly for grant of environmental clearance in respect of projects or activities other than falling in clause (b) and (c).

viii. Therefore, the project would need prior Environment Clearance for capacity enhancement from 96 MW to 110 MW. Application has been filed in Form I for the TOR as per para 7(ii)a of EIA Notification, 2006 on 16.03.2026. Scoping clearance letter has been issued on 04.05.2026.

ix. Dikchu HEP is an operational run-of-river hydroelectric scheme commissioned in 2018 for harnessing hydropower potential of River Dikchu, a tributary of River Teesta. The project presently operates with an installed capacity of 96 MW through 2 × 48 MW Francis turbine generator units.

x. The project comprises:

- Diversion barrage across River Dikchu;
- Intake structure;
- Head Race Tunnel (HRT);
- Surge shaft;
- Penstock system;
- Underground powerhouse;
- Tail Race Tunnel (TRT);
- Switchyard and associated infrastructure.

xi. The project harnesses a net operating head of approximately 346–350 m for power generation.

xii. The project proposal was considered by the Expert Appraisal Committee (Hydro River Valley Sector) during its 51st meeting held on 27th March 2026, wherein the Committee recommended the grant of Terms of Reference (ToR) for the project. Accordingly, the

Ministry issued the ToR for the Dikchu HEP (from 96 MW to110 MW) project vide letter No. J-12011/91/2007-IA.I dated 04.05.2026.

xiii. The geographical co-ordinates of the project is at Longitude 88°35'20" East and Latitude is 27°24'00" North.

xiv. The Dikchu Hydroelectric Project (96 MW) Construction was started in March 2011 and project has been operational since 2018.

xv. **Land requirement**: The Dikchu HEP is constructed on a total of 55.5329 hectares (9.5319 hectares of forest land and 46.001 hectares of private land). As only operational changes are proposed, the land footprint remains unchanged, with no additional land acquisition required.

xvi. **Demographic details in 10 km radius of project area:** The affected villages Lingdok, Ramthang, Taneyek, Rakdong, Kabi, Phodong, and Rongong together represent a predominantly rural and tribal population. Lingdok has 294 households with a population of 1,516, while Ramthang has 90 households and 513 people, Taneyek 154 households and 754 people, Rakdong 387 households and 2,156 people, Kabi 225 households and 1,091 people, Phodong 113 households and 532 people, and Rongong 162 households and 728 people. In most villages, males slightly outnumber females, with sex ratios ranging from 791 in Phodong to 888 in Kabi. Scheduled Tribe communities form a significant share of the population, accounting for 96.1% in Ramthang, 71.3% in Kabi, 61.8% in Phodong, 50.4% in Rongong, 43.1% in Taneyek, 32.9% in Rakdong, and 30.9% in Lingdok, while Scheduled Castes constitute only a small proportion.

The workforce is also substantial, with 1,326 workers in Rakdong, 617 in Kabi, 586 in Lingdok, 413 in Rongong, 373 in Taneyek, 322 in Phodong, and 246 in Ramthang. Agriculture is the dominant occupation; for example, 74.3% of workers in Ramthang and 68.6% in Rakdong are cultivators, with additional workers engaged as agricultural laborers, in household industries, or in service and business activities. Basic infrastructure and amenities are available in these villages, including multipurpose cooperative societies, primary health sub-centers, post offices, ICDS centers (ranging from about 3 to 7 per block), and primary or junior high schools, though access to higher education, banking, and advanced healthcare remains limited. Overall, the socio-economic structure of the affected villages reflects agriculture-based livelihoods, moderate population sizes, and limited but essential rural infrastructure.

xvii. **Water requirement:** The project harnesses the combined flow of Bakcha Chu and Rate Chu, which join near Lingdok village to form River Dik Chu. A diversion structure is constructed downstream of the confluence to utilize the river discharge for power generation under a gross head of about 350 m. River discharges are estimated based on the

long-term discharge series and updated based on the observed flow at Dikchu diversion site for a period of 2019 till 2025. The hydrological analysis demonstrates that during significant periods of the year, particularly monsoon months (April to October), the available discharge in Dikchu River is higher than estimated at the time of initial design discharge and project is capable of operating at higher capacity during high flow period.

xviii. **Project Cost:** As the project is already operational; for increase in capacity from 96 MW to 110 MW no additional cost is required.

xix. **Project Benefit:**

- Additional renewable energy generation
- Additional free power to the state

xx. **Environmental Sensitive area:** No project component falls in any notified protected area. Nearest Protected Area to the project components is Fambonglho Wildlife Sanctuary i.e. 2.0 km. The notification of Eco Sensitive Zone of Fambonglho Wildlife Sanctuary was issued by MoEF&CC on 27th August 2014. All the components of Dikchu HEP are outside the notified ESZ.

xxi. **MoU / any other clearance/ permission signed with State government:** The Government of Sikkim, Power Department, has granted in-principal approval and concurrence to Sneha Kinetic Power Projects Private Limited (SKPPL) for enhancing the rated capacity of the Dikchu Hydro Electric Project from 96 MW to 110 MW, as per the Implementation Agreement dated 1st March 2006. The approval was formalized through the Government's letter Ref. No. 69/Works/Power/PCE-(II)/25-26/30 dated 17.06.2025.

xxii. **Resettlement and rehabilitation:** Rehabilitation and Resettlement (R&R) process has been completed.

xxiii. **Scheduled –I species:** As per Wildlife Protection Amendment Act, 2022, Leopard, Leopard Cat, Jungle Cat, Jackal, Common mongoose, Masked palm civet, Asiatic Black Bear, Barking Deer, Himalayan Goral, Indian Crested Porcupine, Himalayan Griffon-Vulture, Common Hill myna, Indian Cobra, Monocled cobra, King Cobra, Chequered Keelback, Indian Rock Python, Bengal Monitor Lizard, Western Russel's Viper are the species listed under Schedule-I.

xxiv. **Alternative Studies:** Alternative studies are not applicable as the project is site-specific. The proposal pertains to the Environmental Clearance (EC) for expansion of the existing hydropower project capacity from 96 MW to 110 MW. The expansion aims to utilize the available continuous overload capacity of the plant by uprating the installed capacity to 110 MW, while retaining an additional 10% overload capacity beyond 110 MW. This

enhancement is expected to increase annual energy generation and provide better support to the grid during low-frequency conditions.

xxv. **Baseline Environmental Scenario:**

Period: From March 2025 to February 2026

AAQ parameters at 06 locations (Min. & Max.)

Core Zone

Parameter	Unit	Min	Max	Standards
$PM_{2.5}$	$\mu g/m^3$	7.50	22.20	60
PM_{10}	$\mu g/m^3$	17.90	50.50	100
SO_2	$\mu g/m^3$	5.10	8.30	80
NO_2	$\mu g/m^3$	6.60	17.50	80

Buffer Zone

Parameter	Unit	Min	Max	Standards
$PM_{2.5}$	$\mu g/m^3$	11.50	29.60	60
PM_{10}	$\mu g/m^3$	10.60	77.50	100
SO_2	$\mu g/m^3$	5.25	13.40	80
NO_2	$\mu g/m^3$	7.50	30.60	80

Incremental GLC Level

Core Zone

Criteria Pollutant	Unit	Baseline Concentration [A]	Predicted incremental value considering worst case stability class [B]	Total GLC [A]+[B]
PM_{10}	$\mu g/m^3$	50.5	0	50.5
$PM_{2.5}$	$\mu g/m^3$	17	0	17
SO_2	$\mu g/m^3$	6.1	0	6.1
NO_2	$\mu g/m^3$	8.3	0	8.3

Buffer Zone

Criteria Pollutant	Unit	Baseline Concentration [A]	Predicted incremental value considering worst case stability class [B]	Total GLC [A]+[B]
PM_{10}	$\mu g/m^3$	77.5	0	77.5
$PM_{2.5}$	$\mu g/m^3$	29.6	0	29.6
SO_2	$\mu g/m^3$	13.4	0	13.4
NO_2	$\mu g/m^3$	30.6	0	30.6

River water samples (06 samples)

Core Zone

S. No.	Parameters	Min	Max	Standards
1	pH	7.35	7.92	8.5

2	Total Dissolved Solids, mg/L	26	33	0
3	Dissolved Oxygen (mg/l)	8.64	11.6	6
4	Chloride (as Cl), mg/L	6.2	7.9	0
5	Total Hardness (as CaCO3), mg/L	30	37	0
6	Biological Oxygen Demand (mg/l)	0	0	2
7	Chemical Oxygen Demand (mg/l)	0	0	0
8	Total Coliform (MPN/100 ml)	0	0	50

Buffer Zone

S. No.	Parameters	Min	Max	Standards
1	pH	7.28	7.74	8.5
2	Total Dissolved Solids, mg/L	21	30	0
3	Dissolved Oxygen (mg/l)	8.28	11.9	6
4	Chloride (as Cl), mg/L	5.8	8.5	0
5	Total Hardness (as CaCO3), mg/L	27	32	0
6	Biological Oxygen Demand (mg/l)	0	0	2
7	Chemical Oxygen Demand (mg/l)	0	0	0
8	Total Coliform (MPN/100 ml)	0	0	50

Pond water samples quality at --locations

-

Ground Water samples at 03 locations

Core Zone

S. No.	Parameters	Min	Max	Desired Limits	Permissible Limits	
1	pH	6.9	7.3	6.5	8.5	
2	Total Dissolved Solids, mg/L	55	64	500	2000	
3	Chloride (as Cl), mg/L	25	39	250	1000	
4	Total Hardness (as CaCO3), mg/L	71.7	104.7	200	600	
5	Fluoride (as F), mg/L	0.18	0.22	1.0	1.5	

Buffer Zone

S. No.	Parameters	Min	Max	Desired Limits	Permissible Limits	
1	pH	7.2	7.9	6.5	8.5	
2	Total Dissolved Solids, mg/L	41	86	500	2000	
3	Chloride (as Cl), mg/L	29	46	250	1000	
4	Total Hardness (as CaCO3), mg/L	87.8	126.8	200	600	
5	Fluoride (as F), mg/L	0.14	0.18	1.0	1.5	

Noise levels Leq (Day & Night) at 06

Zone	Category	Leq Day dB(A)		Leq Night dB(A)		Prescribed Limits		
		From	To	From	To	Day	Night	

<table>
<tr><td>locations</td><td>Core</td><td>Residential</td><td>51.2</td><td>60.6</td><td>34.7</td><td>39.4</td><td>55</td><td>45</td><td></td></tr>
<tr><td></td><td>Buffer</td><td>Residential</td><td>52.1</td><td>62.4</td><td>31.2</td><td>42.1</td><td>55</td><td>45</td><td></td></tr>
<tr><td>Soil Quality at 06 Locations</td><td colspan="9">Core Zone
<table>
<tr><th>S. No.</th><th>Parameters</th><th>Min</th><th>Max</th><th>Prescribed Limits</th></tr>
<tr><td>1</td><td>Calcium (mg/kg)</td><td>40</td><td>49</td><td>500</td></tr>
<tr><td>2</td><td>Magnesium (mg/kg)</td><td>13</td><td>19</td><td>500</td></tr>
<tr><td>3</td><td>Nitrogen (kg/ha)</td><td>108.6</td><td>113.2</td><td>500</td></tr>
<tr><td>4</td><td>Phosphorus (kg/ha)</td><td>24.76</td><td>31.2</td><td>50</td></tr>
<tr><td>5</td><td>Potassium (kg/ha)</td><td>103</td><td>110</td><td>500</td></tr>
<tr><td>6</td><td>Carbon (%)</td><td>10.16</td><td>11.85</td><td>1</td></tr>
<tr><td>7</td><td>Sodium Absorption Ratio</td><td>3.72</td><td>4.73</td><td>10</td></tr>
<tr><td>8</td><td>Salinity (ppt)</td><td>0</td><td>0</td><td>0.01</td></tr>
</table>
Buffer Zone
<table>
<tr><th>S. No.</th><th>Parameters</th><th>Min</th><th>Max</th><th>Prescribed Limits</th></tr>
<tr><td>1</td><td>Calcium (mg/kg)</td><td>35</td><td>54</td><td>500</td></tr>
<tr><td>2</td><td>Magnesium (mg/kg)</td><td>12</td><td>22</td><td>500</td></tr>
<tr><td>3</td><td>Nitrogen (kg/ha)</td><td>96.2</td><td>132</td><td>500</td></tr>
<tr><td>4</td><td>Phosphorus (kg/ha)</td><td>19.45</td><td>34.2</td><td>50</td></tr>
<tr><td>5</td><td>Potassium (kg/ha)</td><td>95</td><td>182</td><td>500</td></tr>
<tr><td>6</td><td>Carbon (%)</td><td>6.37</td><td>12.84</td><td>1</td></tr>
<tr><td>7</td><td>Sodium Absorption Ratio</td><td>4.01</td><td>5.57</td><td>10</td></tr>
<tr><td>8</td><td>Salinity (ppt)</td><td>0</td><td>0</td><td>0.01</td></tr>
</table></td></tr>
<tr><td>Flora & Fauna</td><td colspan="9">Schedule-I species observed in the study area:

As per As per Wildlife Protection Amendment Act, 2022, Leopard, Leopard Cat, Jungle Cat, Jackal, Common mongoose, Masked palm civet, Asiatic Black Bear, Barking Deer, Himalayan Goral, Indian Crested Porcupine, Himalayan Griffon-Vulture, Common Hill myna, Indian Cobra, Monocled cobra, King Cobra, Chequered Keelback, Indian Rock Python, Bengal Monitor Lizard, Western Russel’s Viper are the species listed under Schedule-I.</td></tr>
</table>

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

Since the project is operational, the labour colonies no longer exist, and solid-waste generation is minimal, limited only to routine domestic waste from operational staff. No further displacement or additional waste-management requirements are anticipated. The project has identified authorized vendors for the recycling or disposal of used batteries, used

oil, and used oil filters, as these are classified as hazardous wastes as per Hazardous and other Wastes (Management &Transboundary Movement) Rules,2020

xxvii. Public Hearings for the existing 96 MW project were conducted by the State Pollution Control Board (SPCB) on 16 November 2007 and 19 November 2007 in East Sikkim (Gangtok) and North Sikkim (Mangan) districts, respectively. Further, as per the Terms of Reference (ToR) issued by the Expert Appraisal Committee (EAC), MoEF&CC, vide letter dated 04 May 2026 for the proposed capacity expansion from 96 MW to 110 MW, a fresh Public Hearing is exempted under Clause 7(ii).

xxviii. Details of Certified compliance report submitted by RO, MoEF&CC: The Regional Office, Bhubaneswar, Ministry of Environment, Forest & Climate Change, conducted the review as per the request from the user agency and issued the Certified Compliance Report (CCR) RO-NE/E/IA/SK/HEP/88/388 on 15.12.2025.

xxix. Status of Litigation Pending against the proposal, if any: NA

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

- **EAC Meeting Details:**

EAC meeting/s	56th Meeting
Date of Meeting/s	08.06.2026
Date of earlier EAC meetings	Environment Clearance: 16.01.2008 & 21.02.2008 EC Amendment: 24.08.2017 & 25.08.2017 ToR (Expansion in capacity): 27.03.2026

- **Project details:**

Name of the Proposal	Dikchu Hydroelectric Project (96 MW to 110 MW)
Proposal No.	Proposal No: IA/SK/RIV/580316/2026 File No. J-12011/91/2007-IA.I
Location (Including Coordinates)	Dikchu HEP falls in Gangtok and Mangan Districts of Sikkim. Project is located at Dikchu river 100 meters downstream of confluence of Ratey Chu and Bakcha Chu river at Lingdok. Powerhouse is located at Dikchu, Gangtok district near Dikchu Bazar.
Company's Name	Sneha Kinetic Power Projects Private Limited
CIN no. of Company/user agency	U40109DL2000PTC231172
Accredited Consultant and certificate no.	R S Envirolink Technologies Private Limited NABET/EIA/25-28/RA 0415

Project location (Coordinates /River/ Reservoir)	Dikchu HEP falls in Gangtok and Mangan Districts of Sikkim. Project is located at Dikchu river 100 meters downstream of confluence of Ratey Chu and Bakcha Chu river at Lingdok. Powerhouse is located at Dikchu, Gangtok district near Dikchu Bazar. Dam site: 88°35'20"E; 27°24'00"N Powerhouse: 88°31'37.83"E; 27°24'14.32"N.
Inter- state issue involved	No
Proposed on River/ Reservoir	Dikchu River
Type of Hydro-electric project	Hydroelectric Power Project
Seismic zone	Zone-IV

- **Category details:**

Category of the project	River Valley and Hydro Electric Project
Capacity / Cultural command area (CCA)	110 MW
Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	Nil

- **ToR/EC Details:**

ToR Proposal No.	IA/SK/RIV/571164/2026
EAC meeting date	27.03.2026
ToR Letter No.	File No. J-12011/91/2007-IA.I
ToR grant Date	04.05.2026
Cost of project	745 Cr. (already incurred as the project is operational)
Total area of Project	55.5329 Ha (already acquired and the project constructed)
Height of Dam from Riverbed (EL)	36 m
Details of submergence area	The submergence area is 59479 Sqm
District to provide irrigation facility (if applicable)	NA
Details of tunnels on upper level & lower level and length of canal (if applicable)	5.46 km (Headrace tunnel)
No. of affected Village	7
No. of Affected Families	75
Project Benefits	Additional renewable power generation Additional free power to the state

R&R details	All Rehabilitation and Resettlement activities have been completed. Compensation, support, and assistance have been provided to all affected families. As the project is now operational, no further land acquisition, displacement, or R&R measures are required.
Catchment area/ Command area	240 km2
Types of Waste and quantity of generation during construction/Operation	Since there is no construction activity required for capacity expansion, Waste generation during construction is not applicable. Waste generated during operation includes municipal solid waste, bio-medical waste, and e-waste.
Material used for blasting and its composition as per DGMS standards.	NA
E-Flows for the Project	The environmental flow (e-flow) requirements for the project are being regularly monitored by the Sikkim State Pollution Control Board (PCB) in accordance with the prescribed norms and regulatory guidelines.
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 sustaining river ecosystem.	Yes (Teesta Basin Study completed)
Details on provision of fish pass	NA Fisheries development activities were also undertaken under the approved EMP provisions of Dikchu Hydroelectric Project through the Directorate of Fisheries, Government of Sikkim. A total amount of Rs 55.75 lakh was provided towards fisheries development and allied aquatic resource management activities. As per utilization records made available by the Directorate of Fisheries, an amount of Rs 45.75 lakh had already been utilized towards various fisheries infrastructure development and renovation works.

Project benefit including employment details (no of employee)	The proposed enhancement of Dikchu HEP from 96 MW to 110 MW would enable improved utilization of surplus monsoon flows, increased renewable energy generation, enhanced peaking power support, additional revenue and free power benefits to the State, and optimized utilization of existing hydropower infrastructure with negligible incremental environmental impacts.
Area of Compensatory Afforestation (CA) with tentative no of plantation.	Compensatory Afforestation (CA) activities for Dikchu Hydroelectric Project were implemented in accordance with the approved Forest Clearance conditions and applicable statutory requirements under the Forest (Conservation) Act. The compensatory afforestation measures were undertaken through the Forest Department, Government of Sikkim for offsetting impacts associated with diversion of forest land for the project and for improvement of ecological conditions within identified afforestation areas. The Compensatory Afforestation programme was implemented with actual expenditure of Rs 119.32 lakh against the approved allocation of Rs 82.97 lakh, resulting in additional expenditure of about Rs 36.35 lakh towards afforestation and forest protection measures. The increased expenditure was primarily attributable to revised Forest Clearance conditions, CAMPA-related payments, plantation and maintenance activities, forest protection measures, and escalation in implementation costs. The expenditure towards compensatory afforestation included: FCA Stage-I component: Rs 97.12 lakh; and FCA Stage-II component: Rs 22.20 lakh. The required funds were deposited in designated CAMPA and Forest Department accounts as per statutory provisions and Forest Clearance conditions. The compensatory afforestation measures included plantation activities, maintenance of plantation areas, protection of afforested sites, soil and moisture conservation measures, and ecological restoration activities within designated afforestation areas. The implementation of compensatory afforestation measures has contributed towards improvement in vegetative cover, ecological restoration and strengthening of forest regeneration in the identified afforestation areas. The afforestation and associated forest protection measures have also supported

	enhancement of local ecological conditions and long-term environmental stabilization in the region. Since the proposed enhancement in installed capacity from 96 MW to 110 MW is limited to operational optimization of the existing hydropower infrastructure without any additional forest land diversion, tree felling or expansion of project footprint, no additional compensatory afforestation requirement is envisaged under the proposed capacity enhancement proposal. The compensatory afforestation measures already implemented under the approved Forest Clearance conditions shall continue to provide long-term ecological benefits during operation phase of the enhanced capacity project.
Previous EC details	EC for 96 MW granted to Sneha Kinetic Power Projects Private Limited on 01.04.2008. EC Amendment granted to Sneha Kinetic Power Projects Private Limited on 05.03.2018
EC Compliance Report by R.O, MOEF&CC	IRO, Regional Office, Bhubaneswar visited the site on 29th October 2025 and issued CCR vide CCR No.: RO-NE/E/IA/SK/HEP/88/388 dated 15th December 2025.

- **Electricity generation capacity:**

Powerhouse Installed Capacity	110 MW
Generation of Electricity Annually	455.44 MU
No. of Units	2 units of 55 MW

- **Muck Management Details:**

No. of proposed disposal area/ (type of land- Forest/Pvt land)	Not required as no muck generation
Cross section of proposed muck area, Height of muck with slope.	NA
Distance of muck disposal area (location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.	NA
Total Muck Disposal Area	NA
Estimate Muck to be generated	NA
Transportation	NA
Monitoring mechanism for Muck Disposal Transportation	NA

- **Land Area Breakup:**

Private land	46.001 ha
Government land	0.00 ha
Forest Land	9.5319 ha
Total Land	55.5329 ha
Submergence area/Reservoir area	5.9479 ha
Additional information (if any)	-

- **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	No project component falls in any notified protected area. Nearest Protected Area to the project components is Fambonglho Wildlife Sanctuary i.e. 2.0 km. The notification of Eco Sensitive Zone of Fambonglho Wildlife Sanctuary was issued by MoEF&CC on 27th August 2014. All the components of Dikchu HEP are outside the notified ESZ.
National Park	No	
Wildlife Sanctuary	Yes	
Archaeological sites monuments/ historical temples etc.	No	
Additional information (if any)	-	NA

Availability of Schedule-I species in study area:
As per Wildlife Protection Amendment Act, 2022, Leopard, Leopard Cat, Jungle Cat, Jackal, Common Mongoose, Masked Palm Civet, Asiatic Black Bear, Barking Deer, Himalayan Goral, Indian Crested Porcupine, Himalayan Griffon-Vulture, Common Hill Myna, Indian Cobra, Monocled cobra, King Cobra, Chequered Keelback, Indian Rock Python, Bengal Monitor Lizard and Western Russel's Viperare are listed under schedule I species.

- **Public Hearing (PH) Details**

Advertisement for PH with date	Public Hearings for the existing 96 MW project were conducted by the State Pollution Control Board (SPCB) on 16 November 2007 and 19 November 2007 in East Sikkim (Gangtok) and North Sikkim (Mangan) districts, respectively.
Date of PH	
Venue	
Chaired by	
Main issues raised during PH	

No. of people attended	Further, as per the Terms of Reference (ToR) issued by the Expert Appraisal Committee (EAC), MoEF&CC, vide letter dated 04 May 2026 for the proposed capacity expansion from 96 MW to 110 MW, a fresh Public Hearing is exempted under Clause 7(ii).

- **Brief of base line Environment:**

Particulars	**Details**
Period of baseline data collection/Sampling period.	March 2025 to February 2026
Soil	
Air Environment	
Noise & Traffic	
Vegetation	
Faunal	
Water and Aquatic Ecology	
Socio-economic survey of study area villages	
Brief description on hydrology and water assessment as per the approved Pre-DPR:	Hydrological studies included comparison between derived flows and short-term observed flows measured near the intake location during 2005–06 and 2006–07. The observed and derived flow series were found to be reasonably comparable, thereby validating the adopted methodology for derivation of flows in the ungauged Dikchu catchment. Design flood studies for the project were carried out using multiple approaches including unit hydrograph method, flood frequency analysis, empirical methods such as Dicken's Formula and Ali Nawaz Jung Formula, and transposition of design floods from Teesta Stage III and Teesta Stage-V projects. Based on comparative assessment of various methods, the design peak flood for the diversion structure has been adopted as 1,100 m^3/sec. The reservoir area-elevation-capacity analysis indicates that at the Full Reservoir Level (FRL) of EL 950.00 m, the reservoir capacity works out to approximately 0.32 MCM with a water spread area of about 0.032 km^2. The permanent submergence area due to

	the project has been estimated as approximately 3.2 hectares.
Additional detail (If any)	-

- **Court case details:**

Court Case	Nil
Additional information (if any)	-

- **Status of other statutory clearances**

Particulars	**Letter no. and date**
Status of Stage- I FC	**Stage I granted:** File No. 3-SK C 086/2008-SHI/2302-04 FC dated 31-10 2008 **Stage I Amendment granted:** File No3 SK C 086/2008-SHI/3574-75 FC dated 08-02-2013 **Stage II granted:** File No 3-SK C 086/2008-SHI dated 22.01.2010 **Stage II Amendment granted:** File No.3 SK C 086/2008-SHI/3863-64 FC dated 21-03-2013.
Approval of Central Water Commission	--
Approval of Central Electricity Authority	--
Additional detail (If any) TEC approval from State Govt	TEC approval - 28.11.2008 Approval for Enhancing the Rated capacity- 17.06.2025
Is FRA (2006) done for FC-I	Yes

- **Details of the EMP**

  Against approved EMP cost of approximately Rs 2346.88 lakh, actual expenditure incurred amounts to approximately Rs 4054.38 lakh, resulting in additional expenditure of about Rs 1707.50 lakh over and above the approved allocation

S. No.	**EMP Component**	**Approved Cost (Rs lakh)**	**Actual Expenditure (Rs lakh)**	**Additional / Excess Expenditure (Rs lakh)**
1	Biodiversity Conservation	178.97	178.97	0.00
2	Fisheries Development Plan	55.75	55.75	0.00
3	Catchment Area Treatment	780.92	780.92	0.00

4	Compensatory Afforestation	82.97	119.32	36.35
5	Green Belt / Beautification	7.32	7.32	0.00
6	Quarry Rehabilitation	20.18	30.00	9.82
7	Control of Water & Air Pollution	4.00	23.16	19.16
8	Solid Waste Management	46.76	108.09	61.33
9	Muck Management Plan	76.03	263.01	186.98
10	EMP in Road Construction	148.00	303.17	155.17
11	Public Health	85.00	129.28	44.28
12	Resettlement & Rehabilitation	720.00	1875.66	1155.66
13	Disaster Management Plan	100.00	100.00	0.00
14	Free Fuel Provision	24.83	60.35	35.52
15	Environmental Monitoring Programme	16.15	19.38	3.23
	Total	**2346.88**	**4054.38**	**1707.50**

Consolidated Annual Environmental Monitoring, Sustainability and Community Welfare Commitments Proposed during Operation Phase of Enhanced Capacity Project

S. No.	Component	Scope / Coverage	Proposed Annual Cost (Rs lakh/year)
1	Water Quality Monitoring	Monitoring of physico-chemical and biological parameters at representative upstream, reservoir and downstream locations	3.24
2	Ambient Air Quality Monitoring	Monitoring of PM_{10}, $PM_{2.5}$, SO_2 and NOx at operational areas and nearby habitation	31.68
3	Noise Monitoring	Occupational and ambient noise monitoring at powerhouse, operational areas and nearby habitation	1.50
4	Erosion & Siltation Monitoring	Monitoring of vulnerable slopes, drainage channels and stabilization measures	3.00

5	Environmental Flow / Release Monitoring	Continuous online monitoring of downstream environmental flow releases	Included under operational monitoring system
6	Documentation & Compliance Reporting	Six-monthly compliance reporting, environmental database maintenance and statutory submissions	5.00
7	Bioengineering, Slope Stabilization & Ecological Restoration Measures	Stabilization of vulnerable slopes and erosion-prone areas through bioengineering measures, plantation of native soil-binding species, drainage improvement, ecological restoration and climate-resilient environmental protection measures	15.00
8	Community Welfare, Environmental Awareness & Sustainability Initiatives	Environmental awareness programmes, local sustainability initiatives, support for environmentally beneficial community welfare activities, plantation drives, village-level environmental campaigns and adaptive environmental management measures	15.00
	Total		**74.42**

The above environmental monitoring, environmental sustainability and community welfare measures shall continue during operation phase of the enhanced capacity project to ensure effective environmental surveillance, ecological conservation, climate resilience, environmental flow compliance and environmentally sustainable community development within the project influence area.

56.3.3 The EAC during deliberations noted the following:

- The EAC deliberated on the information submitted and presented during the meeting, observing that the proposal is for the grant of Environmental Clearance (EC) for expansion of capacity (from 96 MW to 110 MW) of Dikchu Hydroelectric Power Project (96 MW) in District Gangtok & Mangan, Sikkim by M/s Sneha Kinetic Power Projects Private Limited (erstwhile Greenko Energies Private Limited).

- The project is listed under item no. 1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification as a Category 'A' project, which requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

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

accredited by QCI/NABET on behalf of the Project Proponent.

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

- The committee observed that the Environmental Clearance has been granted by the Ministry on 01.04.2008. PP informed that after obtaining Environment Clearance and Forest Clearance in 2008, construction work was started in March 2011 and project started operation as on 31st March 2017. Subsequently, an amendment has been accorded by the ministry vide letter dated 05.03.2018 due to change in configuration of the project components.

- Further, PP submitted that based on discharge monitoring at site, it was observed that the inflow in the river for all the years from 2018 has been more than what is considered in the DPR. Additional power potential assessment has been undertaken based on the average of 10-daily discharges from 2018–19 to 2022–23. Revised power potential submitted to Government of Sikkim and approval for enhancing the rated capacity from 96 MW to 110 MW was issued by Power Department, Govt of Sikkim on 17.06.2025. Accordingly, the project obtained Terms of Reference from MoEF&CC vide letter dated 04/05/2026 for enhancing the power generation capacity from 96 MW to 110 MW without public hearing as project falls under Para 7(ii) of EIA Notification, 2006 as amended.

- The committee noted that the project falls in two districts namely East District and North District and the first Public Hearing was conducted on 16-11-2007 in Dikchu Village, East District and the second Public Hearing was conducted on 19-11-2007 at Ramthang Panchayat House Complex, Ramthang, Phodong, North Sikkim before prior Environmental Clearance granted by the Ministry on 01.04.2008. The Committee further noted that the issues raised by the local population, primarily relating to infrastructure development, employment, and local participation, have been addressed by the Project Proponent. The EAC also took note of the compliance verification by IRO, as recorded in the compliance report dated 15.12.2025, indicating that the stipulated conditions have been complied with, along with additional community development activities undertaken by the PP.

- The EAC was also informed that the Cumulative Impact Assessment & Carrying Capacity Study (CIA&CCS) of Teesta River Basin in Sikkim have been completed and the report has been accepted by the Ministry. PP further informed that the outcome and recommendations of CIA&CCS been dully incorporated in the updated EIA/EMP.

- The EAC noted that the baseline data has been carried out from March 2025 to February 2026 and all the parameters are within the prescribed norms. The Committee further observed that

the proposed enhancement in installed capacity from 96 MW to 110 MW can be achieved without any additional construction activities, hydro-mechanical modifications or requirement of additional land. The capacity augmentation is proposed solely through operational optimization of the existing facilities, resulting in an additional 14 MW of renewable energy generation. Further, as the project is already operational; for increase in capacity from 96 MW to 110 MW no additional cost is required.

- The EAC observed that nearest Protected Area to the project components is Fambonglho Wildlife Sanctuary i.e. 2.0 km. The notification of Eco Sensitive Zone of Fambonglho Wildlife Sanctuary was issued by MoEF&CC on 27th August 2014. All the components of Dikchu HEP are outside the notified ESZ.

- The EAC noted the submissions of the Project Proponent regarding the revised power potential study carried out based on actual discharge data observed during the operation period from FY 2018–19 to 2022–23. The Committee observed that the actual inflows in the Dikchu River are higher than those considered in the DPR, resulting in higher average annual generation (483 MU) as compared to the design energy of 439 MU. The EAC further noted that the revised study supports uprating of installed capacity from 96 MW to 110 MW, which has been approved by the Power Department, Government of Sikkim.

- The Committee also took note of the hydrological analysis indicating higher discharge availability, particularly during the monsoon period, enabling continuous operation of the 110 MW plant during June to September. The EAC observed that the revised power potential assessment based on actual measured data is more realistic as compared to earlier estimates derived from proxy data.

- The EAC considered the GLOF study undertaken for the project and noted that 24 glacial lakes were inventoried and assessed for criticality. The Committee observed that GL1 was identified as the most critical lake and detailed breach modelling has been carried out. The EAC further noted that the design GLOF of 616 cumecs at the project site has been duly assessed and the study has been appraised by the Central Water Commission (CWC), which concurred with the methodology and findings.

56.3.4 The EAC after examining the information submitted and detailed deliberations recommended the proposal for grant of prior Environmental Clearance for expansion of capacity (from 96 MW to 110 MW) of Dikchu Hydroelectric Power Project (96 MW) in District Gangtok & Mangan, Sikkim by M/s Sneha Kinetic Power Projects Private Limited (erstwhile Greenko Energies Private Limited), under the provisions of EIA Notification, 2006, as amended subject to compliance of applicable Standard EC conditions along with the following specific environmental safeguard conditions:

[A] Environmental management and Biodiversity conservation:

i. The outcome and recommendations of Teesta River Basin Study will have to be fully abided by the project proponent.

ii. The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. The budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also be updated proportionately.

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. PP shall prepare and implement a detailed and comprehensive wildlife conservation plan and the same shall be approved by the Chief wildlife warden. No vehicle purchase shall be allowed from funds earmarked for implementation of Wildlife Conservation plan.

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

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

[B] Disaster Management:

i. The Project Proponent shall undertake periodic assessments and monitoring of the potential risks associated with Glacial Lake Outburst Floods (GLOFs) through a reputed expert Government institution/agency having experience in glaciology, hydrology, and disaster risk assessment. The studies shall evaluate the status of upstream glacial lakes, potential flood scenarios, climate-induced changes, and associated risks to the Dikchu Hydroelectric Project and downstream areas. Based on the findings and recommendations of such assessments, the Project Proponent shall implement appropriate mitigation, adaptation, and risk-management measures, including strengthening of early warning systems, emergency preparedness plans, monitoring infrastructure, and other structural and non-structural safeguards, as necessary, to ensure the safety and sustainability of the project throughout its operational life.

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 shall be done as per instructions of the Forest Department.

iii. Necessary control measures such as water sprinkling arrangements, and construction of

paved roads leading to muck disposal sites etc. shall be taken up on priority to arrest fugitive dust at all the construction sites.

iv. Solid waste generated, especially plastic waste, etc. should not be disposed of as landfill material. It should be treated with scientific approach and recycled. Use of single-use plastics may be discouraged.

v. The Project Proponent shall obtain necessary approvals from Central Electricity Authority and Central Water Commission, as applicable, prior to commencement of construction/operation and submit the same to the concerned Regional Office of the Ministry for record and compliance.

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

[C] Socio-economic:

i. Solar panel be provided to the families living in rural areas within 10 km radius of project with annual maintenance.

ii. School up to 12th Standard with smart classes shall be established and managed to provide free quality education for children from project affected villages/Tribal villages.

iii. Scholarship programme shall be initiated for the youths in the project affected villages.

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

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. The Skill Development Plan shall mandatorily include the following components:

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

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

vii. Bio-Gas plant shall be installed in the Project affected area for Utilizing Cattle waste (Cow

Dung) into renewable source of fuel.

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

ix. 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.

x. Land acquired for the project, if any, 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.

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

[D] Miscellaneous:

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

ii. 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.

iii. 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.

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.

<u>Agenda Item No. 56.4</u>

Pinnapuram Integrated RESP-Storage project (1200 MW) in Sub District Gadivemula, Orvakal, Panyam, District Nandyal and Kurnool, Andhra Pradesh by M/s Greenko AP01 IREP Private Limited - Environmental Clearance for Expansion of Capacity (from 1200 MW to 1680 MW - reg.

[Proposal No. IA/AP/RIV/578688/2026; F. No. J-12011/12/2018-IA.I (R)]

56.4.1 The Member Secretary informed that, the representative of the PP vide email/letter dated 07.06.2026 expressed its inability to attend the EAC meeting due to unavoidable circumstances, and requested for deferment. Accordingly, the EAC decided to defer the proposal with advisory to PP to avoid such deferment.

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

Agenda Item No. 56.5

Formation of reservoir across Koraiyar river in Vickramasingapuram village of Ambasamudram Taluk in Tirunelveli District, Tamil Nadu by M/s Water Resources Department, Government of Tamil Nadu- Terms of Reference – reg

[Proposal No. IA/TN/RIV/569236/2026; F. No. J-12011/08/2026-IA.I(R)]

56.5.1 The proposal is for grant of Terms of Reference (ToR) to the project for Formation of reservoir across Koraiyar river in Vickramasingapuram village of Ambasamudram Taluk in Tirunelveli District, Tamil Nadu by M/s Water Resources Department, Government of Tamil Nadu.

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

i. The Government of Tamil Nadu, through the Water Resources Department (WRD), has proposed the Koraiyar Reservoir Project across the Koraiyar River in Vickramasingapuram Village of Ambasamudram Taluk, Tirunelveli District, Tamil Nadu.

ii. The Koraiyar River is a tributary of the Thamirabarani River Basin and presently its flood flows during monsoon season remain largely unutilized after feeding only one irrigation tank namely Singaperumalkulam. The proposed project aims to harness surplus monsoon runoff by construction of a reservoir and associated canal system for irrigation development, flood moderation, groundwater recharge and regional socio-economic development.

iii. Several drought-prone areas adjacent to the Thamirabarani Basin such as portions of Alangulam Taluk, Manur Taluk, Tirunelveli Taluk and surrounding command areas face recurring water shortages due to inadequate rainfall and limited dependable irrigation sources. Farmers of Manur and Pallamadai regions have been demanding assured irrigation support. The proposed project is intended to:

- Utilize presently unutilized flood waters of Koraiyar River
- Provide assured irrigation to deficit areas
- Stabilize existing ayacut
- Create additional irrigation potential
- Improve groundwater recharge
- Reduce downstream flood damages during heavy rainfall periods

iv. **Proposed Benefits**

- Irrigation Benefits
  - Existing ayacut presently served: 1225.66 ha
  - Proposed ayacut after project: 9091.5 ha
- Agricultural Benefits • Increase in cultivation of:
  - Paddy
  - Banana
  - Tomato
  - Chilli
  - Onion
- Other Benefits
  - Flood moderation in downstream reaches
  - Groundwater recharge through tank system
  - Increased cropping intensity
  - Rural employment generation
  - Improvement in socio-economic conditions

v. The geographical co-ordinate of the project are:
8°43'41"N, 77°21'.21"

vi. Formation of reservoir across Koraiyar River for Irrigation of 9091.50 Ha Cultural Command Area in Tirunelveli District of Tamil Nadu

vii. **Land requirement:** The total extent of land required for Reservoir, High Level canal and Supply Channel is about 819.211 Ha. The details are given below:

Nature of Land involved	**Area in Ha**
Non-Forest Land (A)	632.476 ha
Forest Land (B)	186.735 ha

Total Land (A+B)	**819.211 ha**

viii. **Demographic details in 10 km radius of project area :**
The proposed project is located in Ambasamudram Taluka in Tirunelveli District. As per Census 2011, the total population in the study area is 6,11,045. The male and Female population in study area blocks comprises about 49.40% and 50.59% respectively of the total population

ix. **Water requirement:**
Water requirement during Construction phase is estimated as 16.95 KLD

x. **Project Cost:** The estimated project cost is Rs 1875 Crores**.**

xi. **Project Benefit:** The proposed project shall irrigate cultural Command of 9091.50 Ha. The implementation of proposed project will significantly enhance the food production in the region and shall benefit the local population and Flood in the area.

xii. **Environmental Sensitive Area:** The proposed project falls under Kallakkad Mundanthurai Tiger Reserve (KMTR), Tamil Nadu.

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

xiv. **Alternative Studies:** No.

xv. **Details of Solid waste/ Hazardous waste generation/ Muck and its management:** Solid Waste – 14.24 TPA (Construction Phase); Management Plans to be prepared as part of EMP of EIA study after approval of ToR

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

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

- **Project details**

Name of the Proposal	Formation of reservoir across Koraiyar River in Vickramasingapuram village of

	Ambasamudram Taluk in Tirunelveli District, Tamil Nadu
Location (Including coordinates)	Village: Vickramasingapuram, Taluka: Ambasamudram, District: Tirunelveli, Tamil Nadu 8°43'41"N, 77°21'.21"E
Inter- state issue involved	Nil
Seismic zone	III

- **Category details**

Category of the project	Category A
Provisions	--
Capacity / Cultural command area (CCA)	9091.50 Ha
Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	--

- **Electricity generation capacity**: NA

- **ToR/ EC Details**

Cost of project	Rs. 1875 Crores
Total area of Project	819.211 Ha
Height of Dam from River Bed (EL)	43 m
Length of Tunnel/Channel	-
Details of Submergence area	278.105 Ha (Reserve Forest Land- 156.440 Ha, Government Land- 80.195 Ha and Private Land – 41.47 Ha)
Types of Waste and quantity of generation during construction/ Operation	Solid Waste – 14.24 TPA (Construction Phase)
E-Flows for the Project	As Applicable

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	Shall be proposed during EIA study

- **Muck Management Details**

No. of proposed disposal area/(type of land-Forest/Pvt. land)	All the Muck generated shall be utilized for Bund formation of the Reservoir
Muck Management Plan	--
Monitoring mechanism for Muck Disposal	--

- **Land Area Breakup**

Private land /Non-Forest Land	506.886 Ha
Government land	125.59 Ha
Forest Land	186.735 Ha
Total Land	819.211 Ha
Submergence area/Reservoir area	278.105 Ha
Additional information (if any)	--

- **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	Kallakkad Mundanthurai Tiger Reserve (KMTR)
National Park	No	
Wildlife Sanctuary	Yes	

- **Court case detail**: Nil

- **Miscellaneous**

Particulars	**Details**
Details of consultant	WAPCOS Limited
Project Benefits	• The implementation of proposed project will significantly enhance the food production in the region and shall benefit the local population • Mitigation of the Flood in the area
Status of other statutory clearances	Yet to be submitted
R&R details	To be prepared as part of EIA Studies
Additional detail (If any)	-

56.5.3 The EAC during deliberations noted the following:

- The EAC deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA study for Formation of reservoir across Koraiyar river in Vickramasingapuram village of Ambasamudram Taluk in Tirunelveli District, Tamil Nadu by M/s Water Resources Department, Government of Tamil Nadu.

- The EAC noted that the present project proposal comes under "B1" category; as per the provisions of the EIA Notification, 2006, as amended as Culturable Command Area (CCA 9091.50 Ha). However, the project components are falling under Kallakkad Mundanthurai Tiger Reserve (KMTR), it requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

- The EAC observed that the Koraiyar reservoir schemes comprises of the formation of reservoir across river Koraiyar in Vickramasingapuram village of Ambasamudram Taluk in Tirunelveli district of Tamilnadu. At present Koraiyar irrigates only one tank, namely Singaperumalkulam, in Vickramasingapuram village, having an ayacut of 46.22 acres, and then it confluences with the Tamiraparani River.

- The EAC noted that the total land required for the project is estimated to be 819.211 Ha. Out of which, non-forest land affected is 632.476 ha and forest land involved is about 186.735 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 EAC noted with concern that the proposed project is located within the Kallakkad Mundanthurai Tiger Reserve, a protected area of high ecological significance that serves as a critical habitat for several endemic wildlife species, including the Tiger, Nilgiri langur and other flora and fauna of conservation importance.

- The Committee observed that the PP had not adequately examined alternative options for meeting the proposed command area requirements. The EAC further opined that PP shall explore the alternate sites in the headwater of Chittar basins for enhancing the capacity of Manur and Pallamadai tanks located in the same river basin. This may achieve the intended objectives while minimizing ecological/ environmental impacts. The Committee also noted that such an alternative could potentially be implemented with comparatively lower investment and reduced environmental implications.

- The EAC emphasized that, considering the environmental sensitivity of the project location, a rigorous alternatives analysis is an essential component of project planning and appraisal.

- During the deliberations, the Committee opined that the possibility of relocating the proposed dam site to other tributaries of Chittar river basin to achieve the target and it may potentially lie outside the boundary of the Tiger Reserve and could therefore substantially reduce the project's ecological footprint and associated impacts on wildlife habitats and protected ecosystems, which will be comparatively lower investment requirements.

56.5.4 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 Formation of reservoir across Koraiyar river in Vickramasingapuram village of Ambasamudram Taluk in Tirunelveli District, Tamil Nadu by M/s Water Resources Department, Government of Tamil Nadu, for want of following information:

i. The PP shall undertake and submit a comprehensive alternatives analysis for achieving the intended irrigation and command area objectives, including but not limited to alternative project configurations, locations, and design options, with due consideration to environmental, ecological, technical, and economic parameters. The alternatives analysis shall be supported by site-specific data, maps, and relevant studies, clearly establishing the rationale for selection of the proposed site over other feasible options, particularly in view of the environmental sensitivity of the region.
ii. The Project Proponent (PP) shall furnish a detailed justification for siting the proposed project within the Kallakkad Mundanthurai Tiger Reserve, a protected area of high ecological significance, including an assessment of anticipated impacts on wildlife habitats, particularly on tiger populations and other endemic flora and fauna of conservation importance.
iii. The PP shall specifically examine the feasibility of relocating the proposed dam site to other undammed tributaries of Chittar river basin, outside the boundary of the Tiger Reserve, and provide a comparative analysis vis-à-vis the current proposal in terms of ecological impacts, project cost, technical viability, and overall benefits.

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

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

*****

ANNEXURE

ATTENDANCE

S. No.	Name of Member	Role	Remarks
1.	Prof. Govind Chakrapani	Chairman	P
2.	Dr. Uday Kumar R Y	Member	P
3.	DR. J. V. Tyagi	Member	P
4.	Shri Ajay Kumar Lal	Member	P
5.	Shri Balram Kumar	Member Representative of Central Water Commission (CWC)	P
6.	Dr. Kartik Sapre	Member	A
7.	Shri Rakesh Goyal	Member Representative of Central Electricity Authority (CEA)	P
8.	Dr. J.A. Johnson	Representative of Wildlife Institute of India (WII)	P
9.	Dr. A. K. Sahoo	Representative of Central Inland Fisheries Research Institute (CIFRI),	A
10.	Shri Yogendra Pal Singh	Member Secretary	P

APPROVAL OF THE CHAIRMAN

========== Forwarded message ==========
From: chakrapani govind <chakrapani.govind@gmail.com>
To: "Yogendra Pal Singh"<yogendra78@nic.in>
Cc: "govind chakrapani"<govind.chakrapani@es.iitr.ac.in>, "Dr Krishnendu Mondal" <krishnendu.mondal@gov.in>
Date: Mon, 22 Jun 2026 09:58:50 +0530
Subject: Re: Draft MOM of the 56TH EAC (RVHEP) meeting held on 8.06.2026-reg.
========== Forwarded message ==========

Approved.
Chakrapani

On Mon, 22 Jun, 2026, 9:57 am Yogendra Pal Singh, <yogendra78@nic.in> wrote:

> Sir,
>
> The draft MOM of the of the 56th EAC meeting held on 8.06.2026 were circulated to all members of the EAC. The comments received from Dr. J A Jhonson have been incorporated suitably. Accordingly, the corrected draft MOM are attached herewith for your approval please.
>
> With Regards,
>
> **Yogendra Pal Singh**
> **Scientist 'F'**
> **Government of India**
> **M/o Environment, Forest and Climate Change**
> **Room No. 236, 2nd Floor, Vayu Wing**
> **Indira Paryavaran Bhawan**
> **Jor Bagh, New Delhi-110003**
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