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Government of India
Ministry of Environment, Forest and Climate Change
IA Division
(River Valley and Hydroelectric Projects)
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Minutes of 46th MEETING OF THE EXPERT APPRAISAL COMMITTEE meetin g River Valley and Hydroelectric Projects held from 09/01/2026 to 09/01/2 026 **Date:** 21/01/2026

MoM ID: EC/MOM/EAC/343449/12/2025

Agenda ID: EC/AGENDA/EAC/343449/12/2025

Meeting Venue: N/A

Meeting Mode: Virtual

Date & Time:

09/01/2026	10:00 AM	05:30 PM

1. Opening remarks

The 46th meeting of the EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on through virtual mode, under the Chairmanship of Prof. G. J. Chakrapani.

2. Confirmation of the minutes of previous meeting

The Minutes of the 45th EAC meeting held on 19th December, 2025 were confirmed.

3. Details of proposals considered by the committee

Day 1 -09/01/2026

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Veeraballi Off stream Closed Loop Pumped Storage Project by **ANNAMAYYA PUMPED STORAGE PROJEC T PRIVATE LIMITED** located at **ANNAMAYYA,ANDHRA PRADESH**

Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/AP/RIV/563180/2025	J-12011/07/2020-IA-I	29/12/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.1.2. Project Salient Features

Agenda Item No. 45.1
Veeraballi Closed Loop Pumped Storage Project (1800 MW) in an area of 489.91 ha at Village Vangimalla, Sub-District Veeraballe, District Annamayya, Andhra Pradesh from M/s Annamayya Pumped Storage Project Private Limited- Environmental Clearance (EC) – reg. [Proposal No. IA/AP/RIV/563180/2025; F. No. J-12011/07/2020-IA-I]
46.1.1: The Member Secretary informed that, the representative of the PP vide email/letter dated 08.01.2026 expressed its inability to attend the EAC meeting due to unavoidable circumstances, and requested for deferment. Accordingly, the EAC agreed to consider the proposal in a later meeting.

3.1.3. Deliberations by the committee in previous meetings

N/A

3.1.4. Deliberations by the EAC in current meetings

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

3.1.5. Recommendation of EAC

Deferred for PP not attending the meeting

3.2. Agenda Item No 2:

3.2.1. Details of the proposal

ASSAM/PSP-02 by **ASSAM POWER DISTRIBUTION COMPANY LIMITED** located at **WEST KARBI ANGLONG,ASSAM**

Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/AS/RIV/558604/2025	J-12011/44/2025-IA.I(R)	25/11/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.2.2. Project Salient Features

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

[Proposal No. IA/AS/RIV/558604/2025; F. No. J-12011/44/2025-IA.I (R)]

46.2.1 The proposal is for grant of Terms of Reference (ToR) to the project Assam/PSP-02 Closed-Loop Pumped Storage Project (1000 MW) in an area of 259.6 Ha located at Village Baithalangso and Sardangang, Sub District Donka, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited.

46.2.2 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. Assam/PSP-02 Project is 'Off-stream closed loop' pumped storage scheme with an installed capacity of 1000 MW. The scheme of operation considered for the project is daily regulation to meet the demand of about 6 hours of peak power daily. Off-peak pumping hours are considered as 6.94 hours daily.

ii. The proposed Assam/PSP-02 is located in West Karbi Anglong District of Assam State. The project with 1000 MW of Pumped Storage capacity is proposed for the development near Ouguri village. This PSP will comprise of two reservoirs upper reservoir and lower reservoir (both are to be constructed newly. The upper reservoir of the proposed Assam-02 Pumped Storage Project (PSP) will be created by constructing a dam across a natural depression in the undulating landform, which features a gentle gradient, and the proposed lower reservoir will be formed by constructing a dam across a natural depression in the undulating landform which is located across a small nallah which joins the Umiam river. Both upper and lower dams are located across non-perennial nallahs.

iii. Assam-02 project is a pumped storage project and hence no consumptive use of water has been envisaged for power generation. The reservoirs will be filled only once in its lifetime and the same water will be recycled daily between upper and lower reservoirs. The water required for the initial filling and water lost due to evaporation will be replenished from the Umiam River by a pipeline arrangement of 0.6 m diameter and 600 m length from the lower reservoir.

iv. The geographical co-ordinate of the project are Lower Reservoir: 92.271717° E; 26.032182° N and Upper Reservoir : 92.305884° E; 26.006095° N.

v. **Land requirement:** The total land required for the construction of various components and related works for Assam-02 PSP is estimated to be around 259.60 ha, out of which 115.40 ha is non-forest land and 144.20 ha is forest land.

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

Parameters	Ouguri	Tharakunchi	Silangkunchi	Hadau	Tharve Langso
Households	30	81	66	52	12
Total Population	133	462	438	311	76
Male Population	68	227	209	151	37

Female Population	65	235	229	160	39
Scheduled Caste (SC) Pop.	0	0	0	0	0
Scheduled Tribe (ST) Pop.	40	445	438	310	67

(Source: Census 2011; Mission Antyodaya 2020)

The site selection process is based on following approaches:

· Utilization of available head at project site to the maximum extent feasible

· Development of economical and optimized layout

· Ease of construction

· Minimal area of land acquisition to accommodate various project components

· Avoid / minimize submergence of forest land

· Avoid interference with existing / allotted schemes

· Avoid location of project within Eco Sensitive Zones (ESZ) of existing Wildlife Sanctuaries

Several alternative sites for the pumped storage project were assessed area around the provide location, and two sites (Site 1 and Site 2) were shortlisted after site visit.

Parameters	**Units**	**Site 1**	**Site 2**
Upper Dam (Lat.,Long.)		26.004829°N	25.953129°N
		92.305613°E	92.272111°E
Lower Dam (Lat.,Long.)		26.026472°N	26.026472°N
		92.269677°E	92.269677°E
Installed Capacity	MW	1000	1000
Generation Hours	hr	6	6
Net storage Requirement	MCM	5.74	5.81
Gross Head (H)	m	439	440.7
Upper Dam/ Reservoir			
Dam length	m	578	315
Dam height (Approx)	m	51	27
Submergence area	sq km	0.56	0.84
Lower Dam/ Reservoir			

Dam length	m	492	492
Dam height (Approx)	m	39	39
Submergence area	sq km	0.48	0.48
Water Conductor System	km	3	9
L/H Ratio		7.94	20.42
Powerhouse type		Underground	Underground
Accessibility to Upper Dam/ Reservoir		Upper reservoir is accessible.	Upper reservoir is accessible.
Accessibility to Lower Dam/ Reservoir		Lower reservoir is accessible.	Lower reservoir is accessible.
Source of water		Umiam river, which is approx. 600 m away	Umiam river, which is approx. 600 m away
Land requirement (approx.)	Ha	Total Land = 259.60 Forest land = 144.20 Non forest land = 115.40	Total Land = 298 Forest land = 140 Non forest land = 158
Remarks			

Name of the Proposal	Assam/PSP-02 Closed loop Pumped Storage Project (1000 MW)
Location (Including coordinates)	Lower Reservoir : Latitude: 26.032182° N Longitude: 92.271717° E Upper Reservoir : Latitude: 26.006095° N Longitude: 92.305884° E
Inter- state issue involved	No
Seismic zone	Zone-V

Category of the project	A
Provisions	

Capacity / Cultural command area (CCA)	1000 MW
Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	Nil
Powerhouse Installed Capacity	1000 MW
Generation of Electricity Annually	2081 MU
No. of Units	4 nos. (4 x 250 MW)
Additional information (if any)	Nil
Cost of project	5224.0 Cr.
Total area of Project	259.6 ha
Height of Dam from River Bed (EL)	Lower Dam – 39.0 m Upper Dam –51.0m & 24.0 m
Length of Tunnel/Channel	3000 m
Details of Submergence area	106.0 ha
Types of Waste and quantity of generation during construction/ Operation	Muck from excavation, solid waste from labour colony and construction wa ste
E-Flows for the Project	Not Applicable, as this is Closed Lo op Pumped Storage Project (PSP)
Is Projects earlier studies in Cumulative Impact assess ment & 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 ri ver ecosystem.	No
No. of trees/saplings proposed in view of 'Ek Ped Ma a Ke Naam' campaign	500
No. of proposed disposal area/ (type of land- Forest/Pvt. land)	15 ha (Non-Forest Land)
Muck Management Plan	Will be Provided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Will be Provided in EIA/EMP report

Private Land	115.4 ha
Government land	-
Forest Land	144.2 ha
Total Land	259.6 ha
Submergence area/Reservoir area	106.0 ha
Additional information (if any)	Nil

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate / letter/ Remarks**
Reserve Forest/Protected Forest Land	--	· Pobitora WLS is about 29.5 km from project area.
National Park	--- --	
Wildlife Sanctuary	--- --	

Particulars	**Details**
Details of consultant	M/s. R S Envirolink Technologies Pvt. Ltd. (RSET) (NABET Accredited Consultant Organization) Certificate No : NABET/EIA/25-28/RA0415 Validity : August 15, 2028 Contact Person : Mr. Ravinder Bhatia Name of Sector : River Valley and Hydroelectric Projects Category : A MoEF Schedule : I(C) Address : 403, Bestech Chambers, Block-B, Sushant Lok Phase I, Sector 43, Gurugram, Haryana - 122009 E-mail : ravi@rstechnologies.co.in Land Line : (0124) 4295383 Cellular : (+91) 9810136853
Project Benefits	o Least expensive source of electricity, not requiring fossil fuel for generation o An emission-free renewable source o Balancing grid for demand driven variations o Balancing generation driven variations o Voltage support and grid stability
Status of other statutory clearances	Forest Clearance - Online application seeking forest diversion for around 144.2 Ha after recei

	pt of ToR Approval. Alongside, other statutory clearances (as applicable) from State as well a s Central government will be obtained post co mpletion of Detailed Project Report.
R&R details	Details shall be evaluated during EIA/EMP Studi es

3.2.3. Deliberations by the committee in previous meetings

Date of EAC 1 :10/12/2025

Deliberations of EAC 1 :

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

3.2.4. Deliberations by the EAC in current meetings

46.2.3 The EAC during deliberations noted the following:

· The Expert Appraisal Committee (EAC) deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA/EMP and Public hearing for Assam/PSP-02 Closed-Loop Pumped Storage Project (1000 MW) in an area of 259.6 Ha located at Village Baithalangso and Sardangang, Sub District Donka, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited.

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

· The EAC observed that the project was earlier considered by the EAC in its 44th meeting held on 10.12.2025 wherein PP vide email/letter dated 05.12.2025 expressed its inability to attend the EAC meeting due to unavoidable circumstances and requested for defer the project. Accordingly, the EAC decided to defer the project on request of PP.

· The EAC noted that the total land requirement for the project is around 259.60 ha, out of which 115.40 ha is non-forest land and 144.20 ha is forest land. Diversion of forest land for non-forest purpose will be involved for construction of Project components. However, it was observed that the application for Stage-I Forest Clearance (FC) has been submitted vide proposal no. FP/AS/HYD/IRRIG/558058/2025 dated 13.11.2025.

· The committee noted that Assam-02 (1000 MW) will require 8.20 MCM for initial reservoir filling and thereafter 0.43 MCM per year will be required on annual basis from Umiam river for restoring the storage capacity lost due to evaporation.

· It has been observed that Memorandum of Understanding has been signed between Government of Assam and M/s Assam Power Distribution Company Limited to build PSP on September 10, 2025.

· There is no National Park, Wildlife Sanctuary, Biosphere Reserve, Tiger, Wildlife Corridor etc. within 10 km distance from the project site. Pobitora WLS is about 29.5 km from project area.

· The EAC further noted that another project i.e. Greenko Assam - 01 Closed Loop Pumped Storage Project (900 MW) in an area of 251.94 Ha in Village Amguri, Baithalangso, Kiling Bagicha, Nali Bagicha No. and Sardangang, Sub District Marigaon and Donka, District Morigaon and West Karbi Anglong, Assam by M/s Greenko Energies Private Limited of which developer has been changed to M/s Assam Power Distribution Company Limited has obtained Terms of reference for conduction EIA/EMP vide letter dated 02.06.2025. Also, it has been informed by the PP that there are several more project that has been proposed in the region.

· The Meghalaya State Boundary is 0.1 km away from the project boundary.

· The EAC noted that the forest area falling within and around the project site comprises a very dense canopy, indicating a mature and ecologically sensitive forest ecosystem. Such dense canopy cover suggests the presence of significant biodiversity, including large trees, undergrowth, and potential habitats for wildlife species. The Committee emphasised the need for detailed survey of the study area to collect appropriate data on wild flora and fauna so that impact prediction can be done accurately considering the aspects like fragmentation of habitat, and disruption of ecological functions etc. The EAC also noted that the proposed Project is located in an ecologically sensitive region falling within the transitional zone of the Indo-Burma Biodiversity Hotspot, which is globally recognized for its high levels of biological diversity and endemism. The Committee noted that the forested tracts in the project area support species of conservation concern and function as important ecological corridors and breeding habitats for several endemic and migratory species. The landscape is characterized by semi-evergreen and moist deciduous forests, which are also traditionally utilized by local tribal communities for their livelihood and subsistence needs. In view of the above, the EAC emphasized that the project area entails significant ecological and socio-ecological sensitivities that warrant careful consideration during appraisal. During the deliberations, the EAC highlighted concerns w.r.t the proximity to notified forest areas and potential wildlife movement routes, underscoring the vulnerability of local ecosystems to habitat fragmentation, hydrological disruption, and loss of biodiversity. In light of these observations, the EAC recommended that a site visit be undertaken by a sub-group of the Committee to physically assess the ecological character of the area and verify forest dependencies before considering the proposal for grant of TOR.

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

3.2.5. Recommendation of EAC

Deferred for ADS

3.3. Agenda Item No 3:

3.3.1. Details of the proposal

ASSAM/PSP-01 by **ASSAM POWER DISTRIBUTION COMPANY LIMITED** located at **WEST KARBI ANGLONG,ASSAM**			
Proposal For		Application for amendment in ToR (for categories A & B1)/Amendment in EC (for category B2)- Form-3	
Proposal No	**File No**	**Submission Date**	**Activity** **Sub-Activity** **(Schedule Item)**

IA/AS/RIV/560544/2025	J-12011/21/2025-IA.I(R)	06/12/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.3.2. Project Salient Features

Agenda Item No. 46.3

Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha located at Village Tharakhunji, Sub District Baithalangso, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited- Amendment in Terms of References (TOR) – reg.

[Proposal No. IA/AS/RIV/560544/2025; F. No. J-12011/21/2025-IA.I (R)]

46.3.1 The proposal is for grant of amendment in terms of references for Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha located at Village Tharakhunji, Sub District Baithalangso, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited.

46.3.2 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. Assam Power Distribution Company Limited proposes to develop Off-Stream Closed Loop Pumped Storage Project (PSP) near Tharakhunji (V), Donka subdivision of Karbi Anglong District in the state of Assam. The total capacity of proposed PSP is 900 MW (5679 MWH).

ii. The proposed project involves creation of upper reservoir (26° 0'7.72"N & 92°16'18.94"E) and lower reservoir (26°0'8.81"N & 92°15'1.23" E). The proposed scheme involves creation of new upper reservoir & lower reservoir. It is proposed to construct Roller Compacted Concrete (RCC) Main Dam-1 for the weighted average height of 41.01 m (with maximum height of 58 m) for the length of 362 m with gross storage of 0.356 TMC capacity and Lower reservoir of Roller Compacted Concrete (RCC) Main Dam-2 for the weighted average height of 32.84 m (with maximum height of 68 m) for the length of 425 m with gross storage of 0.255 TMC capacity.

iii. The Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project, proposed at Tharakhunchi Village in Donka sub-division of West Karbi Anglong district, Assam, was initially accorded Terms of Reference (TOR) in the name of Greenko Energies Pvt. Ltd. (GEPL) on 02.06.2025 for an installed capacity of 900 MW (2 × 300 MW + 2 × 150 MW), with an estimated land requirement of 251.94 ha, including 134.24 ha of forest land and 117.70 ha of non-forest land. The TOR was Subsequently, transferred to Assam Power Distribution Company Limited (APDCL) on 06.11.2025.

iv. The project proponent has requested for amendment in the ToR with the details are as under:

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
1	Subject	Greenko Assam -01 Closed Loop Pumped Storage Project (900 MW) in an area of 251.94 Ha in Village A	Assam PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha in village Tharakhunchi , Donka Su	The project title has been updated to reflect (i) the transfer of the ToR from Greenko Energies

S. No.	Para of ToR issued by MoE F&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
		mguri, Baithalangso, Kiling Bagicha, Nali Bagicha No. and Sardangang, Sub District Marigaon and Donka, District Morigaon and West Karbi Anglong, Assam by M/s Greenko Energies Private Limited - Terms of Reference (ToR) - reg.	b-division, District West Karbi Anglong, Assam by M/s Assam power Distribution Company Limited - Terms of Reference (ToR) - reg.	Private Limited to APDCL, and (ii) the revised project boundary based on detailed surveys and optimization. With the updated layout and land requirement, the entire project now falls in village (Tharakhunchi), Sub Division Donka and district (West Karbi Anglong).
2	Point No. 1, 5	Land details 251.94 hectares. Location: The project is located in the villages of Amguri, Baithalangso, Kiling Bagicha, Nali Bagicha No., and Sardangang, falling under the sub-districts of Marigaon and Donka, within the districts of Morigaon and West Karbi Anglong, Assam and is being undertaken by M/s Greenko Energies Private Limited.	Land details 308.79 hectares. Location: The project is located in the village of Tharakhunchi, falling under the Sub division Donka, within the district of West Karbi Anglong, Assam and is being undertaken by Assam Power Distribution Company Limited.	The increase in land requirement is due to change in the project layout following detailed site surveys and geological mapping, which made realignment and change of size of various components. The change in FRL, dam type, and salient project features also required additional area for infrastructure etc. Furthermore, social constraints and a community forest also made change in the proposed land.

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
3	Point No. 7	Land details 251.94 hectares. Name of the Project: Greenko Assam -01 Closed Loop Pumped Storage Project	Land details 308.79 hectares. Name of the Project: Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project	Due to Change in layout and TOR Transfer
4	Annexure-1 Specific Terms of Reference for (River Valley/irrigation Projects) 5. Environmental Management And Biodiversity Conservation Point 5.3	Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for 117.70 ha of forest land involved in the project shall be submitted within stipulated time.	Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for 79.37 ha of forest land involved in the project is submitted. The proposal is processed by State Secretary for Recommendation after PSC – II. Site Visit Report uploaded by DIG.	Forest land has been reduced by 54.87 Ha, due to the change in project layout, alignment, subjecting to social issue and to explore the possibilities for reducing the Forest land requirement.
5	Annexure-II Subject	Greenko Assam -01 Closed Loop Pumped Storage Project (900 MW) in an area of 251.94 Ha in Village Amguri, Baithalangso, Kiling Bagicha, Nali Bagicha No. and Sardangang, Sub District Marigaon and Donka, District Morigaon and West Karbi Anglong, Assam by M/s Greenko Energies Private Limited	Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha in Village Tharakhunchi, Sub-division Donka, District West Karbi Anglong, Assam by Assam Power Distribution Company Limited	Due to Change in layout & User Agency
6	Annexure-II The details of the proje	Greenko Energies Pvt. Ltd., hereinafter referred as GE	Assam Power Distribution Company Limited hereinafter referred as	Due to Change in layout & User Agency

S. No.	Para of ToR issued by MoE F&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
	ct: - Point i	PL, proposes to develop Pumped Storage Project (PSP) near located at Tharakhunchi Village, Donka subdivision of Karbi Anglong District and Amguri, Killing Bagicha villages, Marigaon Circle subdivision of Marigaon District in Assam.	APDCL, proposes to develop Assam /PSP-01 located at Tharakhunchi Village, Donka Sub-division of Karbi Anglong District in Assam.	
7	Annexure-II The details of the project: - Point ii	The total capacity of proposed PSP is 900 MW (5481 MWH) and it is proposed that One-time requirement of 0.833 TMC of water will be lifted from existing nearby Umiam River (which is located about 2 Km away from the proposed Lower reservoir) and will be stored in the lower reservoir to be constructed and used cyclically for energy storage and discharge, out of which 0.217 TMC of water will be used for power generation by re-circulation with 6.09 hours storage capacity. Evaporation losses if any will b	The total capacity of proposed PSP is 900 MW (5679 MWH) and it is proposed that One-time requirement of 0.395 TMC of water will be lifted from existing nearby Umiam River (which is located about 3 Km away from the proposed Lower reservoir) and will be stored in the lower reservoir to be constructed and used cyclically for energy storage and discharge, out of which 0.216 TMC of water will be used for power generation by re-circulation with 6.31 hours storage capacity. Evaporation losses if any will be recouped periodically from Umiam River.	Since the storage hour and rated capacity increased, the one-time filling requirement of water also increased.

S. No.	Para of ToR issued by MoE F&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
		e recouped periodically from Umiam River.		
8	Annexure-II The details of the project: - Point iii	The geographical co-ordinate of the project are: Upper Reservoir : 26° 0' 5.34"N & 92°16'19.23"E Lower Reservoir: 26° 0'12.00"N & 92°15'8.00"E	The geographical co-ordinate of the project are: Upper Reservoir : 26° 0'7.72"N & 92°16'18.94"E Lower Reservoir: 26° 0'8.81"N & 92°15'1.23"E	The change in the FRL and layout of the project caused the change in geographical co-ordinate
9	Annexure-II The details of the project: - Point iv	The proposed scheme involves creation of new upper reservoir & lower reservoir. It is proposed to construct Geomembrane Faced Rockfill Dam (GFRD) embankment for the weighted average height of around 20m (with maximum height of 43m) for the length of 648 m with gross storage of 0.242 TMC capacity and Lower reservoir of Geomembrane Faced Rockfill Dam (GFRD) embankment for the average height of 17m (with maximum height of 43m) for the length of 675 m with gross storage of 0.220 TMC capacity. Intake struct	The proposed scheme involves creation of new upper reservoir & lower reservoir. For forming the new upper reservoir to store the water, it is proposed to construct Roller Compacted Concrete (RCC) Main Dam for the weighted average height of around 31.90 m (with maximum height of 70 m) for the length of 512 m and Roller Compacted Concrete (RCC) Saddle Dam for the weighted average height of around 21.81 m (with maximum height of 59 m) for the length of 421 m. Similarly, for creating the new lower reservoir, it is proposed to construct Roller Compacted Concrete (RCC) Main Dam-1 for the weighted average height of 41.01 m (with maximum height of	The dam type has been revised based on site-specific geological conditions identified through geological mapping, and the project's water requirement has increased from 0.245 TMC to 0.395 TMC due to the change in FRL.

S. No.	Para of ToR issued by MoE F&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
		ure and trash rack with four number of independent pressure shafts from Power block of upper reservoir is connected to Underground Powerhouse located at about 883.97 m. The Powerhouse is equipped with two Three (3) phase, alternating current synchronous/ generator motor semi umbrella type with vertical shaft type units composed with generator/motor and a pump/turbine having generated/pumping capacity of 300MW / 330MW respectively and two Three (3) phase, alternating current synchronous/ generator motor semi umbrella type with vertical shaft type units composed each of a generator/motor and a pump/turbine having generated/pumping capacity of 150MW / 165MW.	58 m) for the length of 362 m and Roller Compacted Concrete (RCC) Main Dam-2 for the weighted average height of 32.84 m (with maximum height of 68 m) for the length of 425 m. Intake structure and trash rack with three number of independent pressure shafts from Power block of upper reservoir is connected to Underground Powerhouse located at about 976.68 m. The Powerhouse is equipped with two Three (3) phase, alternating current synchronous/ generator motor suspended type with vertical shaft type units composed with generator/motor and a pump/turbine having generated/pumping capacity of 300MW / 330MW respectively and two Three (3) phase, alternating current synchronous/ generator motor suspended type with vertical shaft type units composed each of a generator/motor and a pump/turbine having generated/pumping capacity of 150 MW / 165MW.	
10	Annexure-II The details of the proje	The Project will generate 900 MW by utilizing a desi	The Project will generate 900 MW by utilizing a design discharge of	Due to Change in layout minor changes in the

S. No.	Para of ToR issued by MoE F&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
	ct: - Point v	gn discharge of 280.50 Cumec and rated head of 367.50m. The cycle efficiency of the project is expected to be around 80%. One 400 KV Double Circuit transmission line with Twin Moose Conductor of length 55 KMs (appx.) from PSP will be connected to 400 / 220 kV MISA Sub station PGCIL, Dighaljar, Assam for evacuation of power during turbine mode and pumping of power from grid during pumping mode.	269.18 Cumec and rated head of 376.33 / 375.63 m (Large Unit / Small Unit). The cycle efficiency of the project is expected to be around 81.47%. One 400 KV Double Circuit transmission line with Twin Moose Conductor of length 40-50 KMs (appx.) from PSP will be connected to 400 kV Makoiram Substation under STU, West Karbi Anglong District, Assam. for evacuation of power during turbine mode and pumping of power from grid during pumping mode.	salient features.
11	Annexure-II The details of the project: - Point vi Land requirement	Forest Land: 134.24 Ha Non-forest Land: 117.70 Ha Total Land: 251.94 Ha	Forest Land: 79.37 Ha Non-forest Land: 229.42 Ha Total Land: 308.79 Ha	Due to Change in layout
12	Annexure-II The details of the project: - Point vii Demographic details in 10 km radius of project area	The proposed project area is located in Tharakhunchi Village, Donka Subdivision of Karbi Anglong District, and in Amguri and Killing Bagicha villages, Marigaon Subdivision, Marigaon District, Assam.	The proposed project area is located in Tharakhuchii Village, Donka Sub division of West Karbi Anglong District, Assam.	Due to Change in layout

S. No.	Para of ToR issued by MoE F&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
13	Annexure-II The details of the project: - Point viii Water requirement	Greenko Assam-01 Off-Stream Closed Loop Pumped Storage Project PSP (900 MW) will require 6.94 MCM (0.245 TMC) for initial reservoir filling and thereafter ~ 1.13 MCM (0.04 TMC) power generation by re-circulation. Evaporation losses if any will be recouped periodically from nearby Umiam River for restoring the storage capacity lost due to evaporation.	Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project PSP (900 MW) will require 11.174 MCM (0.395 TMC) for initial reservoir filling and thereafter 6.121 MCM (0.216 TMC) power generation by re-circulation. Evaporation losses if any will be recouped periodically from nearby Umiam River for restoring the storage capacity lost due to evaporation.	-
14	Annexure-II The details of the project: - Point ix Project Cost	Project Cost: The estimated project cost is Rs 5849.49 crore. Total capital cost earmarked towards environmental pollution control measures will be worked out during EIA study as well as the Recurring cost (operation and maintenance).	Project Cost: The estimated project cost is Rs 5849.50 crore. Total capital cost earmarked towards environmental pollution control measures will be worked out during EIA study as well as the Recurring cost (operation and maintenance).	The project cost has been revised by Rs 1.00 lakh to incorporate refinements.
15	Annexure-II The details of the project: - Point x Project Benefit	Project Benefit: Total Employment will be 2000 persons as direct & 150 persons indirect after expansion.	Project Benefit: Total Employment will be 2000 persons as direct & 250 persons indirect after expansion.	

S. No.	Para of ToR issued by MoE F&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
16	Annexure-II The details of the project: - Point xv The salient features of the project are as under: 1. Project details	Name of the Proposal: Greenko Assam-01 Off-Stream Closed Loop Pumped Storage Project Location: The proposed project involves the creation of Upper Reservoir 26° 0'5.34"N & 92° 16'19.23"E Lower Reservoir 26° 0'12.00"N & 92°15'8.00"E	Name of the Proposal: Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha in village Tharakhunchi , Sub division Donka, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited The proposed project involves the creation of Upper Reservoir 26° 0' 7.72"N & 92°16'18.94" E Lower Reservoir 26° 0' 8.81"N & 92°15'1.23"E	Due to Change in layout & user agency
17	Annexure-II The details of the project: - Point xv The salient features of the project are as under: 3. Electricity generation capacity	Powerhouse Installed Capacity: 900 MW (5481 MWH) Generation of Electricity Annually: 1899 MU	Powerhouse Installed Capacity: 900 MW (5679 MWH) Generation of Electricity Annually: 1969.20 MU	The increase in rated capacity has led to a corresponding rise in annual electricity generation.
18	Annexure-II The details of the project: - Point xv The salient features of the project are as under: 4. ToR/EC Details	Cost of project: 5849.49 Cr. Total area of Project: 251.94 Ha Height of Dam from River Bed (EL): · Upper reservoir max- 43 m & Avg-20 m · Lower reservoir max- 43 m & Avg 17 m Length of Tunnel/C	Cost of project: 5849.50 Cr. Total area of Project: 308.79 Ha Height of Dam from River Bed (EL): · Upper reservoir Main Dam: max- 70 m & Avg-31.9 m and Saddle Dam: max- 59 m & Avg- 21.81 m · Lower reservoir Main Dam-1: max- 58m	Revisions in the project layout and site-specific geological conditions necessitated changes in the location and area of the two reservoirs.

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
		hannel: 335Mts (TRC) & 257Mts Intake Details of Submergence area: 108.44 Ha	& Avg 41.01 m and Main Dam-2: max-68 m & Avg- 32.84 m Length of Tunnel/Channel:777.98Mts (TRC) 235.42 Mts Intake · Details of Submergence area: 138.7 Ha	
19	Annexure-II The details of the project: - Point xv The salient features of the project are as under: 5. Muck Management Details	No. of proposed disposal area/ (type of land- Forest/Pvt. land): Two Locations of 25 Ha in Non-Forest Area	No. of proposed disposal area/ (type of land- non forest land 29.63 Ha	
20	Annexure-II The details of the project: - Point xv The salient features of the project are as under: 6. Land Area Breakup	Non forest land: 117.70 ha Forest Land: 134.24 ha Total Land: 251.94 ha Submergence area/ Reservoir area: 108.44 Ha-Upper & Lower reservoirs	Non Forest land: 229.42 ha Forest Land: 79.37 ha Total Land: 308.79 ha Submergence area/Reservoir area: 138.7 Ha	Revisions in the project layout and site-specific geological conditions necessitated changes in the location and area of the two reservoirs.
21	Annexure-II The details of the project: - Point xv The salient features of the project are as under: 9. Miscellaneous Particulars: Status of ot	Forest Clearance: Online application seeking forest diversion for around 117.70 Ha after receipt of ToR Approval. Alongside, other statutory clearances (as applicable) from State as well as Central	Forest Clearance: Online application seeking forest diversion for around 79.37 Ha is submitted for Approval. The project is presently processed by State Secretary for Recommendation after PSC – II. Apart from that, other s tatutory clearances (as	Forest land has been reduced.

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
	her statutory clearances	government will be obtained post completion of Detailed Project Report.	applicable) from State as well as Central government will be obtained post completion of Detailed Project Report.	

v. The salient features of the project:

EAC meeting/s	46th
Date of Meeting/s	09.01.2026
Date of earlier EAC meetings	14.05.2025

Name of the Proposal	Assam/PSP-01 (900 MW) Off Stream Closed Loop Pumped Storage Project
Proposal No.	IA/AS/RIV/560544/2025
Location (Including Coordinates)	Upper reservoir is longitude 92°16'18.94" East and latitude is 26°0'7.72" North and Lower reservoir are at longitude 92°15'1.23" East and latitude 26°0'8.81" North.
Company's Name	M/s Assam Power Distribution Company Limited (APDCL)
CIN no. of Company/user agency	U40109AS2003SGC007242
Accredited Consultant, Validity and certificate no.	R S Envirolink Technologies Private Limited NABET/EIA/25-28/RA 0415 Valid till 15/08/2028
Project location (Coordinates /River/ Reservoir)	Tharakhunchi Village, Donka Sub-division, West Karbi Anglong district in Assam
Inter- State Issue involved	No

· **Category details:**

Category of the project	1 (c)
Capacity / Cultural command area (CCA)	900 MW
Attracts the General Conditions (Yes/No)	No

Additional information (if any)	

· **ToR Details:**

Earlier ToR Proposal No.	IA/AS/RIV/534107/2025
Earlier EAC meeting date	23/04/2025
ToR Letter No.	F. No. J-12011/21/2025-IA.I(R)
ToR grant Date	02/06/2025
Cost of project	5849.50 Crores
Total area of Project	308.79
Date of online application for amendment in TOR was	06/12/2025
Details of CTE	After Receipt of Environmental Clearance
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	500

· **Electricity generation capacity:**

Powerhouse Installed Capacity	900 MW
Generation of Electricity Annually	1969.20 MU
No. of Units	2x300 MW+2X150MW

· **Detail reason for amendment in ToR:**

The Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project, proposed at Tharakhunchi Village in Donka Sub Division of West Karbi Anglong district, Assam, was initially accorded Terms of Reference (TOR) in the name of Greenko Energies Pvt. Ltd. (GEPL) on 02.06.2025 for an installed capacity of 900 MW (2 × 300 MW + 2 × 150 MW), with an estimated land requirement of 251.94 ha, including 134.24 ha of forest land and 117.70 ha of non-forest land. The TOR was subsequently, transferred to Assam Power Distribution Company Limited (APDCL) on 06.11.2025.

Post-TOR, project optimization activities were undertaken, including a land survey, geological mapping, preliminary engineering, and project layout optimization, along with planning for access roads and infrastructure to ensure efficient execution.

These updated field inputs led to refinements in the project layout, dam type, and sizing of key components. As a result, the land requirement and certain technical parameters have been revised to reflect the optimised design and improved planning for access and supporting infrastructure.

Key modifications include a revised Full Reservoir Level (FRL) based on site survey, changes in project layout and updated salient features, adoption of Roller Compacted Concrete (RCC) Dam due to geological conditions, and an increase in water requirement from 0.245 TMC to 0.395 TMC. Consequently, total land requirement has increased by 56.85 ha, from 251.94 ha to 308.79 ha, to accommodate the updated layout, infrastructure, and constructability needs. Proposal for diversion of forest land has been submitted vide proposal no. FP/AS/HYD/IRRIG/556082/2025. The project was processed by State Secretary for Recommendation after PSC-II. Site Visit Completed by DIG, Forest, and presently waiting for FAC Meeting. There is no change in project location or installed capacity. All refinements are based on updated surveys, geological mapping, and constructability considerations to ensure technical viability and safe execution. The RCC dam design has also resulted in an increased reservoir footprint, enhancing water storage capacity. Minor adjustments in technical parameters and component sizing have been made to optimize project performance.

Assam- 01 Off-Stream Closed Loop Pumped Storage Project (900 MW) SAILENT FEATURES COMPARISION SHEET				
1		**NAME OF THE PROJECT**	**Greenko Assam 01 OCPSP (900 MW) (Original)**	**Assam/PSP 01 (900 MW) (Revised)**
2		**Location**		
	a	Country	India	India
	b	State	Assam	Assam
	c	District	WestKarbi Anglong, Marigaon	West Karbi Anglong District
	d	Village	Tharakhunchi Village, Donka subdivision of (Upper Reservoir & Lower Reservoir) and Amguri, Killing Bagicha villages, Marigaon Circle subdivision	Tharakhunchi Village, Donka subdivision of West Karbi Anglong District in Assam (Upper Reservoir & Lower Reservoir)
3		**Geographical Co-Ordinates**		
	a	**Assam 01 OCPSP Upper Reservoir- (Now Proposed)**		
	i	Latitude	26° 0' 5.34"N	26°0’7.72” N
	ii	Longitude	92°16'19.23"E	92°16’18.94” E
	b	**Assam 01 OCPSP Lower**		

		Reservoir - (Now Proposed)		
	i	Latitude	26°0'12.00"N	26°0’8.81” N
	ii	Longitude	92°15'8.00" E	92°15’1.23” E
4		**Access To Project Site**		
	a	Airport	Lokapriya Gopinath Bordoloi International Airport, Guwahati – 88 kms from project site	Lokpriya Gopinath Bordoloi International Airport (Guwahati), 88 km away from Project location
	b	Rail head	Jagi Road - 23 kms from project site	Jagi Road - 23 Km away from Project location.
	c	Road	Nagaon-Guwahati Highway (NH-27), 16 Km away from project location.	Nagaon-Guwahati Highway (NH-27), 16 km away from project location.
	d	Port	Haldia Port, 1178 Km away from project location.	Haldia Port, 1178 km away from project location
5		**Project**		
	a	Type	Off-Stream Closed Loop Pumped Storage Project	Off-Stream Closed Loop Pumped Storage Project
	b	Storage Capacity -MWH	5481	5679
	c	Rating-MW	900	900
	d	Peak Operation Duration-Hours	6.09	6.31
6		**Assam 01 OCPSP - Upper Reservoir**		
	a	Live Storage-TMC	0.219	0.216
	b	Dead Storage-TMC	0.022	0.140
	c	Gross Storage-TMC	0.242	0.356
7		**Upper Dam**		

	a	Top Bund Level (TBL)	EL + 688.00 m	EL + 684.00 m
	b	Full Reservoir level (FRL)	EL + 685.00 m	EL + 680.00 m
	c	Min. Draw Down Level (MDDL)	EL + 655.00 m	EL + 663.00m
	d	Type of Dam	Geomembrane Faced Rockfill Dam (GFRD)	Roller Compacted Concr ete (RCC) Dam
	e	Max. Height of Rockfill E mbankment (m)	43	70 (Main Dam)
				59 (Saddle Dam)
	f	Avg. Height of Rockfill E mbankment (m)	20	31.90 (Main Dam)
				21.81 (Saddle Dam)
	h	Length at the top of Roc kfill Embankment (m)	648	512 (Main Dam)
				421 (Saddle Dam)
	i	Top width of the Rockfill Embankment (m)	8	7.0
	j	Type of Power Block	Concrete Gravity Stru cture	
	k	Height of Power Block (m)	47.95 m	
	l	Length at the top of Pow er Block (m)	102 m	
	m	Top width of the Power Block (m)	8 m	
8		**Assam 01 OCPSP - Low er Reservoir**		
	a	Live Storage-TMC	0.217	0.216
	b	Dead Storage-TMC	0.003	0.039
	c	Gross Storage-TMC	0.220	0.255
9		**Lower Dam**		
	a	Top Bund Level (TBL)	EL + 313.00 m	EL + 305.00 m

	b	Full Reservoir level (FRL)	EL + 310.00 m	EL + 301.00 m
	c	Min. Draw Down Level (MDDL)	EL + 275.00 m	EL + 278.00m
	d	Type of Dam	Geomembrane Faced Rockfill Dam (GFRD)	Roller Compacted Concr ete (RCC) Dam
	e	Max. Height of Rockfill E mbankment (m)	43	58 (Main Dam-1)
				68 (Main Dam-2)
	f	Avg. Height of Rockfill E mbankment (m)	17	41.01 (Main Dam-1)
				32.84 (Main Dam-2)
	g	Length at the top of Roc kfill Embankment (m)	675	362 (Main Dam-1)
				425 (Main Dam-2)
	h	**Approach Channel**		
	i	Type & Shape	Concrete lined & Tra pezoidal	
	j	Length of channel (m)	369	
	k	Bed width (m)	15	
	l	Full supply depth (m)	5.00	
	m	Bed slope	1 in 3800	
10		**Intake Structure**		
	a	Type	Diffuser Type	Diffuser Type
	b	No. of Vents (No)	3	3
	c	Size of Each Intake	21 m (W) X 5.90 m (H) Including Piers	23.70 m (W) X 7.90 m (H) Including Piers
	d	Length of each Intake	35.73(covered with R CC slab at top up to I ntake Gate)	30.88 m (covered with R einforced Concrete slab at top up to Intake Gate)
	e	Elevation of Intake centre line	EL + 645.30 m	EL + 652.65 m

	f	Elevation of Intake botto m	EL + 643.05 m	EL + 650.00 m
	g	Design Discharge of each Intake (Turbine mode)	93.50 Cumec	89.67 Cumec
	h	Trash rack type	Vertical with inclinati on of 15°	Vertical with inclination of 15°
	i	Size of Trash Rack	3 Nos. of 6.00 m(W) X 6.11 m (H) for each unit	3 Nos. of 5.90 m(W) X 8.18 m (H) for each unit
	j	Numbers & Size of Intak e Service Gate	3 Nos. of 3.80 m (W) X 4.50 m (H) with ind ependent rope drum hoist	1 No. of 4.70 m (W) X 5.30 m (H) with indepen dent rope drum hoist
	k	Numbers & Size of Intak e Emergency Gate	1 No. of 3.80 m (W) X 4.50 m (H) with ind ependent rope drum hoist	1 No. of 4.70 m (W) X 5.30 m (H) with indepen dent rope drum hoist
11		**Penstock /Pressure Sha fts**		
	a	Type	Underground Steel lin ed - Circular	Underground Steel lined - Circular
	b	Number of Pressure Shaf t	Total 3 Nos. of Indep endent Penstock in w hich 1 no. will get bif urcated into 2 nos. ne ar Powerhouse to fee d 2 units of 150 MW each.	Total 3 Nos. of Indepen dent Penstock in which 1 no. will get bifurcated into 2 nos. near Powerh ouse to feed 2 units of 1 50 MW each.
	c	Diameter of Pressure Sha ft (m)	4.50	5.30
	d	Length of Penstock/Press ure Shaft from Upper Int ake to Powerhouse (for L arge Unit)	1001.52 m Length of Vertical Pre ssure Shaft - 1 (VPS-1) – 219.50 m Length of Horizontal Pressur e Shaft -1 (HPS -1) – 284.00 m Length of V ertical Pressure Shaft – 2 (VPS-2) – 240.90 m Length of Bottom	976.68 m Length of Inclined Press ure Shaft – 1 (IPS 1) – 9 9.16 m Length of Vertical Press ure Shaft – 1 (VPS 1) – 2 31.21 m Length of Inclined Press ure Shaft – 2 (IPS 2) – 1 96.15 m

			Horizontal Pressure Shaft (BHPS) – 257.12 m	Length of Vertical Pressure Shaft – 2 (VPS 2) – 214.74 m
	e	Design Discharge of each Penstock (Cumec)	93.50	89.67
	f	Velocity in the Penstock (m/sec)	5.88	4.07
	g	No. of Branch Pressure Shaft	2	2
	h	Dia. Of Branch Pressure Shaft (m)	3.20	3.80
	i	Length of each branch Pressure Shaft (m)	100 (appx.)	75 (appx.)
	j	Design Discharge in branch Pressure Shaft (Cumec)	46.75	44.92
	k	Velocity in branch Pressure Shaft	5.81 m/sec	3.96 m/sec
12		**Powerhouse**		
	a	Type	Underground Powerhouse	Underground Powerhouse
	b	Centre line of Unit	EL + 226.00 m	EL + 228.00 m
	c	Dimensions (Excluding Service Bay)	115 m (L) X 25.5 m (W) X 59.95 m(H)	116.20 m (L) X 23.50 m (W) X 48.50 m (H) with Control Block
	d	Size of Service Bay	40.00 m (L) x 25.5 m (W)	37.00 m (L) x 23.50 m (W)
	e	Service bay level	EL + 240.20 m	EL + 242.00 m
	f	Size of Unloading Bay		
	g	Unloading bay level		
	h	**Tail Race Tunnel**		
	i	Type & Shape	Concrete Lined – Circular	Concrete Lined

	j	Number of Tunnels	4 Nos. (2 Nos. for Larger units & 2 Nos. for Smaller units)	4 Nos. (2 Nos. for Larger units & 2 Nos. for Smaller units)
	k	Dia. of Tunnel	5.00 m for larger unit	5.90 m for larger unit &
			4.00 m for smaller unit	4.20 m for smaller unit
	l	Length of the Tunnel	335 m	777.98 m
	m	Design Discharge	93.5 Cumec each for larger unit	89.67 Cumec each for larger unit
			46.75 Cumec each for smaller unit	44.92 Cumec each for smaller unit
13		**Tailrace Outlet**		
	a	Type	Diffuser Type	Diffuser Type
	b	No. of Outlet	4 Nos. (2 Nos. for Larger units & 2 Nos. for Smaller units)	3 Nos.
	c	Size of each outlet	18.00 m (W) X 7.10 m (H) Including Piers for Larger unit, 12.00 m (W) X 5.05 m (H) Including Piers for Smaller unit	23.70 m (W) X 8.80 m (H) Including Piers
	d	Length of each outlet	28.15 m (H) for larger unit, 17.33 m (H) for smaller unit covered with RCC slab at top up to Outlet Gate	29.68 m covered with Reinforced Concrete slab at top up to Outlet Gate
	e	Elevation of outlet centre line	EL + 266.10 m for larger unit	EL + 267.95 m
			EL +265.60 m for smaller unit	
	f	Elevation of Outlet bottom	EL +263.60 m	EL + 265.00 m
	g	Trash rack Type	Vertical with inclination of 15°	Vertical with inclination of 15°

	h	Size of Trash rack	3 nos. - 5.00(W) X 7.35(H) for larger unit	3 nos. - 5.90(W) X 9.11(H)
			2 nos. - 5.25(W) X 5.23(H) m for smaller unit	
	i	Tailrace outlet Service Gate	2 nos. of 4.20 (W) X 5.00 (H) for larger units	1 no. of 5.40 (W) X 5.90 (H)
			2 nos. of 3.40 (W) X 4.00 (H) for smaller unit	
	j	Tail Race outlet Emergency Gate	1 no. of 4.20 (W) X 5.00 (H) for larger unit & 1 no. of 3.40 (W) X 4.00 (H) for smaller unit	1 no. of 5.40 (W) X 5.90 (H)
14	i	**Electromechanical Equipment**		
	a	Pump Turbine	Francis type, vertical shaft reversible pump turbine	Francis type, vertical shaft reversible pump turbine
	b	Total No of units	4 Nos. (2 X 300 MW) + (2 X 150 MW)	4 Nos. (2 X 300 MW) + (2 X 150 MW)
	c	Total Design Discharge (Turbine Mode)-Cumec	280.50	269.18
	d	Rated Head in Turbine mode (Large Unit/Small unit) (m)	367.50	376.33 / 375.63
	ii	**300MW Turbines**		
	a	Total No of units	2 Units (All fixed Speed)	2 Units (All fixed Speed)
	b	Turbine Design Discharge	93.50 Cumec each	89.67 Cumec each
	c	Pump Capacity	330 MW	330 MW
	d	Rated Pumping Head	386.50 m	385.23 m

	e	Rated Pump Discharge	80.89 Cumec	80.42 cumec
	f	Synchronous Speed		
	iii	**Generator-Motor**		
	a	Type	Three (3) phase, alternating current synchronous/ generator motor semi umbrella type with vertical shaft	Three (3) phase, alternating current synchronous generator/motor, suspended type with vertical shaft
	b	Number of units	2 units (2 x 300MW)	2 units (2 x 300MW)
	c	Rated Capacity	Generator – 300 MW	Generator – 300 MW, PF 0.85 lagging
			Pump Input – 330 MW	Motor – 330 MW, PF 0.95 leading
	d	Rated Voltage	18.0 KV	18.0 KV
	e	Speed of Machine	300.00 RPM	300.00 RPM
	vi	**Main Power Transformer**		
	a	Type	Indoor Single-Phase Power transformers with ON Load Tap Changer (OLTC)	Indoor Single-Phase Power transformers with ON Load Tap Changer (OLTC)
	b	Number of units	6 Nos. i.e. 3 nos. per unit + 1 no Spare Total: 7 nos.	6 Nos. i.e. 3 nos. per unit + 1 no Spare Total: 7 nos.
	c	Rated Capacity of each unit	Single Phase, 18 kV/400kV, 130 MVA	Single Phase, 18 kV/ 400/√3 kV, 125 MVA
	d	Rated Voltage	Primary – 18.0 kV; Secondary - 400 kV adjustable range of the secondary voltage: - 10% to +10% In 1.25% steps	Primary - 18.0 kV; Secondary - 400 kV adjustable range of the secondary voltage: - 10% to +10% In 1.25% steps
	v	**150 MW Turbines**		
	a	Total No. of units	2 Units (Both are Fixed Speed)	2 Units (Both are Fixed Speed)

	b	Turbine Design Discharge	46.75 Cumec each	44.92 Cumec each
	c	Pump Capacity	165 MW	165 MW
	d	Rated Pumping Head	386.50 m	385.63 m
	e	Rated Pump Discharge	40.45 Cumec	40.17 Cumec
	f	Speed of Machine		
	vi	**Generator-Motor**		
	a	Type	Three (3) phase, alternating current synchronous generator motor semi umbrella type with vertical shaft	Three (3) phase, alternating current synchronous generator/motor, suspended type with vertical shaft
	b	Number of units	2 units (2 x 150MW)	2 units (2 x 150MW)
	c	Rated Capacity	Generator – 150 MW	Generator – 150 MW
			Motor – 165 MW	Motor – 165 MW
	d	Rated Voltage	18.0 kV	18.0 KV
	e	Speed of Machine	375 RPM	428.57 RPM
	vii	**Power Transformer**		
	a	Type	Indoor Single-Phase Power transformers with ON Load tap changer (OLTC)	Single-Phase oil immersed Power transformers with ON Load tap changer (OLTC)
	b	Number of units	6 Nos. i.e. 3 nos. per unit + 1no. Spare Total: 7 nos	6 Nos. i.e. 3 nos. per unit + 1 no. Spare Total: 7 nos.
	c	Rated Capacity of each unit	Single Phase, 18 kV/400kV, 65 MVA	Single Phase, 18 kV/ 400√3 kV, 63 MVA
	d	Rated Voltage	Primary – 18.0 kV; Secondary - 400 kV adjustable range of the secondary voltage: - 10% to +10% In 1.25% steps	Primary - 18.0 kV; Secondary - 400 kV adjustable range of the secondary voltage: - 10% to +10% In 1.25% steps.

15		**400 KV Gas Insulated S witchgear**		
	a	Type of GIS	Indoor Type	Indoor Type
	b	No. of GIS units	One No.	One No.
	c	Location	Above Transformer C avern	Above Transformer Cave rn
	d	Scheme	Double Busbar Arrang ement with bus coupl er	Double Busbar Arrange ment with bus coupler
16		**POWER EVACUATION**		
	a	Voltage Level (KV)	400	400
	b	No. of Transmission Line s	One double circuit Tr ansmission line	One double circuit Trans mission line
	c	Conductor	Twin Moose	Twin Moose or higher c onductor
	d	Total Length and name o f substation	One 400 KV Double C ircuit transmission lin e with Twin Moose C onductor of length 55 KMs (appx.) from PSP will be connected to 400 / 220 kV MISA S ubstation PGCIL, Digh aljar, Assam for evacu ation of power during turbine mode and pu mping of power from grid during pumping mode.	One 400 kV Double Circ uit transmission line wit h Twin Moose Conducto r (or higher) of length 4 0-50 kms (appx.) from t he PSP will be connecte d to a proposed 400 kV Makoiram Grid Substatio n, West Karbi Anglong D istrict, Assam for evacua tion of power during tur bine mode and pumping of power from grid durin g pumping mode.
17		**Estimated Cost (Cr)**		
	a	Civil Works & Other wor ks	2629.00	2629.00
	b	E & M Works incl. trans mission	1245.00	1245.00
	c	IDC & Others	1975.49	1975.50
	d	**Total Project Cost with**	**5849.49**	**5849.50**

		IDC		

3.3.3. Deliberations by the committee in previous meetings

N/A

3.3.4. Deliberations by the EAC in current meetings

The EAC during deliberations noted the following:

● The proposal is for grant of amendment in Terms of References (TOR) to the project for Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha located at Village Tharakhunji, Sub District Baithalangso, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited.

● The project is listed at S.N.1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

● The Terms of Reference granted by the Ministry in the name of Greenko Energies Pvt. Ltd. (GEPL) on 02.06.2025 for an installed capacity of 900 MW (2 × 300 MW + 2 × 150 MW), with an estimated land requirement of 251.94 ha, including 134.24 ha of forest land and 117.70 ha of non-forest land. The TOR was Subsequently, transferred to Assam Power Distribution Company Limited (APDCL) on 06.11.2025.

● The EAC noted that the PP after obtaining ToR project optimization activities were undertaken, including a land survey, geological mapping, preliminary engineering, and project layout optimization, along with planning for access roads and infrastructure to ensure efficient execution which led to refinements in the project layout, dam type, and sizing of key components. As a result, the land requirement and certain technical parameters have been revised to reflect the optimised design and improved planning for access and supporting infrastructure. Key modifications include a revised Full Reservoir Level (FRL) based on site survey, changes in project layout and updated salient features, adoption of Roller Compacted Concrete (RCC) Dam due to geological conditions, and an increase in water requirement from 0.245 TMC to 0.395 TMC. Consequently, total land requirement has increased by 56.85 ha, from 251.94 ha to 308.79 ha, to accommodate the updated layout, infrastructure, and constructability needs.
● The EAC noted that the PPP also requested change its project name from Greenko Assam 01 OCPSP (900 MW) to Assam/PSP 01 (900 MW). An online application for diversion of 79.37 ha of forest land was submitted on 11.11.2025 vide proposal no. FP/AS/HYD/IRRIG/556082/2025.

3.3.5. Recommendation of EAC

Recommended

3.3.6. Details of Terms of Reference

3.3.6.1. Specific

additional ToR points	
1.	EIA/EMP, collection of baseline data, other statuary clearance and the public hearing shall be carried out as per revised layout.

2.	All other Terms of Reference mentioned letter no. J-12011/21/2025-IA.I(R) dated 02.06.2025 shall remain unchanged.

3.4. Agenda Item No 4:

3.4.1. Details of the proposal

Ratle Hydroelectric Project by **RATLE HYDROELECTRIC POWER CORPORATION LIMITED** located at **KISHTWAR,JAMMU AND KASHMIR**			
Proposal For		Application for Validity Extension of EC- Form-6	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/JK/RIV/560703/2025	J-12011/39/2010-IA.I	10/12/2025	River Valley/Irrigation projects RVHEPs without Pump Storage Projects (1(c))

3.4.2. Project Salient Features

Agenda Item No. 46.4

Ratle Hydro-electric Project (850 MW) in an area of 567.22 Ha located at Village Drabshala, Sub District and District Kishtwar and Doda, Jammu and Kashmir by M/s Ratle Hydroelectric Power Corporation Limited - Validity Extension of EC – reg.

[Proposal No. IA/JK/RIV/560703/2025; F. No. J-12011/39/2010-IA.I]

46.4.1 The proposal is for grant of validity extension of Environmental Clearance (EC) of Ratle Hydroelectric Project (850 MW) in an area of 567.22 Ha located at Village Drabshala, Sub District and District Kishtwar and Doda, Jammu and Kashmir by M/s Ratle Hydroelectric Power Corporation Limited.

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

i. Ratle HE (850MW) Project is a run of the river (ROR) scheme on Chenab river near village Drabshalla in District Kishtwar of UT of Jammu and Kashmir. The Project is under implementation by Ratle Hydroelectric Power Corporation Limited (RHPCL), a Joint Venture Company of NHPC Limited & JKSPDCL with equity participation of 51% & 49% respectively.

ii. The Environmental Clearance was accorded to Ratle HE Project (In favour of PP- M/s GVK Ratle) by MoEF&CC in 2012 vide letter No. J-12011/39/2010-IA-1 dated 12.12.2012. However, the Project was abandoned by M/s GVK in July 2014.

iii. Subsequently, after formation of new Joint Venture between NHPC Limited and JKSPDCL (RHPCL) on 01.06.2021, the Environmental Clearance of Project was transferred in the name of RHPCL vide letter No. J-12011/39/2010-IA-1 dated 27.09.2021.

iv. The project envisages construction of 133 m high (from deepest foundation level) concrete gravity Dam, 4 nos underground circular steel lined pressure shafts/penstocks and an underground Power House accommodating 4 units of 205 MW (Francis type). A unit of 30 MW is also envisaged to utilize the stipulated continuous release of environmental flows. The design energy in a 90% dependable year with 95% machine availability is 3136.76 MU. The scheduled completion of the Project is 60 months (including tendering period).

v. The estimated Cost of the project at November 2018 price level has been estimated at Rs.5281.94 crore including IDC & FC of Rs.958.06 crore. The first year tariff and levelized tariff of the power is estimated to be Rs.3.62/kWH and Rs.3.92/kWH, respectively.

vi. The Physical Progress of work is 26.6% (as on 31.12.2025). Details are mentioned as under and anticipated completion of the work is as proposed to be in November 2028

Sr. No	Description	Unit	Total Quantity	Completed Quantity	Target Date of Completion
1	**Power House Cavern Excavation**	Cum	2,57,000	1,98,800 (77%)	**15-04-2026**
2	**Transformer Cavern Excavation**	Cum	83,000	83,000 (100%)	**Completed**
3	**Dam Abutment Excavation**	Cum	3,97,400	3,97,400 (100%)	**Completed**
4	**Dam River Bed Excavation**	Cum	3,00,000	2,72,182 (91%)	**20-02-2026**
5	**Dam Concreting**	Cum	9,50,000	Started on 04.01.2026	**15-04-2028**
6	**D/s Surge Chamber Excavation**	Cum	99,000	84,850 (85%)	**30-06-2026**
7	**Pressure Shaft - Excavation**	Cum	73,000	70000(96%)	**30-06-2026**
8	**TRT Excavation (**Only Plug portion is Balance**)**	Cum	1,25,000	1,16,500 (93%)	**30-04-2027**
9	**TRT Lining**	Rm	1585	708 (45%)	**31-05-2027**
Subsequent Activities yet to Start : HM Works, E&M Works, Surge Chamber Concreting, TRT Outlet etc.					

46.4.3 The EAC during deliberations noted the following:

i. Previously, the implementation of Ratle HE Project was taken up by M/s GVK Ratle Hydroelectric Project Pvt. Limited (awarded by GOJK on BOOT basis and the Project was abandoned by M/s GVK in July 2014.

ii. After formation of Joint Venture between NHPC Limited and JKSPDCL (RHPCL) on 01.06.2021, the Environmental Clearance of Project was transferred in the name of RHPCL vide letter No. J-12011/39/2010-IA-1 dated 27.09.2021Transfer of Environmental Clearance in 2021 in the name of Ratle Hydroelectric Power Corporation Limited (RHPCL)

iii. After abandoning of Project by the previous developer in July 2014, the Project remained

under various litigations/ Court proceedings and stays and no construction activities could be taken up between July 2014 to 2021.

iv. As much of the EC period has been lost in litigation before formation of RHPCL (Joint Venture), RHPCL (current PP) could utilize only 04 years of Environmental clearance period for implementation of the Project.

· The EAC noted that the as on date the physical progress of 26.02% has been achieved and the Project is expected for commissioning by Nov 2028, subject to unforeseen hindrances or delays. The EAC further observed that as per the Ministry's Notification S.O. 1807(E) dated 12.04.2022, the environmental clearance granted to River Valley project shall be valid for a period of thirteen years and may be extended in respect of valid Environmental Clearance, by the regulatory authority concerned by a maximum period of two years.

· The EAC noted as per MoEF&CC notification S.O. 221(E) dated 18.01.2021 the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19).

· Additionally, as per MoEF&CC OM no. IA3-22/22/2025-IA.III dated 30.10.2025 the Ministry has clarified that the following time period during which the project proponent was unable to implement the EC granted for the related Project/Activities shall be treated as a zero period for calculating the validity of the EC:

(a) Duration of stay orders of the competent Courts leading to non- implementation of the Projects/Activities for which EC had been duly granted and in respect of which the Project Proponent/Applicant shall provide necessary documentary evidence;

(b) Duration of pendency before NCLT till the Resolution Plan is approved by NCLT and Project/Activity is handed over to the successful Resolution Applicant (New Management/Bidder) and in respect of which the Project Proponent /Applicant shall provide necessary documentary evidence;

or

(c) Duration of pendency before NCLT till the Liquidator selects the new bidder following due process as part of the liquidation proceedings and NCLT approves the concerned sale or scheme and confirms the transaction of payment and in respect of which the Project Proponent /Applicant shall provide necessary documentary evidence.

The above mentioned O.M. also clarifies that in the event that the period lost in litigation or in NCLT proceedings, as mentioned above, is more than three years, the concerned State Pollution Control Board or Pollution Control Committee shall add appropriate environmental safeguards, as deemed appropriate, in the Consent to Operate (CTO) conditions based on the changes in the site conditions that may have taken place during this period and taking into account the need for installation of appropriate pollution control, prevention and abatement measures that may be necessitated.

The EAC noted that EC was granted to the project on 12.12.2012 and as per applicable provisions at the time of grant of EC, the validity of the EC was up to 11.12.2022. Vide MoEF&CC notification S.O. 221(E) dated 18.01.2021, it was provisioned that the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19). Further, vide Ministry's Notification S.O. 1807(E) dated 12.04.2022, the validity period of environmental clearance granted to River Valley project was decided for a period of thirteen years and the same may be extended by a maximum period of two years. Vide MoEF&CC OM no. IA3-22/22/2025-IA.III dated 30.10.2025, the Ministry clarified that the time period during which the project proponent was unable to implement the EC granted for the related Project/Activities in view of proceedings before NCLT or Courts, the time period shall be treated as a zero period for calculating the validity of the EC after submission of necessary documentary evidence. The EAC

inquired about the necessary documentary evidence wherein it was justified that project were halted for four years. PP, vide email dated 10.01.2026 provided requisite documents therefore the EAC opined that 4 years shall be considered as zero period in calculation of validity of EC. Accordingly, the EC granted to Ratle Hydroelectric Project (850 MW) on 12.12.2012 is valid till 11.12.2030 and further extendable up to maximum of two years.
Accordingly, the EAC suggested the project proponent to take further necessary action as per MoEF&CC OM no. IA3-22/22/2025-IA.III dated 30.10.2025 and submit the proposal for EC validity extension before expiry of existing EC.

3.4.3. Deliberations by the committee in previous meetings

N/A

3.4.4. Deliberations by the EAC in current meetings

The EAC, therefore ***returned*** the proposal in present form.

3.4.5. Recommendation of EAC

Returned in present form

3.5. Agenda Item No 5:

3.5.1. Details of the proposal

Balimela Pumped Storage Project (2 x 250 MW), district Malkangiri, Odisha by **ODISHA HYDRO POWER CORPORATION LIMITED** located at **MALKANGIRI,ODISHA**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/OR/RIV/562792/2025	J-12011/46/2025-IA.I(R)	24/12/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.5.2. Project Salient Features

Agenda Item No. 46.5
Balimela Open Loop Pumped Storage Project (2 x 250 MW) in an area of 248.03 Ha located at Village Khilaguda, Tarapur, etc., Sub District Chitrakonda and Orkel, District Malkangiri, Odisha by M/s Odisha Hydro Power Corporation Limited – Terms of References (TOR) – reg. [Proposal No. IA/OR/RIV/562792/2025; F. No. J-12011/46/2025-IA.I (R)]
46.5.1 The proposal is for grant of Terms of Reference (ToR) to the project Balimela Open Loop Pumped Storage Project (2 x 250 MW) in an area of 248.03 Ha located at Village Khilaguda, Tarapur, etc., Sub District Chitrakonda and Orkel, District Malkangiri, Odisha by M/s Odisha Hydro Power Corporation Limited.

46.5.2 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 proposed Balimela Pumped Storage Project is located near existing Balimela Hydro Electric Project near Balimela village in Malkangiri tehsil, Malkangiri district, Odisha.

ii. The proposed Balimela Pumped Storage Project (PSP) envisages the utilization of the Existing Balimela reservoir as an Upper reservoir on the Sileru River together with the construction of a lower reservoir on Kharika Jhora nala. The main storage for the proposed scheme shall be in the Lower reservoir. A Earth-Cum Rockfill damof height 59.6m is Proposed to form the Lower Reservoir. The Full Reservoir Level of the proposed Balimela PSP Lower Reservoir (Lower Reservoir) is at El. 255.68mand Dead Storage level at El. 245.80m respectively.

iii. Background:

a) The Balimela irrigation project is a joint venture project of Odisha and Andhra Pradesh to divert half of the water to Potteruvagu sub-river basin for irrigation purposes in Odisha. While diverting the share of Odisha to Potteruvagu River 510MW (6X60MW+2X75MW) power is generated through a surface powerhouse by Odisha Hydro Electric Project (OHPC). The rest of the water is being discharged through Sileru River for utilization by Andhra Pradesh. The Balimela Power Project forms the second stage of development of Machkund - Sileru River, the first stage being the Machkund Project.

b) studies and report submitted by THDC India Ltd (A Joint Venture of Govt. of India & Govt. of U.P.) proposing Balimela Pumped Storage scheme in the vicinity of the existing power plant of Balimela HEP near Balimela town.

c) Subsequent studies of the topography and hydrology of the project area to evaluate project layout with alternate dam axis and utilisation of natural resources, the scheme with ultimate capacity of 500 MW with maximum gross head of 188.223 m has been considered.

d) The water from existing Balimela Reservoir will pass through the waterways to the turbines installed at the power house to generate 500MW of power during peak hours. The tail water will be diverted through the tunnel to store water in the lower reservoir created by construction of a rock fill dam across a stream (Kharika jhora) near Balimela town. The excess water from lower reservoir if any will be ultimately discharged in Potteruvagu River through Kharika Jhora. During off peak hours the excess power from thermal stations and other sources will be fed back to pump the water from Lower Reservoir to Upper Reservoir through power house where generators and turbines will then act as motors and pumps respectively. The same cycle of operation will be repeated during peak and lean period.

e) Since the Upper and Lower Reservoirs have effective storage capacity equivalent to six (6) hours of generation daily at full rated output, it is possible to operate the project on daily basis.

iv. The project will be an On-stream pumped storage scheme. It will comprise two reservoirs: one at lower elevation and other at upper elevation. The difference of water levels of the reservoirs will represent the effective “head” of the Project. The water conductor system will connect the two reservoir through an underground power house

v. The geographical co-ordinate of the project are Lat. N 18° 13’ to 18° 11’ & Long. E 82° 05’ to 82° 06’.

vi. **Land requirement:**

Nature of Land involved	Area in Ha

vii. **Project Benefit:** The scheme would afford on annual peaking period energy generation of 1171 GWh annually considering the project operation for one cycle for 6 hours 24.99 minutes peaking per day with design energy generation of 1112.45 GWh, calculated with 95% capacity availability. Energy generation in 90% dependable flow. Employment during project construction and operation phases.

viii. **Environmental Sensitive area:** There is Chitapari Reserved Forest within 10 km distance from the project site.

ix. **Alternative Studies:** A comparative analysis has been carried out for all the three alternative sites and the same is presented below:

		Alternate-1 (Dam axis A-A)	**Alternate-2 (Dam axis B-B)**	**Alternate-3 (Dam axis C-C)**
	Upper Reservoir	**Existing Balimela Reservoir**	**Existing Balimela Reservoir**	**Proposed new**
	FRL (m)	462.10	462.10	560
	MDDL(m)	438.91	438.91	544
	Proposed Live Storage (MCM)	-	-	11.98
	Height of dam (m)	-	-	65
	Lower Reservoir	**Proposed new**	**Proposed new**	**Existing Balimela Reservoir**
Proposed FRL(m)	232.34	255.68	462.10	
Proposed MDDL(m)	220	245.80	438.91	

Proposed Live Storage (MCM)	5.991	6.811	-	
Height of dam (m)	**40.0**	**59.6**	-	
Length of dam (m)	**1462**	**699**	-	
Submergence area (Ha)	**85**	**76.35**	**77.05**	
Gross Head(m)	224.3	199.8	100	
Tentative WC SLength(m)	3700	2030	3000	
L/H Ratio	**16.5**	**10.16**	**30**	
Proposed Installed Capacity (MW)	500	500	500	
Tentative Cost (incl. E&M) (in Cr.)	2355.26	2285.15	2553.73	
Per MW Cost (in Cr)	**4.71**	**4.57**	**5.1**	
Remarks	Hamlets on both the banks and submergence of private agriculture land.	Project area lies forest	Project area lies partially in forest	
Reservoir filling	Turni Nala	Kharika Jhora nala	From existing Balimela reservoir	

1) The Existing Balimela reservoir is a Joint project of Govt. of Odisha and Andhra Pradesh. The existing Balimela Project supplies water to Andhra Pradesh as per the agreement dated 04.09.1962. The Balimela Reservoir is meant to divert 50% of water through a tunnel to Balimela Power House of Odisha state, while remaining 50% of water is let off in the river for utilization by Andhra Pradesh as per the interstate agreement.

2) The water from Sileru river and its tributaries will not be used for generation. The use of existing Upper reservoir (i.e. Balimela reservoir) only for pumped storage operation i.e. during peak hours by utilising the water storage of Lower reservoir and recycle to existing Balimela reservoir. So, the same water will be recycled between Upper and Lower reservoir and no additional water utilized from Sileru river and its tributaries.

3) Proceeding of meeting in the report of Godavari Water Disputes Tribunal (1979-1980)- The proceedings of the meeting between the Chief Minister of Andhra Pradesh and Orissa at Hyderabad held on 15th December 1978 wide annexure-D clause II G-12 Sabari sub-basin

indicates that the state of Andhra Pradesh agreed for utilization of all waters up to "The Potteru project site on Potteruvagu near Surliukunta village. Lat. 18^0 -12'-30" N and Long 82^0 -01- 30"E." by the State of Orissa.

4) The Survey of India topo sheet no- E44K4-65J/4 and google image indicate that the Kharika Jhora nala is upstream of the Potteru project site on Potteruvagu near Surliukunta village. As such the entire water of Kharika Jhora could be utilized by the state of Odisha.

Considering the above findings, Alternate 3 dam axis C-C is rejected as only 100m gross head is available and their higher storage requirements will ponder the issue in reservoir filling as only nala will be the source of filling and pumping will cost more which lead the project unfeasible.

The remaining two alternatives i.e. dam axis A-A & B-B, Alternate-2 dam axis B-B is the most optimized alternate wrt. to L/H ratio, submergence depth as well as per MW Cost.

Therefore, Alternate-2 dam axis B-B is more preferable for the project and has been selected for optimization and further investigations in the DPR study.

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

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

· **Project details**

Name of the Proposal	Balimela Pumped Storage Project
Location (Including coordinates)	District Malkangiri, Odisha Coordinates of the project area: Lat. N 18° 13' to 18° 11' & Long. E 82° 0 5' to 82° 06'
Inter- state issue involved	Nil
Seismic zone	II zone

Category of the project	Category A
Provisions	Yes
Capacity / Cultural command area (CCA)	500 MW(2 x 250 MW)
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	-

Powerhouse Installed Capacity	500MW
Generation of Electricity Annually	1171 MU

No. of Units	2 x 250 MW
Additional information (if any)	-

Cost of project	Rs. 251582 Lakh
Total area of Project	248.03 Ha.
Height of Dam from River Bed (EL)	59.6 m
Length of Tail Race Tunnel/Head Race Tunnel/Pressure Shaft	299 m (2 Nos.)/1293 m/419 m (2 nos.)
Details of Submergence area	Forest - 80 ha
Types of Waste and quantity of generation during construction/ Operation	Domestic waste (2 TPA)
E-Flows for the Project	As per Norms of MoEF & CC
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.	a) Not Applicable b) For 90% dependable year · Monsoon Season – 30% of average flow · Non-Monsoon, Non Lean Season – 25% of average flow · Lean Season – 20% of average flow

No. of proposed disposal area/(type of land-Forest/Pvt. land)	5
Muck Management Plan	To be prepared as part of CEIA Studies
Monitoring mechanism for Muck Disposal	Muck disposal sites shall be monitored on a monthly basis

Private land	125.75 Ha
Government land/Forest Land	122.28 Ha

Submergence area/Reservoir area	80 Ha which is Forest Land
Land required for project component	248.03 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	Chitapari Reserved Forest
National Park	No	
Wildlife Sanctuary	No	

Particulars	**Details**
Details of consultant	WAPCOS Limited
Project Benefits	· Energy generation in 90% dependable flow. · Employment during project construction and operation phases
Status of other statutory clearances	Under Process
R&R details	NA
Additional detail (If any)	-

3.5.3. Deliberations by the committee in previous meetings

N/A

3.5.4. Deliberations by the EAC in current meetings

46.5.3 The EAC during deliberations noted the following:

· The Expert Appraisal Committee (EAC) deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA/EMP and Public hearing for Balimela Open Loop Pumped Storage Project (2 x 250 MW) in an area of 248.03 Ha located at Village Khilaguda, Tarapur, etc., Sub District Chitrakonda and Orkel, District Malkangiri, Odisha by M/s Odisha Hydro Power Corporation Limited.

· The project/activity falls under Category A of item 1(c), 'River Valley Projects,' as per the

Schedule of the Environmental Impact Assessment Notification, 2006, and requires appraisal at the Central level by the sectoral EAC in the Ministry.

· The EAC observed that the present proposal is for a 500 MW open-loop pumped storage project, wherein the existing Balimela Pumped Storage Project (PSP) envisages the utilization of the Existing Balimela reservoir as an Upper reservoir on the Sileru River together with the construction of a lower reservoir on Kharika Jhora nala. Balimela Hydro Electric Project is in operation since 1973. Upper Reservoir is already functional. The lower reservoir has been proposed to be created near the foothill of the Balimela town. The proposed Balimela Pumped Storage Project is located within Charnockite Group of rocks (Acid to intermediate charnockite) belonging to Eastern Ghat Supergroup

· The EAC noted that the total land requirement for the project is around 248.03 Ha, out of which 125.75 Ha is non-forest land and 122.28 Ha is forest land. Diversion of forest land for non-forest purpose will be involved for construction of Project components. However, it was observed that the application for Stage-I Forest Clearance (FC) has not yet been submitted, which necessitates further action from the Project Proponent. There are No National Parks, Wildlife Sanctuaries, Biosphere Reserves, Tiger/ Elephant Reserves & Wildlife Corridors present within 10 km radius of the project site.

· The EAC noted that in the break up of land area submitted by the PP, Rock Quarry Area required 35 ha of the forest land. Therefore, it was advised by the EAC to resubmitted land details excluding forest land for rock quarrying. Accordingly, the PP vide email dated 09.01.2026 submitted revised land details, which us mentioned as under :

S.No.	**Project Area**	**Land (Ha)**		**Total (Ha)**
		Forest (Ha.)	**Non-Forest (Ha)**	
A	**Project Components**			
1	Upper Intake	2.37	2	4.37
2	Head Race Tunnel	9.91	0	9.91
3	Surge Shaft, BVC and Pressure Shaft	2.20	0	2.20
4	Power House (PH) & Transformer Cavern (TC), Horizontal pressure shaft, Draft Tube and other allied Structures at P.H. Area	2.16	0	2.16
5	Tail Race Tunnel	3.24	0	3.24
6	Main Access Tunnel (MAT), Cable cum Ventilation Tunnel, Adit to horizontal Pressure shaft, Adit to Surge Shaft bottom	13.15	0	13.15

7	Switchyard	1.00	0	1.00
8	Lower Reservoir including Submergence Area, Dam and Lower Pump Intake	75	20	95.00
	Total (A)	**109.03**	**22.00**	**131.03**

B	**Link Roads**			
1	Permanent Link Roads to Surge Shaft Top	3.75	0.00	3.75
2	Permanent Link Road to Lower dam, MAT, CAT, Switchyard & Connectivity to Malkangiri-Balimela Road	9.50	1.00	10.50
3	Temporary Roads to Muck Disposal, Rock Quarry and Borrow Areas	0.00	0.75	0.75
	Total (B)	**13.25**	**1.75**	**15.00**

C	**Construction Facility/Muck Disposal**			
1	Construction Facilities Area including Stock piling yard, Fabrication yard	0	19	19.00
2	Project Office Buildings-Guest House, Field Hostel, Main Administrative Building, Residential Quarters, Store etc,	0	10	10.00
3	Crushing , Batching & Mixing Plants	0	5.00	5.00
4	Muck Disposal for HRT, Pressure Shaft, TRT, Power House, Surge Shaft and Various Adits	0	25.00	25.00
	Total (C)	**0.00**	**59.00**	**59.00**
D	Borrow Area	0.0	8.0	8.0
E	Rock Quarry Area	0.0	35.0	35.0
	Total (A+B+C+D+E)	**122.28**	**125.75**	**248.03**

· The EAC during the meeting noted that water from Balimela reservoir is being shared with

Andhra Pradesh state therefore it became necessary to obtain clearance/ approval from Govt. of Andhra Pradesh.

3.5.5. Recommendation of EAC

Recommended

3.5.6. Details of Terms of Reference

3.5.6.1. Specific

Miscellaneous:	
1.	Both capital and recurring expenditure under EMP shall be submitted.
2.	Pre-DPR Chapters viz., Hydrology, Layout Map and Power Potential Studies duly approved by CWC/CEA shall be submitted.
3.	The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples.
4.	Drone video of project site shall be recorded and to be submitted.
5.	Detailed plan to restore wider roads and convert them into narrow up to 10m after construction of the project.
6.	Specific Terms of Reference (ToRs) issued by the Ministry vide Office Memorandum No. F. No. IA3-22/33/2022-IA.III dated 14.08.2023 for Pumped storage projects shall be used for preparation of EIA/ EMP reports.
7.	As per Ministry's OM dated 1st August, 2013, PP shall submit application to obtain prior approval of Central Government under the Forest Conservation Act, 1980 for diversion of forest land required for such projects will be submitted as soon as the actual extent of forest land required for the project is known to the project proponent, and in any case, within 6 months of issuance of ToR. However, no proposal will be put up before EAC without submission of application for forest clearance, wherever applicable.
Disaster Management:	
1.	Impact of Project activities (specially blasting and drilling) on the aquatic and terrestrial ecosystem, within study area to be studied and be incorporated in EIA/EMP report.
2.	The muck dumping sites shall be located with a distance of 100 mts from HFL. The PP shall submit the detailed action plan for transportation of muck along with monitoring mechanism of movement of muck carrying trucks.
Muck Management:	

1.	Details of quantity of muck generation component wise, types of muck (Excavation in tunnels, pressure shaft and powerhouse etc.) and disposal site/ transportation to be provided.
2.	Details of muck management such as dumping sites and its locations, transportation plan along with monitoring mechanism for muck transportation, detailing the road map of project construction site/ indicating the distances from HFL, river, project construction site along with types of road etc.
3.	Safety measures for avoiding spill over muck into the riverbed/streams and its flow into the river during the high discharge/ flood or monsoon period. Prepare plan for stabilization of muck disposal sites using biological and engineering measures to ensure that muck does not roll down the slopes and shall be disposed safely and that it does not pollute the natural streams and water bodies in surrounding area.
4.	Restoration plan for construction area including dumping site of excavated materials by levelling, filling up of burrow pits, landscaping etc.
Socio-economic Study:	
1.	Declaration by the project proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with any State in the project.
2.	All the tasks including conducting public hearing shall be done as per the provisions of EIA Notification, 2006 and as amended from time to time. A comparative chart of issues raised by General Public during Public Hearing and commitments made by the Project Proponent will be prepared and submitted in the relevant chapter of EIA/EMP report.
3.	The EIA/EMP shall include a detailed socio-economic assessment of the tribal population in the project-affected area based on primary data and community consultations. A Tribal Development Plan, prepared in consultation with the District Administration and Tribal Welfare Department, shall be submitted along with the EIA report.
4.	PP shall submit the credible documents to show the status of land acquisition w.r.t project site from/through the concerned State Government as required under Ministry's O.M. dated 7th October, 2014 for the project land to be acquired.
5.	Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines. Private land (if any) shall be acquired as per provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. Budget earmarked for R&R, CSR shall not be included in the cost of EMP.
Environmental Management and Biodiversity Conservation:	
1.	The PP will submit 10 years water availability data certified by the CWC/State Water Resource Department for quantity of water that is received annually by the small stream on which upper and lower reservoir is proposed to be constructed.
2.	Detailed action plan for large scale plantation of native species of plant sapling within 10 km radius of the project shall be prepared in consultation with State Forest Department. The monitoring mechanism to ensure the survival of saplings shall be finalised in consultation

	with ICFRE.
3.	
4.	Muck disposal site and other components such as Township, site office, Stacking area and batching plant shall be located outside the forest area.
5.	Certificate and certified map from Chief Wildlife Warden shall be submitted mentioning that project boundary is not falling in any Ecological Sensitive Area, Wildlife Sanctuary/Tiger/elephant corridor/Critically polluted area within 10 km of Project site.
6.	Transportation Plan for transporting construction materials shall be submitted. Separate chapter for risk assessment of such transportation through/within proposed the Wildlife Sanctuary shall be included in the EIA report.
7.	Environmental Cost Benefit Analysis shall be done in terms of loss of Forest ecosystem due to diversion of Forest land/loss of biodiversity, water availability, water uses for generation of hydro power and Ecological flows.
8.	The baseline data collection will cover the changes in biological and ecological profile of the region after monsoon with worst-case scenario study and critical mineral assessment.
9.	Calculation and values of GHGs (CO2, CH4 etc.) emissions during construction and during operation till the life of the project shall be estimated and submitted.
10.	The longitudinal connectivity/Free flowing sketch be provided in the EIA/EMP report. Presence of any critical mineral zone in the proposed area be clarified from GSI.
11.	Quantitative values of Impact modelling of environmental parameters shall be submitted for during construction and operation. Also, mitigation measures shall be submitted in terms of construction and operation phase.
12.	Conducting site-specific ecological study emphasizing on riverine ecology viz. fishes diversity, fish migration, habitat and aquatic biota due to construction PSP. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.
13.	Cumulative Impact of projects in the basin on carrying capacity and sustainability of Reservoir/ River /nala of catchment area due to tapping of water for filling reservoir shall be studied.
14.	Action plan for survival or diversion of the rivulets/stream, if any, leading to join river shall be submitted.
15.	Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Specific ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons.
16.	A study shall be carried out on impact of project activity on the aquatic and terrestrial ecosystem, within project area classifying the impact zones (highly impact/low impact zone)

	based on seasonal variations and covering the aspects related to impacts on aquatic ecosystem/ primary productivity due to quantity of water to be lifted for power generation and thermal stratification. Accordingly, Environment Management plan shall be prepared.
17.	Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.
18.	Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Indian Council of Agriculture Research (ICAR) Institutes/ Expert Govt. institutions and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report.
19.	Details of mineral zone, if any, in the study area, certified by Geological Survey of India or any other concerned Government Organization shall be submitted. The project area should not come up on any critical mineral zone, the same shall to be verified by GSI/NMDC.
20.	Any archaeological sites in the vicinity of the project, if any, then it shall be certified by ASI.

3.5.6.2. Standard

1(c)	**River Valley/Irrigation projects**
Scope of EIA Study	
1.	The EIA Report should identify the relevant environmental concerns and focus on potential impacts that may change due to the construction of proposed project. Based on the baseline data collected for three (3) seasons (Pre-monsoon, Monsoon and Winter seasons), the status of the existing environment in the area and capacity to bear the impact on this should be analysed. Based on this analysis, the mitigation measures for minimizing the impact shall be suggested in the EIA/EMP study.
Details of the Project and Site	
1.	General introduction about the proposed project.
2.	Details of Project and site giving L-Sections of all U/S and D/S Projects with all relevant maps and figures. Connect such information as to establish the total length of interference of Natural River and the committed unrestricted release from the site of Dam/Barrage into the main river.
3.	A map of boundary of the project site giving details of protected areas in the vicinity of 25 km of project location.
4.	Location details on a map of the project area with contours indicating main project features. The project layout shall be superimposed on a contour map of ground elevation showing main project features (viz. location of dam, Head works, main canal, branch canals, quarrying etc.) shall be depicted in a scaled map.
5.	Layout details and map of the project along with contours with project components clearly marked with proper scale maps of at least 1:50,000 scale and printed at least on A3 scale for clarity.
6.	Existence of National Park, Sanctuary, Biosphere Reserve etc. in the study area, if any, should be detailed

	and presented on a map with distinct distances from the project components.
7.	Drainage pattern and map of the river catchment up to the proposed project site.
8.	Delineation of critically degraded areas in the directly draining catchment on the basis of Silt Yield Index as per the methodology of Soil and Land use Survey of India.
9.	Soil characteristics and map of the project area.
10.	Geological and Seismo-tectonic details and maps of the area surrounding the proposed project site showing location of dam site and canal sites.
11.	Remote Sensing studies, interpretation of satellite imagery, topographic sheets along with ground verification shall be used to develop the land use/land cover pattern of the study using overlaying mapping techniques viz. Geographic Information System (GIS), False Color Composite (FCC) generated from satellite data of project area.
12.	Land details including forests, private and other land.
13.	Demarcation of snow fed and rain fed areas for a realistic estimate of the water availability.
14.	Different riverine habitats like rapids, pools, side pools and variations in the river substratum bedrocks, rocks, boulders, sand/silt or clay etc. need to be covered under the study
Description of Environment and Baseline Data	
1.	To know the present status of environment in the area, baseline data with respect to environmental components air, water, noise, soil, land and biology & biodiversity (flora & fauna), wildlife, socioeconomic status etc. should be collected within 10 km radius of the main components of the project/site i.e. dam site and power house site. The air quality and noise are to be monitored at such locations which are environmentally & ecologically more sensitive in the study area. The baseline studies should be collected for 1 season (Preferably Monsoon season). Flora-Fauna in the catchment and command area should be documented. The study area should comprise of the following:
2.	(i) Catchment area up to the dam/barrage site.
3.	(ii) Submergence Area.
4.	(iii) Project area or the direct impact area should comprise of area within 10 km radius of the main project components like dam, canals etc.
5.	(iv) Downstream upto 10 km from the tip of the reservoir.
Details of the Methology	
1.	The methodology followed for collection of base line data along with details of number of samples and their locations in the map should be included. Study area should be demarcated properly on the appropriate scale map. Sampling sites should be depicted on map for each parameter with proper legends. For Forest Classification, Champion and Seth (1968) methodology should be followed.
Methodology for Collection of Biodiversity Data	

1.	The number of sampling locations should be adequate to get a reasonable idea of the diversity and other attributes of flora and fauna. The guiding principles should be the size of the study area (larger area should have larger number of sampling locations) and inherent diversity at the location, as known from secondary sources (e.g. eastern Himalayan and low altitude sites should have a larger number of sampling locations owing to higher diversity).
2.	The entire area should be divided in grids of 5kmX5km preferably on a GIS domain. There after 25% of the grids should be randomly selected for sampling of which half should be in the directly affected area (grids including project components such as reservoir, dam, powerhouse, tunnel, canal etc.) and the remaining in the rest of the area (areas of influence in 10 km radius form project components). At such chosen location, the size and number of sampling units (e.g. quadrates in case of flora/transects in case of fauna) must be decided by species area curves and the details of the same (graphs and cumulative number of species in a tabulated form) should be provided in the EIA report. Some of the grids on the edges may not be completely overlapping with the study area boundaries. However, these should be counted and considered for selecting 25% of the grids. The number of grids to be surveyed may come out as a decimal number (i.e. it has an integral and a fractional part) which should be rounded to the next whole number.
3.	The conventional sampling is likely to miss the presence of rare, endangered and threatened (r.e.t.) species since they often occur in low densities and in case of faunal species are usually secretive in behaviour. Reaching the conclusion about the absence of such species in the study area based on such methodology is misleading. It is very important to document the status of such species owing to their high conservation value. Hence likely presence of such species should be ascertained from secondary sources by a proper literature survey for the said area including referring to field guides which are now available for many taxonomic groups in India. Even literature from studies/surveys in the larger landscapes which include the study area for the concerned project must be referred to, since most species from adjoining catchments is likely to be present in the catchments in question. In fact such literature form the entire state can be referred to. Once a listing of possible r.e.t. species form the said area is developed, species specific methodologies should be adopted to ascertain their presence in the study area which would be far more conclusive as compared to the conventional sampling. If the need be, modern methods like camera trapping can be resorted to, particularly for areas in the eastern Himalayas and for secretive/nocturnal species. A detailed listing of the literature referred to, for developing lists of r.e.t. species should be provided in the EIA reports.The conventional sampling is likely to miss the presence of rare, endangered and threatened (r.e.t.) species since they often occur in low densities and in case of faunal species are usually secretive in behaviour. Reaching the conclusion about the absence of such species in the study area based on such methodology is misleading. It is very important to document the status of such species owing to their high conservation value. Hence likely presence of such species should be ascertained from secondary sources by a proper literature survey for the said area including referring to field guides which are now available for many taxonomic groups in India. Even literature from studies/surveys in the larger landscapes which include the study area for the concerned project must be referred to, since most species from adjoining catchments is likely to be present in the catchments in question. In fact such literature form the entire state can be referred to. Once a listing of possible r.e.t. species form the said area is developed, species specific methodologies should be adopted to ascertain their presence in the study area which would be far more conclusive as compared to the conventional sampling. If the need be, modern methods like camera trapping can be resorted to, particularly for areas in the eastern Himalayas and for secretive/nocturnal species. A detailed listing of the literature referred to, for developing lists of r.e.t. species should be provided in the EIA reports.
4.	The R.E.T. species referred to in this point should include species listed in Schedule I and II of Wildlife (Protection) Act, 1972 and those listed in the red data books (BSI, ZSI and IUCN).
Components of the EIA Study: Various aspects to be studied and provided in the EIA/EMP report are as f ollows:	
1.	null

2.	null
3.	Physical geography, Topography, Regional Geological aspects and structure of the Catchment.
4.	Tectonics, seismicity and history of past earthquakes in the area. A site specific study of the earthquake parameters will be done. The results of the site specific earthquake design shall be sent for approval of the NCSDP (National Committee of Seismic Design Parameters, Central water Commission, New Delhi for large dams.
5.	Landslide zone or area prone to landslide existing in the study area should be examined.
6.	Presence of important economic mineral deposit, if any.
7.	Justification for location & execution of the project in relation to structural components (dam /barrage height).
8.	Impact of project on geological environment.
9.	null
10.	Meteorology (viz. Temperature, Relative humidity, wind speed/direction etc.) to be collected from nearest IMD station.
11.	Ambient Air Quality with parameters viz. Suspended Particulate Matter (SPM), Respirable Suspended Particulate Matter (RSPM) i.e. suspended particulate materials < 10 microns, Sulphur dioxide (SO2) and Oxides of Nitrogen (NOX) in the study area at 5-6 Locations.
12.	Existing Noise Levels and traffic density in the study area at 5-6 Locations.
13.	null
14.	Soil classification, physical parameters (viz., texture, Porosity, Bulk Density and water holding capacity) and chemical parameters (viz. pH, electrical conductivity, magnesium, calcium, total alkalinity, chlorides, sodium, potassium, organic carbon, available potassium, available phosphorus, SAR, nitrogen and salinity, etc.) at @ one sample/ha of command area.
15.	null
16.	(i) Generation of thematic maps viz, slope map, drainage map, soil map, land use and land cover map, etc. Based on these, thematic maps, an erosion intensity map should be prepared.
17.	null
18.	History of the ground water table fluctuation in the study area.
19.	Water quality for both surface water and ground water for (i) Physical parameters (pH, temperature, electrical conductivity, TSS); (ii) Chemical parameters (Alkalinity, Hardness, BOD, COD, NO2, PO4, Cl, SO4, Na, K, Ca, Mg, Silica, Oil & Grease, phenolic compounds, residual sodium carbonate); (iii)

	Bacteriological parameter (MPN, Total coliform) and (iv) Heavy Metals (Pb, As, Hg, Cd, Cr-6, total Cr, Cu, Zn, Fe) (6 locations).
20.	Delineation of sub and micro-watersheds, their locations and extent based on the All India Soil and Land Use Survey of India (AISLUS), Department of Agriculture, Government of India. Erosion levels in each micro-watershed and prioritization of micro-watershed through silt yield index (SYI) method of AISLUS
21.	Hydro-Meteorology of the project viz. precipitation (snowfall, rainfall), temperature, relative humidity, etc. Hydro-meteorological studies in the catchment area should be established along-with real time telemetry and data acquisition system for inflows monitoring.
22.	Run off, discharge, water availability for the project, sedimentation rate, etc.
23.	Basin characteristics
24.	Catastrophic events like cloud bursts and flash floods, if any, should be documented.
25.	For estimation of Sedimentation Rate, direct sampling of river flow is to be done during the EIA study. The study should be conducted for minimum one year. Actual silt flow rate to be expressed in ha-m km2 year-1.
26.	Set up a G&D monitoring station and a few rain gauge stations in the catchment area for collecting data during the investigation.
27.	Flow series, 10 daily with 90%, 75% and 50% dependable years discharges.
28.	Information on the 10-daily flow basis for the 90 per cent dependable year the flow intercepted at the dam, the flow diverted to the power house and the spill comprising the environmental flow and additional flow towards downstream of the dam for the project may be given.
29.	The minimum environmental flow shall be 20% of the flow of four consecutive lean months of 90% dependable year, 30% of the average monsoon flow. The flow for remaining months shall be in between 20-30%, depending on the site specific requirements. A site specific study shall be carried out by an expert organization.
30.	Sedimentation data available with CWC may be used to find out the loss in storage over the years.
31.	Hydrological studies/data as approved by CWC shall be utilized in the preparation of EIA/EMP report. Actual hydrological annual yield may also be given in the report. Sedimentation data available with CWC may be used to find out the loss in storage over the years.
32.	A minimum of 1 km distance from the tip of the reservoir to the tail race tunnel should be maintained between upstream and downstream projects.
33.	Besides primary studies, review of secondary data/literature published for project area on flora & fauna including RET species shall be reported in EIA/EMP report.
34.	null

35.	Characterization of forest types (as per Champion and Seth method) in the study area and extent of each forest type as per the Forest Working Plan.
36.	Documentation of all plant species i.e. Angiosperm, Gymnosperm, Pteriodophytes, Bryophytes (all groups).
37.	General vegetation profile and floral diversity covering all groups of flora including lichens and orchids. A species wise list may be provided.
38.	Assessment of plant species with respect to dominance, density, frequency, abundance, diversity index, similarity index, importance value index (IVI) , Shannon Weiner index etc. of the species to be provided. Methodology used for calculating various diversity indices along with details of locations of quadrates, size of quadrates etc. to be reported within the study area in different ecosystems.
39.	Existence of National park, Sanctuary, Biosphere Reserve etc in the study area, if any, should be detailed.
40.	Economically important species like medicinal plants, timber, fuel wood etc.
41.	Details of endemic species found in the project area.
42.	Flora under RET categories should be documented using International Union for the Conservation of Nature and Natural Resources (IUCN) criteria and Botanical Survey of India's Red Data list along-with economic significance. Species diversity curve for RET species should be given.
43.	Cropping pattern and Horticultural Practices in the study area.
44.	null
45.	Fauna study and inventorisation should be carried out for all groups of animals in the study area. Their present status alongwith Schedule of the species.
46.	Documentation of fauna plankton (phyto and zooplankton), periphyton, benthos and fish should be done and analysed.
47.	Information (authenticated) on Avi-fauna and wildlife in the study area.
48.	Status of avifauna their resident/ migratory/ passage migrants etc.
49.	Documentation of butterflies, if any, found in the area.
50.	Details of endemic species found in the project area.
51.	RET species-voucher specimens should be collected along-with GPS readings to facilitate rehabilitation. RET faunal species to be classified as per IUCN Red Data list and as per different schedule of Indian

	Wildlife (Protection) Act, 1972.
52.	Existence of barriers and corridors, if any, for wild animals.
53.	Compensatory afforestation to compensate the green belt area that will be removed, if any, as part of the proposed project development and loss of biodiversity.
54.	Collection of primary data on agricultural activity, crop and their productivity and irrigation facilities components.
55.	For categorization of sub-catchment into various erosion classes and for the consequent CAT plan, the entire catchment (Indian Portion) is to be considered and not only the directly the draining catchment.
56.	Documentation of aquatic fauna like macro-invertebrates, zooplankton, phytoplantktons, benthos etc.
57.	Fish and fisheries, their migration and breeding grounds.
58.	Fish diversity composition and maximum length & weight of the measured populations to be studies for estimation of environmental flow.
59.	Conservation status of aquatic fauna.
60.	Sampling for aquatic ecology and fisheries and fisheries must be conducted during three seasons Pre-monsoon (summer), monsoon and winter. Sizes (length & weight) of important fish species need to be collected and breeding and feeding grounds should also be identified along the project site or in vicinity.
61.	Collection of baseline data on human settlements, health status of the community and existing infrastructure facilities for social welfare including sources of livelihood, job opportunities and safety and security of workers and surroundings population.
62.	Collection of information with respect to social awareness about the developmental activity in the area and social welfare measures existing and proposed by project proponent.
63.	Collection of information on sensitive habitat of historical, cultural and religious and ecological importance.
64.	The socio-economic survey/ profile within 10 km of the study area for demographic profile; Economic Structure; Developmental Profile; Agricultural Practices; Infrastructure, education facilities; health and sanitation facilities; available communication network etc.
65.	Documentation of demographic, Ethnographic, Economic Structure and development profile of the area.
66.	Information on Agricultural Practices, Cultural and aesthetic sites, Infrastructure facilities etc.
67.	Information on the dependence of the local people on minor forest produce and their cattle grazing rights in the forest land.

68.	List of all the Project Affected Families with their name, age, educational qualification, family size, sex, religion, caste, sources of income, land & house holdings, other properties, occupation, source of income, house/land to be acquired for the project and house/land left with the family, any other property, possession of cattle, type of house etc.
69.	Special attention has to be given to vulnerable groups like women, aged persons etc. and to any ethnic/indigenous groups that are getting affected by the project.
Impact Prediction and Mitigation Measures	
1.	The adverse impact due to the proposed project should be assessed and effective mitigation steps to abate these impacts should be described.
2.	Changes in ambient and ground level concentrations due to total emissions from point, line and area sources.
3.	Effect on soil, material, vegetation and human health.
4.	Impact of emissions from DG set used for power during the construction, if any, on air environment.
5.	Pollution due to fuel combustion in equipments and vehicles
6.	Fugitive emissions from various sources
7.	Changes in surface and ground water quality
8.	Steps to develop pisci-culture and recreational facilities
9.	Changes in hydraulic regime and downstream flow.
10.	Water pollution due to disposal of sewage
11.	Water pollution from labour colonies/ camps and washing equipment.
12.	Adverse impact on land stability, catchment of soil erosion, reservoir sedimentation and spring flow (if any) (a) due to considerable road construction / widening activity (b) interference of reservoir with the inflowing stream (c) blasting for commissioning of HRT, TRT and some other structures.
13.	Changes in land use / land cover and drainage pattern
14.	Immigration of labour population
15.	Quarrying operation and muck disposal
16.	Changes in land quality including effects of waste disposal
1	River bank and their stability

7.	
18.	Impact due to submergence.
19.	Impact on forests, flora, fauna including wildlife, migratory avi-fauna, rare and endangered species, medicinal plants etc.
20.	Pressure on existing natural resources
21.	Deforestation and disturbance to wildlife, habitat fragmentation and wild animal's migratory corridors
22.	Compensatory afforestation-identification of suitable native tree species for compensatory afforestation and green belt.
23.	Impact on fish migration and habitat degradation due to decreased flow of water
24.	Impact on breeding and nesting grounds of animals and fish.
25.	Impact on local community including demographic profile.
26.	Impact on socio-economic status
27.	Impact on economic status.
28.	Impact on human health due to water / vector borne disease
29.	Impact on increase traffic
30.	Impact on Holy Places and Tourism
31.	Impacts of blasting activity during project construction which generally destabilize the land mass and leads to landslides, damage to properties and drying up of natural springs and cause noise population will be studies. Proper record shall be maintained of the baseline information in the post project period.
32.	Positive and negative impacts likely to be accrued due to the project are listed.
Environmental Management Plan	
1.	null
2.	Biodiversity and Wildlife Conservation and Management Plan for the conservation and preservation of

	rare, endangered or endemic floral/faunal species or some National Park/Sanctuary/ Biosphere Reserve or other protected area is going to get affected directly or indirectly by construction of the project, then suitable conservation measures should be prepared in consultation with the State Forest Department and with the physical and financial details. Suitable conservation techniques (in-situ/ ex-situ) will be proposed under the plan and the areas where such conservation is proposed will be marked on a project layout map.
3.	Compensatory Afforestation shall be prepared by the State Forest Department in lieu of the forest land proposed to be diverted for construction of the project as per the Forest (Conservation) Act, 1980. Choice of plants for afforestation should include native and RET species, if any. This will be a part of the forest clearance proposal.
4.	Fisheries Conservation and Management Plan - a specific fisheries management measures should be prepared for river and reservoir. If the construction of fish ladder/ fish-way etc. is not feasible then measures for reservoir fisheries will be proposed. The plan will detail out the number of hatcheries, nurseries, rearing ponds etc. proposed under the plan with proper drawings. If any migratory fish species is getting affected then the migratory routes, time/season of upstream and downstream migration, spawning grounds etc will be discussed in details.
5.	Green Belt Development Plan along the periphery of the reservoir, approach roads around the colonies and other project components, local plant species must be suggested with physical and financial details. A layout map showing the proposed sites for developing the green belt should be prepared.
6.	Environmental Monitoring Programme to monitor the mitigatory measures implemented at the project site is required will be prepared. Provision for Environment Management Cell should be made. The plan will spell out the aspects required to be monitored, monitoring indicators/parameters with respect to each aspect and the agency responsible for the monitoring of that particular aspect throughout the project implementation.
7.	Catchment Area Treatment (CAT) Plan should be prepared micro-watershed wise. Identification of free draining/ directly draining catchment based upon Remote Sensing and Geographical Information System (GIS) methodology and Sediment Yield Index (SYI) method of AISLUS, Deptt. of Agriculture, Govt. of India coupled with ground survey. Areas or watersheds falling under 'very severe' and 'severe' erosion categories should be provided and required to be treated. Both biological as well as engineering measures should be proposed in consultation with State Forest Department for areas requiring treatment. Year-wise schedule of work and monetary allocation should be provided. Mitigation measures to check shifting cultivation in the catchment area with provision for alternative and better agricultural practices should be included.
8.	Study of Design Earthquake Parameters: A site specific study of earthquake parameters should be done. Results of the site specific earthquake design parameters should be approved by National Committee of Seismic Design Parameters, Central Water Commission (NCSDP), New Delhi.
9.	Dam Break Analysis and Disaster Management Plan The outputs of dam break model should be illustrated with appropriate graphs and maps clearly bringing out the impact of Dam Break scenario. To identify inundation areas, population and structures likely to be affected due to catastrophic floods in the event of dam failure. DMP will be prepared with the help of Dam Break Analysis. Maximum water level that would be attained at various points on the downstream in case of dam break will be marked on a detailed contour map of the downstream area, to show the extent of inundation. The action plan will include Emergency Action and Management plan including measures like preventive action notification, warning procedure and action plan for co-ordination with various authorities.
10.	Reservoir Rim Treatment Plan for stabilization of land slide / land slip zones, if any, around the reservoir periphery is to be prepared based on detailed survey of geology of the reservoir rim area. Suitable engineering and biological measures for treatment of identified slip zones to be suggested with physical

	and financial schedule. Layout map showing the landslide/landslip zones shall be prepared and appended in the chapter.
11.	Muck Disposal Plan- suitable sites for dumping of excavated material should be identified in consultation with the State Pollution Control Board and Forest Department. All Muck disposal sites should be minimum 30 m away from the HFL of river. Plan for rehabilitation of muck disposal sites should also be given. The L- section/ cross section of muck disposal sites and approach roads to be given. Financial out lay for this may be given separately. Deatailed muck transportation plan delinating the path ways, number of trucks, quantity of muck to be transportated along with monitoring mechanism using latest technology, shall be prepared.
12.	Restoration Plan for Quarry Sites and landscaping of colony areas, working areas, roads etc. Details of the coarse/fine aggregate/clay etc. required for construction of the project and the rock/clay quarries/river shoal sites identified for the project should be discussed along-with the Engineering and Biological measures proposed for their restoration with physical and financial details. Layout map showing quarry sites vis-à-vis other project components, should be prepared.
13.	Resettlement and Rehabilitation Plan needed to be prepared on the basis of findings of the socio-economic survey coupled with the outcome of public consultation held. The R&R package shall be prepared after consultation with the representatives of the project affected families and the State Government. Detailed budgetary estimates are to be provided. Resettlements site should be identified. The plan will also incorporate community development strategies.
14.	Public Health Delivery Plan including the provisions of drinking water supply for local population shall be in the EIA/EMP Report. Status of the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the need of the labour force and local populace.
15.	Local Area Development Plan to be formulated in consultation with the Revenue Officials and Village Pancahayats. Appropriate schemes shall be prepared under EMP for the Local Area Development Plan with sufficient financial provisions.
16.	Labour Management Plan for their Health and Safety.
17.	Sanitation and Solid waste management plan for domestic waste from colonies and labour camps etc.
18.	Energy Conservation Measures for the work force during construction with physical and financial details. Alternatives will be proposed for the labour force so that the exploitation of the natural resource (wood) for the domestic and commercial use is curbed.
19.	Environmental safeguards during construction activities including Road Construction.
20.	A summary of Cost Estimates for all the plans, cost for implementing all the Environmental Management Plans.
21.	Water, Air and Noise Management Plans to be implemented during construction and post-construction periods.

3.6. Agenda Item No 6:

3.6.1. Details of the proposal

Varikapudisela Lift Irrigation Scheme by Water Resource Department by **WATER RESOURCE DEPARTMENT,ANDHRA PRADESH** located at **PALNADU,ANDHRA PRADESH**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity** **Sub-Activity** **(Schedule Item)**
IA/AP/RIV/562845/2025	J-12011/47/2025-IA.I(R)	23/12/2025	River Valley/Irrigation projects Irrigation Projects (1(c))

3.6.2. Project Salient Features

Agenda Item No. 46.6

Varikapudisela Lift Irrigation Scheme (CCA: 34,196Ha) in an area of 249.13 Ha located at Village Adigoppula, Atmakuru, Darivemula, etc., Sub District Veldurthi, Durgi, Macherla, Pullalacheruvu etc, District Prakasam, Palnadu and Nagarkurnool, Telangana by M/s Water Resource Department, Andhra Pradesh– Terms of References (TOR) – reg.

[Proposal No. IA/AP/RIV/562845/2025 ; F. No. J-12011/47/2025-IA.I (R)]

46.6.1 The proposal is for grant of Terms of Reference (ToR) to the project Varikapudisela Lift Irrigation Scheme (CCA: 34,196Ha) in an area of 249.13 Ha located at Village Adigoppula, Atmakuru, Darivemula, etc., Sub District Veldurthi, Durgi, Macherla, Pullalacheruvu etc, District Prakasam, Palnadu and Nagarkurnool, Telangana by M/s Water Resource Department, Andhra Pradesh.

46.6.2 The Project Proponent and the accredited Consultant M/s.SV Enviro Labs & Research Private Limited (formerly known as SV Enviro Labs & Consultants), made a detailed Presentation on the salient features of the project and informed that:

i. Varikapudisela lift irrigation scheme is proposed to lift and draw water from Varikapudisela vagu (stream) in Palnadu district of Veldurthy mandal and use it to irrigate the mandals of Veldurthy, Durgi, Macherla, Karempudi mandals. The total ayacut of the project is about 84,500 acres covering Veldurthi, Durgi, Karempudi and Macherla mandal of Palnadu District.

ii. The proposed command area of L.I scheme is a part of chronically drought-stricken, rainshadow region of Palnadu area with an average annual rainfall of 634 mm. In light of the above, climatic, demographic conditions and socio-economic conditions, the farmers of the area are in dire need of assured drinking water and irrigation supply for their livelihoods. The overall agricultural output of the area, region and state can be substantially improved thereby contributing to the nation's prosperity.

iii. The proposed project is a lift irrigation scheme to provide water for irrigation to an ayacut of 84,500 acres (34,196 Ha) and drinking water needs in Veldurthi, Durgi, Karempudi, Macherla Mandal of Palnadu district (erstwhile Guntur District).

iv. **Background:**

a) The farmers of Veldurthi, Uppalapadu, Gangulakunta, Gottipalla, Sirigiripadu, Bodilaveedu and Loyapalli villages in Veldurthi Mandal of Palnadu district (erstwhile Guntur District), Andhra Pradesh have represented the then Hon'ble Chief Minister of Andhra Pradesh to create source of water for irrigating an ayacut of about 24900 acres (10076 Ha) through

a lift irrigation scheme.

b) The then Govt. of Andhra Pradesh during the year 2007 inaugurated the Anupu, Koppunuru and Jeerivagu L.I. Schemes by tapping the monsoon flows. Similar representations were made during the inauguration of Kondaveetivagu L.I. Scheme on dt.16-09-2018.

c) Subsequently, the then Hon'ble Chief Minister has given assurance to the farmers and directed the Andhra Pradesh State Irrigation Development Corporation (APSIDC) to develop the Varikapudisela project to supply irrigation water to 24900 acres (10076 Ha) in Veldurthi, Uppalapadu, Gangulakunta, Gottipalla, Sirigiripadu, Bodilaveedu and Loyapalli villages in Veldurthi Mandal of Palnadu district (erstwhile Guntur District). Accordingly, the APSIDC has taken up preliminary investigation and observed that the proposal is technically feasible. The Government of Andhra Pradesh accorded permission to enhance the scope to 84,500 acres instead of 24,900 Acres vide GO RT No 583 Dt 31-10-2025.

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

Latitude	16°15'59"N
Longitude	79°14'15"E

vi. **Land requirement:**

Forest Land: 19.13 Ha

Non-Forest land: 230Ha

Total =270 ha (Including 21.44 ha of CA lands)

vii. **Water requirement:** 30 KLD during construction phase

a) The total ayacut of the project is about 34196 Ha covering Veldurthi, Durgi, Macherla and Karempudi Mandals of Palnadu district (erstwhile Guntur district)

b) Drinking water to 20000 Population.

Parameter	**Site 1 (Jerri vagu)**	**Site.2 (Varikapudisela)**
Source	The water availability at the Jer rivagu LI Scheme is 0.27 TMC s ufficient to irrigate about 3200 acres (1295 Ha)	As there is no other scheme on Va rikapudisela vagu, the entire yield from this vagu can be utilized for i rrigating 84,500 acres (Ha) sche me.
Elevation differ ence	Elevation difference between the pump house and comman d area is 87.78 mt. Lengths - Pressure main 6.5km Length of Gravity Main 0.00 K m length	Elevation difference between the pump house and command area is 122 mt. Lengths-Pressure main 1.25km – Two rows. Length of Gravity Main is 92.0 Km – Two rows

Muck Quantities	The quantity of muck estimated for the construction of Pump House 2800 cum, Pressure main 6250 cum	The quantity of muck estimated for the construction of Pump House 2,50,000 cum, from Pressure main about 46,000 cum and gravity main is 28,30,000 Cum is anticipated
Power Requirement	Power required to lift 0.27 TMC is 1.410 MW	Power required to lift 4.867TMC is 41.60 MW
Land Requirement		
a. Forest Land Requirement for construction of Pump House	1.83 Ha of forest area will utilized by the APSIDC	19.13 Ha of forest Land is required for which Stage-I forest Clearance has been obtained
b. Private Land	Along the Pipeline alignment the land required is 0.9 ha	Along the Pipeline alignment the land required is 230 ha
Biodiversity	The site is a part of Core zone of the Tiger reserve.	The area is within the core area of the Tiger reserve.

xii. **Details of Solid waste/ Hazardous waste generation/ Muck and its management:** Solid Waste from labor camps -100-110 Kg/day Construction debris -3175260 Cum

xiii. Status of Litigation Pending against the proposal, if any. NIL

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

Name of the Proposal	Varikapudisela Lift Irrigation Scheme
Location (Including coordinates)	Gangulakunta (V) in Veldurthi (M) of Palnadu district (erstwhile Guntur district) 16°15'59"N 79°14'15"E (Pump house shall be located within 500 mts of above mentioned locations)
Inter-state issue involved	No
Seismic zone	II/III as per seismic zonation map of India
Category of the project	1(c)
Provisions	--

Capacity/Cultural command area(CCA)	34196 Ha
Attracts the General Conditions(Yes/No)	Yes, Pump house is within the Nagarjuna Sa gar-Srisialam tiger reserve which is a part of Rajiv Gandhi wild life sanctuary
Additional information (ifany)	Nil
Powerhouse Installed Capacity	Nil
Generation of Electricity Annually-No of U nits	Nil
Additional information (if any)	Not Applicable as hydropower is not propose d
Cost of project	Rs. 3227.15Crores
Total area of Project	270.5 ha (including CA Lands)
Height of Dam from River Bed (EL)	Not Proposed
Length of Tunnel/Channel	Not Proposed
Details of Submergence area	No area will be under submergence as the pr oposed project involves setting up of pump house on the bank of Varikapudisela vagu an d laying of a pipeline.
Types of Waste and quantity of generation During construction/Operation	Solid Waste from labor camps -100-110 Kg/ day Construction debris -3175260 Cum
E-Flows for the Project	15%
Is Projects earlier studies in Cumulative I mpact assessment & Carrying Capacity studies (CIA&CC) for River in which proj ect located. If yes, then	Details will be furnished in EIA Report
a) E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Bas in.	
a) If not the E-Flows maintain criteria for s ustaining river ecosystem.	
b) No.of trees/saplings proposed in view o f 'Ek Ped Maa Ke Naam' campaign	

No.of proposed disposal area/(type of land-Forest/Pvt.land)	Details shall be furnished in the EIA/EMP report
Muck Management Plan	Details shall be furnished in the EIA/EMP report
Monitoring mechanism for Muck Disposal	Details shall be furnished in the EIA/EMP report

Private land	230 Ha
Government land	
Forest Land	19.13 Ha
Total Land	270.5 (Including 21.44 Ha Of CA lands)
Submergence area/Reservoir area	Nil
Additional information(if any)	-

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate/letter/ Remarks**
Reserve Forest/Protected Forest Land	Yes	Gangulakunta Beat Comp No.67, Gottipalla Beat Comp No,68 of Gangulakunta RF, V.p.South Range & Rajiv Gandhi wildlife sanctuary
National Park	No	
Wildlife Sanctuary	Yes	

Particulars	**Letter no.and date**
Certified EC compliance report (if applicable)	Not Applicable
Status of Stage-IFC	Obtained
Additional detail (If any)	Letter dated 6.11.2023., F.No 4-APC133/2021-VIJ/1372
Is FRA(2006)done for FC-I	No

Particulars	**Details**
Details of consultant	SV Enviro Labs & Research Private Limited (formerly known as SV Enviro Labs & Consultants) :B1-Block –B, IDA Auto Nagar, Visakhapatnam- 530012 NABET Certificate No: NABET/EIA/25-28/R

	A 0394
Project Benefits	1. The total ayacut of the project is about 3 4196 Ha covering Veldurthi, Durgi, Macherl a and Karempudi Mandals of Palanadu Distr ict (erstwhile Guntur District). 2. Drinking water provision to about 20000 people shall be made
Status of other statutory clearances	Shall be obtained
R&R details	No R &R is required as the project does not involve displacement of any population
Additional detail (If any)	Nil

3.6.3. Deliberations by the committee in previous meetings

N/A

3.6.4. Deliberations by the EAC in current meetings

46.6.4 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 Varikapudisela Lift Irrigation Scheme (CCA: 34,196Ha) in an area of 249.13 Ha located at Village Adigoppula, Atmakuru, Darivemula, etc., Sub District Veldurthi, Durgi, Macherla, Pullalacheruvu etc, District Prakasam, Palnadu and Nagarkurnool, Telangana by M/s Water Resource Department, Andhra Pradesh.

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: 34196 ha). However, the project is falling under Rajiv Gandhi Wildife Sanctuary and Telangana Interstate border is 0.88 km from the project site hence, it requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

The EAC observed that the proposed command area of L.I scheme is a part of chronically drought-stricken, rain-shadow region of Palnadu area with an average annual rainfall of 634. mm. LIS is to provide ayacut to 34196 Ha, are covered in10 Villages of Durgi Mandal, 3238 Ha are covered in 3 Villages of Macherla Mandal, and 1748 Ha in 3 Villages of Karempudi Mandals of Macherla Constituency. About 25 villages get irrigation sources and about 20,000 people gets drinking water. The water requirement for the proposed LI Scheme is 4.86 TMC* for 16 hours pumping considering 4 months (120 days) crop period from September to December.

The Committee observed that in the total land required for the total land requirement for the project is 249.13 ha of which 19.13 ha is forest land while 230 ha is non-forest land. It was further observed that Stage- I Forest Clearance for 19.13 Ha has been granted by the Regional Office, MoEF&CC vide letter no. 4-APC133/2021-VIJ dated 06/11/2023.

The EAC also noted that the project proposed is project is falling under Rajiv Gandhi Wildife Sanctuary and the forest department of Government of Andhra Pradesh vide its letter no.21024/48/2020/WL-2 dated 31.05.2023 has informed that Standing committee of the National Board for Wildlife has recommended the proposal.

46.6.4 The EAC based on the information submitted and as presented during the meeting, recommended the proposal for grant of Standard ToR issued by the Ministry for conducting EIA/EMP study with Public consultation for Varikapudisela Lift Irrigation Scheme (CCA: 34,196Ha) in an area of 249.13 Ha located at Village Adigoppula, Atmakuru, Darivemula, etc., Sub District Veldurthi, Durgi, Macherla, Pullalacheruvu etc, District Prakasam, Palnadu and Nagarkurnool, Telangana by M/s Water Resource Department, Andhra Pradesh, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR.

3.6.5. Recommendation of EAC

Recommended

3.6.6. Details of Terms of Reference

3.6.6.1. Specific

Miscellaneous:	
1.	Pre-DPR Chapters viz. Hydrology, Layout Map Studies duly approved by CWC shall be submitted.
2.	PP shall obtain clearance from the inter-State aspect from the designated authorities as per the procedure.
3.	Undertaking need to submitted on affidavit that regarding no activities has been yet started on the project site and water allocated to this scheme shall not be diverted to other purpose.
4.	Both capital and recurring expenditure under EMP shall be submitted.
5.	The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyse the samples.
6.	Arial view video of project site shall be recorded and to be submitted.
7.	As per Ministry's OM dated 1st August, 2013, PP shall submit application to obtain prior approval of Central Government under the Forest Conservation Act, 1980 for diversion of forest land required for such projects will be submitted as soon as the actual extent of forest land required for the project is known to the project proponent, and in any case, within 6 months of issuance of ToR. However, no proposal will be put up before EAC without submission of application for forest clearance, wherever applicable.
Muck Management:	
1.	Details of quantity of muck generation component wise and disposal site along with transportation plan and its monitoring to be provided.
2.	Details of Muck Management plan prepared along with estimated cost incorporated in

	EIA/EMP report.
3.	Techno-economic viability of the project must be recommended from CWC.
Socio-economic Study:	
1.	Public Health Delivery Plan including the provisions of drinking water supply for local population shall be in the EIA/EMP Report. Status of the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the need of the labour force and local population.
2.	Declaration by the Project Proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with any State in the project.
3.	All the tasks including conducting public hearing shall be done as per the provisions of EIA Notification, 2006 and as amended from time to time. Public hearing issues raised and compliance of the same shall be incorporated in the EIA/ EMP report in the relevant chapter.
4.	Statement on the commitments (activity-wise) made during public hearing to facilitate the discussion on the CER in compliance of the Ministry's OM F. No. 22- 65/2017- IA.III dated 30th September, 2020 shall be submitted.
5.	Tentative no. of project affected families shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared.
6.	Details of settlement in 10 km area shall be submitted.
Environmental Management and Biodiversity Conservation:	
1.	Necessary inter-state clearances/ approvals shall be obtained from respective authorities / State Govt.
2.	The habitat fragmentation effects shall be studied in consultation with WII/expert government research institute in terms of edge effects, increased competition, lower biodiversity, human-wildlife conflict and reduced access to resources emphasising on nesting behaviour of Ghariyals, Indian skimmers and Indian Soft Shell Turtle.
3.	A detailed wildlife conservation plan for Schedule –I species along with mitigation measures for minimizing the human–animal conflict, duly approved by the Chief Wildlife Warden, be submitted. NBWL recommendations shall be submitted along with EIA/EMP report.
4.	Prepare Environmental Cost Benefit Analysis in terms of ecological damage due to diversion of Forest land/ loss of biodiversity and its impacts on ecosystem, water availability, water uses for irrigation in study area (10 km from periphery of Project components).
5.	A study shall be carried out on impact of project activity on the aquatic and terrestrial ecosystem, within project area classifying the impact zones (highly impact/low impact zone) based on seasonal variations and covering the aspects related to impacts on aquatic ecosystem/ primary productivity due to quantity of water to be lifted and thermal stratification. Accordingly, Environment Management plan shall be prepared.

6.	Sampling locations be located to cover villages situated near the reservoir and around boundary of forest area for collection of baseline data and data to be incorporated in EIA/EMP report.
7.	Source of construction material and its distance from the project site along with detailed transportation plan for construction material be elaborated in the EIA EMP report. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report.
8.	In case any wildlife corridor is located within 10 km radius of the project site a detailed study shall be conducted to assess the impact of project on safe movement of wild animals.
9.	Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.
10.	Muck disposal site and other components such as Township, site office, Stacking area and batching plant shall be located outside the forest area.
11.	PP shall prepare detailed plan for Plantation of saplings under the tree plantation campaign "Ek Ped Ma Ke Naam".

3.6.6.2. Standard

1(c)	**River Valley/Irrigation projects**
Scope of EIA Study	
1.	The EIA Report should identify the relevant environmental concerns and focus on potential impacts that may change due to the construction of proposed project. Based on the baseline data collected for three (3) seasons (Pre-monsoon, Monsoon and Winter seasons), the status of the existing environment in the area and capacity to bear the impact on this should be analysed. Based on this analysis, the mitigation measures for minimizing the impact shall be suggested in the EIA/EMP study.
Details of the Project and Site	
1.	General introduction about the proposed project.
2.	Details of Project and site giving L-Sections of all U/S and D/S Projects with all relevant maps and figures. Connect such information as to establish the total length of interference of Natural River and the committed unrestricted release from the site of Dam/Barrage into the main river.
3.	A map of boundary of the project site giving details of protected areas in the vicinity of 25 km of project location.
4.	Location details on a map of the project area with contours indicating main project features. The project layout shall be superimposed on a contour map of ground elevation showing main project features (viz. location of dam, Head works, main canal, branch canals, quarrying etc.) shall be depicted in a scaled map.
5.	Layout details and map of the project along with contours with project components clearly marked with proper scale maps of at least 1:50,000 scale and printed at least on A3 scale for clarity.

6.	Existence of National Park, Sanctuary, Biosphere Reserve etc. in the study area, if any, should be detailed and presented on a map with distinct distances from the project components.
7.	Drainage pattern and map of the river catchment up to the proposed project site.
8.	Delineation of critically degraded areas in the directly draining catchment on the basis of Silt Yield Index as per the methodology of Soil and Land use Survey of India.
9.	Soil characteristics and map of the project area.
10.	Geological and Seismo-tectonic details and maps of the area surrounding the proposed project site showing location of dam site and canal sites.
11.	Remote Sensing studies, interpretation of satellite imagery, topographic sheets along with ground verification shall be used to develop the land use/land cover pattern of the study using overlaying mapping techniques viz. Geographic Information System (GIS), False Color Composite (FCC) generated from satellite data of project area.
12.	Land details including forests, private and other land.
13.	Demarcation of snow fed and rain fed areas for a realistic estimate of the water availability
Description of Environment and Baseline Data	
1.	To know the present status of environment in the area, baseline data with respect to environmental components air, water, noise, soil, land and biology & biodiversity (flora & fauna), wildlife, socioeconomic status etc. should be collected within 10 km radius of the main components of the project/site i.e. dam site and power house site. The air quality and noise are to be monitored at such locations which are environmentally & ecologically more sensitive in the study area. The baseline studies should be collected for 1 season (Preferably Monsoon season). Flora-Fauna in the catchment and command area should be documented. The study area should comprise of the following:
2.	(i) Catchment area up to the dam/barrage site.
3.	(ii) Submergence Area.
4.	(iii) Project area or the direct impact area should comprise of area within 10 km radius of the main project components like dam, canals etc.
5.	(iv) Downstream upto 10 km from the tip of the reservoir.
Details of the Methology	
1.	The methodology followed for collection of base line data along with details of number of samples and their locations in the map should be included. Study area should be demarcated properly on the appropriate scale map. Sampling sites should be depicted on map for each parameter with proper legends. For Forest Classification, Champion and Seth (1968) methodology should be followed.
Methodology for Collection of Biodiversity Data	
1.	The number of sampling locations should be adequate to get a reasonable idea of the diversity and other

	attributes of flora and fauna. The guiding principles should be the size of the study area (larger area should have larger number of sampling locations) and inherent diversity at the location, as known from secondary sources (e.g. eastern Himalayan and low altitude sites should have a larger number of sampling locations owing to higher diversity).
2.	The entire area should be divided in grids of 5kmX5km preferably on a GIS domain. There after 25% of the grids should be randomly selected for sampling of which half should be in the directly affected area (grids including project components such as reservoir, dam, powerhouse, tunnel, canal etc.) and the remaining in the rest of the area (areas of influence in 10 km radius form project components). At such chosen location, the size and number of sampling units (e.g. quadrates in case of flora/transects in case of fauna) must be decided by species area curves and the details of the same (graphs and cumulative number of species in a tabulated form) should be provided in the EIA report. Some of the grids on the edges may not be completely overlapping with the study area boundaries. However, these should be counted and considered for selecting 25% of the grids. The number of grids to be surveyed may come out as a decimal number (i.e. it has an integral and a fractional part) which should be rounded to the next whole number.
3.	The conventional sampling is likely to miss the presence of rare, endangered and threatened (r.e.t.) species since they often occur in low densities and in case of faunal species are usually secretive in behaviour. Reaching the conclusion about the absence of such species in the study area based on such methodology is misleading. It is very important to document the status of such species owing to their high conservation value. Hence likely presence of such species should be ascertained from secondary sources by a proper literature survey for the said area including referring to field guides which are now available for many taxonomic groups in India. Even literature from studies/surveys in the larger landscapes which include the study area for the concerned project must be referred to, since most species from adjoining catchments is likely to be present in the catchments in question. In fact such literature form the entire state can be referred to. Once a listing of possible r.e.t. species form the said area is developed, species specific methodologies should be adopted to ascertain their presence in the study area which would be far more conclusive as compared to the conventional sampling. If the need be, modern methods like camera trapping can be resorted to, particularly for areas in the eastern Himalayas and for secretive/nocturnal species. A detailed listing of the literature referred to, for developing lists of r.e.t. species should be provided in the EIA reports.The conventional sampling is likely to miss the presence of rare, endangered and threatened (r.e.t.) species since they often occur in low densities and in case of faunal species are usually secretive in behaviour. Reaching the conclusion about the absence of such species in the study area based on such methodology is misleading. It is very important to document the status of such species owing to their high conservation value. Hence likely presence of such species should be ascertained from secondary sources by a proper literature survey for the said area including referring to field guides which are now available for many taxonomic groups in India. Even literature from studies/surveys in the larger landscapes which include the study area for the concerned project must be referred to, since most species from adjoining catchments is likely to be present in the catchments in question. In fact such literature form the entire state can be referred to. Once a listing of possible r.e.t. species form the said area is developed, species specific methodologies should be adopted to ascertain their presence in the study area which would be far more conclusive as compared to the conventional sampling. If the need be, modern methods like camera trapping can be resorted to, particularly for areas in the eastern Himalayas and for secretive/nocturnal species. A detailed listing of the literature referred to, for developing lists of r.e.t. species should be provided in the EIA reports.
4.	The R.E.T. species referred to in this point should include species listed in Schedule I and II of Wildlife (Protection) Act, 1972 and those listed in the red data books (BSI, ZSI and IUCN).
Components of the EIA Study: Various aspects to be studied and provided in the EIA/EMP report are as f ollows:	
1.	null

2.	null
3.	null
4.	Physical geography, Topography, Regional Geological aspects and structure of the Catchment.
5.	Tectonics, seismicity and history of past earthquakes in the area. A site specific study of the earthquake parameters will be done. The results of the site specific earthquake design shall be sent for approval of the NCSDP (National Committee of Seismic Design Parameters, Central water Commission, New Delhi for large dams.
6.	Landslide zone or area prone to landslide existing in the study area should be examined.
7.	Presence of important economic mineral deposit, if any.
8.	Justification for location & execution of the project in relation to structural components (dam /barrage height).
9.	Impact of project on geological environment.
10.	null
11.	Meteorology (viz. Temperature, Relative humidity, wind speed/direction etc.) to be collected from nearest IMD station.
12.	Ambient Air Quality with parameters viz. Suspended Particulate Matter (SPM), Respirable Suspended Particulate Matter (RSPM) i.e. suspended particulate materials < 10 microns, Sulphur dioxide (SO2) and Oxides of Nitrogen (NOX) in the study area at 5-6 Locations.
13.	Existing Noise Levels and traffic density in the study area at 5-6 Locations.
14.	null
15.	Soil classification, physical parameters (viz., texture, Porosity, Bulk Density and water holding capacity) and chemical parameters (viz. pH, electrical conductivity, magnesium, calcium, total alkalinity, chlorides, sodium, potassium, organic carbon, available potassium, available phosphorus, SAR, nitrogen and salinity, etc.) at @ one sample/ha of command area.
16.	null
17.	Generation of thematic maps viz, slope map, drainage map, soil map, land use and land cover map, etc. Based on these, thematic maps, an erosion intensity map should be prepared.
18.	New configuration map to be given in the EIA Report
19.	null

20.	History of the ground water table fluctuation in the study area.
21.	Water Quality for both surface water and ground water for [i] Physical parameters (pH, Temperature, Electrical Conductivity, TSS); [ii] Chemical parameters (Alkalinity, Hardness, BOD, COD, NO3, PO4, Cl, So4, Na, K, Ca, Mg, Silica, Oil & grease, phenolic compounds, residual sodium carbonate);[iii] Bacteriological parameter (MPN, Total coliform); and [iv] Heavy Metals (Pb, As, Hg, Cd, Cr6,Total Cr, Cu, Zn, Fe) at minimum10 Locations, however, the sampling numbers should be increased depending on the command area.
22.	Delineation of sub and micro watersheds, their locations and extent based on the Soil and Land Use Survey of India (SLUSOI), Department of Agriculture, Government of India. Erosion levels in each micro-watershed and prioritization of micro-watershed through Silt Yield Index (SYI) method of SLUSOI.
23.	Hydro-Meteorology of the project viz. precipitation (snowfall, rainfall), temperature, relative humidity, etc. Hydro-meteorological studies in the catchment area should be established along-with real time telemetry and data acquisition system for inflows monitoring.
24.	Run off, discharge, water availability for the project, sedimentation rate, etc.
25.	Basin characteristics
26.	Catastrophic events like cloud bursts and flash floods, if any, should be documented.
27.	For estimation of Sedimentation Rate, direct sampling of river flow is to be done during the EIA study. The study should be conducted for minimum one year. Actual silt flow rate to be expressed in ha-m km2 year-1.
28.	Set up a G&D monitoring station and a few rain gauge stations in the catchment area for collecting data during the investigation.
29.	Flow series, 10 daily with 90%, 75% and 50% dependable years discharges.
30.	Environmental flow release should be 20% of the average of the 4 lean months of 90% dependable year during the lean season and 30% of Monsoon flow during monsoon season. For remaining months, the flow shall be decided by the Committee based on the hydrology and available discharge.
31.	A site specific study on minimum environment flow should be carried
32.	null
33.	null
34.	Characterization of forest types (as per Champion and Seth method) in the study area and extent of each forest type as per the Forest Working Plan.
3	General vegetation profile and floral diversity covering all groups of flora including Bryophytes,

5.	Pteridophytes, Lichens and Orchids. A species wise list may be provided.
36.	Assessment of plant species with respect to dominance, density, frequency, abundance, diversity index, similarity index, importance value index [IVI], Shannon Weiner Index etc. of the species to be provided. Methodology used for calculating various diversity indices along with details of locations of quadrats, size of quadrats etc. to be reported within the study area in different ecosystems.
37.	Existence of National Park, Sanctuary, Biosphere Reserve etc in the study area, if any, should be detailed.
38.	Economically important species like medicinal plants, timber, fuel wood etc.
39.	Details of endemic species found in the project area.
40.	Flora under RET categories should be documented using International Union for the Conservation of Nature and Natural Resources (IUCN) criteria and Botanical Survey of India's Red Data list along with economic significance. Species diversity curve for RET species should be given.
41.	Fauna study and inventorisation should be carried out for all groups of animals including reptiles and nocturnal animals in the study area. Their present status along with Schedule of the species.
42.	Information (authenticated) on Avi-fauna and wild life in the study area.
43.	Status of avifauna their resident/migratory/ passage migrants etc.
44.	Documentation of butterflies, if any, found in the area.
45.	Details of endemic species found in the project area.
46.	RET species- voucher specimens should be collected along with GPS readings to facilitate rehabilitation. RET faunal species to be classified as per IUCN Red Data list and as per different schedule of Indian Wildlife (Protection) Act, 1972.
47.	Existence of barriers and corridors, if any, for wild animals.
48.	Compensatory afforestation to compensate the green belt area that will be removed, if any, as part of the proposed project development and loss of biodiversity.
49.	For categorization of sub-catchments into various erosion classes and for the consequent CAT plan, the entire catchment (Indian Portion) is to be considered and not only the directly the draining catc
50.	Documentation of aquatic fauna like macro-invertebrates, zooplankton, phytoplanktons, benthos etc.
51.	Fish and fisheries, their migration and breeding grounds.

52.	Fish diversity, composition and maximum length & weight of the measured populations to be studied for estimation of environmental flow.
53.	Conservation status of aquatic fauna.
54.	Cropping pattern and Horticultural practices in the study area.
55.	Collection of primary data on agricultural activity, crop and their productivity and irrigation facilities component.
56.	Component of pressurized/drip irrigation and micro irrigation.
57.	Details of Conjunctive use of water for irrigation
58.	Collection of Baseline data on human settlements, health status of the community and existing infrastructure facilities for social welfare including sources of livelihood, job opportunities and safety and security of workers and surrounding population.
59.	Collection of information with respect to social awareness about the developmental activity in the area and social welfare measures existing and proposed by project proponent.
60.	Collection of information on sensitive habitat of historical, cultural and religious and ecological importance.
61.	The Socio-economic survey/profile within 10 Km of the study area for Demographic profile; Economic Structure; Development Profile; Agricultural Practices; Infrastructure, education facilities; health and sanitation facilities; available communication network etc.
62.	Documentation of Demographic, Ethnographic, Economic structure and development profile of the area
63.	Information on Agricultural practices, Cultural and aesthetic sites, Infrastructure facilities etc
64.	Information on the dependence of the local people on minor forest produce and their cattle grazing rights in the forest land.
65.	List of all the Project Affected Families with their names, education, land holdings, other properties, occupation, source of income, land and other properties to be acquired, etc.
66.	In addition to Socio-economic aspects of the study area, a separate chapter on socio-cultural aspects based upon study on Ethnography of the area should be provided.
Impact Prediction and Mitigation Measures	
1.	The adverse impact due to the proposed project should be assessed and effective mitigation steps to abate these impacts should be described.
2.	Changes in ambient and ground level concentrations due to total emissions from point, line and area

	sources
3.	Effect on soils, material, vegetation and human health
4.	Impact of emissions from DG sets used for power during the construction, if any, on air environment.
5.	Pollution due to fuel combustions in equipments & vehicles
6.	Fugitive emissions from various sources.
7.	Impact on micro climate
8.	Changes in surface & ground water quality. Steps to develop pisci-culture and recreational facilities.
9.	Changes in hydraulic regime and down stream flow.
10.	Water pollution due to disposal of sewage.
11.	Water pollution from labour colony/camps and washing equipment.
12.	Adverse impact on land stability, catchment of soil erosion, reservoir sedimentation and spring flow (if any) [a] due to considerable road construction/widening activity [b] interference of reservoir with the inflowing streams [c] blasting for excavation of canals and some other structures
13.	Changes in land use/land cover and drainage pattern.
14.	Immigration of labour population.
15.	Quarrying operation and muck disposal.
16.	Changes in land quality including effects of waste disposal
17.	River bank and their stability
18.	Impact due to submergence
19.	Impact on forests, flora, fauna including wildlife, migratory avi-fauna, rare and endangered species, medicinal plants etc.
20.	Pressure on existing natural resources
21.	Deforestation and disturbance to wildlife, habitat fragmentation and wild animal's migratory corridors

22.	Compensatory afforestation-Identification of suitable native tree species for compensatory afforestation & green belt.
23.	Impact on fish migration and habitat degradation due to decreased flow of water
24.	Impact on breeding and nesting grounds of animal
25.	Impact on local community including demographic profile.
26.	Impact on socio-economic status.
27.	Impact on economic status.
28.	Impact on human health due to water / vector borne disease.
29.	Impact on increases traffic.
30.	Impact on Holy Places and Tourism.
31.	Impacts of blasting activity during project construction which generally destabilize the land mass and lead to landslides, damage to properties and drying up of natural springs and cause noise pollution, will be studied. Proper record shall be maintained of the base line information in the post project period.
32.	Positive as well as negative impacts likely to be accrued due to the project are to be listed.
Environment Impact Analysis	
1.	Environmental Impact Analysis due to the project on the above mentioned components should be carried out for construction and operation phases using qualitative or quantitative methods.
Environmental Management Plan	
1.	Environmental Management Plan aimed at minimizing the negative impacts of the project should be given in detail. The mitigation measures are to be presented for all the likely adverse impacts on the environment. The following suggestive mitigating plans should be included
2.	Biodiversity and Wild Life Conservation & Management Plan for conservation and preservation of endemic, rare and endangered species of flora and fauna to be prepared in consultation with State Forest Department.
3.	Compensatory Afforestation in lieu of the forest land required for the project needs to be proposed.Choice of plants should be made in consultation with State Forest Department including native and RET species, if any.

4.	Fisheries Conservation & Management Plan-Fish fauna inhabiting the affected stretch of river, a specific fisheries management plan should be prepared for river and reservoir.
5.	Plan for Green Belt Development along the periphery of reservoir, colonies, approach road, canals etc. to be prepared in consultation with the State Forest Department. Local plant species suitable for greenbelt development should be selected.
6.	Environmental Monitoring Programme with physical & financial details covering all the aspects of EMP. A summary of cost estimate for all the plans, cost for implementing all Environmental Management Plans including the cost for implementing environmental monitoring programme should be given. Provision for an Environmental Management Cell should be made.
7.	Catchment Area Treatment (CAT) Plan should be prepared micro-watershed wise. Identification of area for treatment based upon Remote Sensing & GIS methodology and Silt Yield Index (SYI) method of SLUSOI coupled with ground survey. Areas/watersheds falling under 'very severe' and `severe' erosion categories are required to be treated. Both biological and engineering measures should be proposed in consultation with State Forest Department. Year-wise schedule of work and monetary allocation should be provided. CAT plan is to be completed prior to reservoir impoundment. Mitigations measures to check shifting cultivation in the catchment area with provision for alternative and better agricultural practices should be include.
8.	Study of Design Earthquake Parameters: A site specific study of earthquake parameters should be done. The results of the site specific earth quake design parameters should be approval by National Committee of Seismic Design Parameters, Central Water Commission (NCSDP), New Delhi.
9.	Dam Break Analysis and Disaster Management Plan: The outputs of Dam Break Model should be illustrated with appropriate graphs and maps clearly bringing out the impact of Dam break scenario. Provision for early warning systems should be provided.
10.	Reservoir Rim Treatment Plan for stabilization of land slide/land slip zones if any, around the reservoir periphery to be prepared. Suitable engineering and biological measures for treatment of the identified slip zones to be provided with physical and financial schedule.
11.	Muck Disposal Plan- suitable sites for dumping of excavated material should be identified in consultation with the State Pollution Control Board and Forest Department. All Muck disposal sites should be minimum 30 m away from the HFL of river. Plan for rehabilitation of muck disposal sites should also be given. The L- section/ cross section of muck disposal sites and approach roads to be given. Financial out lay for this may be given separately. Deatailed muck transportation plan delinating the path ways, number of trucks, quantity of muck to be transportated along with monitoring mechanism using latest technology, shall be prepared.
12.	Plan for Restoration of quarry sites and landscaping of colony areas, working areas, roads, etc.
13.	Command Area Development (CAD) Plan giving details of implementation schedule with a sample CAD plan.
14.	In the EMP, also include a sample CAD plan for a distributary outlet command. Such a plan is to show the alignment of irrigation and drainage channels. The components of the OFD works to be undertaken may be clearly mentioned along with a time schedule for their completion vis-à-vis the progress of irrigation development.
15.	Mitigating measures for impacts due to Blasting on the structures in the vicinity.

16.	Resettlement and Rehabilitation (R&R) Plan need to be prepared with due consultation with Project Affected Families (PAFs). The provision of the d R&R plan should be according to the National Resettlement and Rehabilitation Policy (NRRP-2007) as well as State Resettlement and Rehabilitation Policy. Detailed budgetary estimates are to be provided. Resettlements sites should be identified.
17.	Public Health Delivery Plan including the provisions for drinking water facility for the local community.
18.	Local Area Development Plan to be formulated in consultation with the Revenue Officials and Village Panchayats. Local skill development schemes should be given. Details of various activities to be undertaken along with its financial out lay should be provided.
19.	Labour Management Plan for their Health and Safety.
20.	Sanitation and Solid Waste Management Plan for domestic waste from colonies and labour camps etc.
21.	Plan for Land Restoration and Landscaping of project sites.
22.	Energy Conservation Measures.
23.	Environmental safeguards during construction activities including Road Construction.
24.	Ground Water Management Plan.
25.	Water and Air Quality & Noise Management Plans to be implemented during construction and post-construction periods.

3.7. Agenda Item No 7:

3.7.1. Details of the proposal

Rajupalem Pumped Storage Project by **APGENCO NHPC GREEN ENERGY LIMITED** located at **PRAKASAM,ANDHRA PRADESH**			
Proposal For		Fresh ToR	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/AP/RIV/562968/2025	J-12011/45/2025-IA.I(R)	29/12/2025	River Valley/Irrigation projects Standalone Pump Storage Projects (1(c))

3.7.2. Project Salient Features

Agenda Item No. 46.6

Rajupalem Close loop Pumped Storage Project (800 MW) in an area of 334.8 Ha located at Village Musalreddipalle, Reddicherla, etc, Sub District Kalasapadu, Komarolu and Porumamilla, District Y.S.R. and Prakasam, Andhra Pradesh by M/s APGENCO NHPC Green Energy Limited – Terms of References (TOR) – reg.

[Proposal No. IA/AP/RIV/562968/2025; F. No. J-12011/45/2025-IA.I (R)]

46.6.1 The proposal is for grant of Terms of Reference (ToR) to the project Rajupalem Close loop Pumped Storage Project (800 MW) in an area of 334.8 Ha located at Village Musalreddipalle, Reddicherla, etc, Sub District Kalasapadu, Komarolu and Porumamilla, District Y.S.R. and Prakasam, Andhra Pradesh by M/s APGENCO NHPC Green Energy Limited.

46.6.2 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. APGENCO NHPC Green Energy Limited (ANGEL), a joint venture company of APGENCO and NHPC has planned to undertake the development of Rajupalem pumped storage project (PSP), located near Mulapalle village, Komarolu Taluka of Prakasam district in Andhra Pradesh state.

ii. Rajupalem PSP is an Off- stream Closed Loop pumped storage scheme with an installed capacity of 800 MW. The scheme of operation considered for the project is daily regulation with 1.5 cycles per day. Accordingly, the plant will meet the demand of about 9.18 hours of peak power daily. Off-peak pumping hours are considered as 10.33 hours daily.

iii. Water will be pumped up to the upper reservoir in pumping mode during off-peak periods. A daily cycle of operation has been proposed for the scheme and it is found that about 9.10 Mm3 of net storage is required for one cycle of the project.

iv. The upper dam is located within the Giddalur (Block II) Reserved Forest area within the administrative boundary of Komarolu Taluka, Prakasam district with the geographical latitude of 15° 12' 51.7" N and longitude of 78° 57' 28.2" E. The lower dam is located in Mulapalle village, Komarolu Taluka, Prakasam district of Andhra Pradesh state having a geographical latitude 15° 12' 48.9" N and longitude 78° 58' 19.5" E.

v. **Land requirement:** The total land required for the construction of various components and related works for Rajupalem PSP is estimated to be around 334.80 ha, out of which 261.50 ha is non-forest land and 73.30 ha is forest land.

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

(Source: Census 2011; Mission Antyodaya 2020)

vii. **Water requirement:** Rajupalem Pumped Storage Project will require 15.40 MCM for one time filling and thereafter ~ 3.0 MCM per year will be required. Water will be pumped from existing left bank canal of Sri Pothuluri Veera Brahmendra Swamy (SPVB) reservoir, which is one of the major components of Telugu Ganga Project (TGP). The intake location for drawl of water (existing canal head regulator at Ch. 44.3KM or from Porumamilla Tank) will be finalized as per recommendations of Water Resources Department.

viii. **Project Cost:** The estimated project cost is Rs 3798 crore. Total capital cost earmarked towards environmental pollution control measures will be worked out during EIA study as well as the Recurring cost (operation and maintenance).

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

x. **Environmental Sensitive area:** Nagarjunasagar Srisailam Tiger Reserve (Core Zone) is about

21.0 km from project area. All the components of the project are outside the ESZ boundary. ESZ boundary is notified vide notification S.O.4373(E) dated 18th October 2021; therefore, Wildlife clearance is not applicable.

xi. Alternative Studies: Twenty Four (24) potential reservoir sites have been identified within the study area. Various combinations of above reservoir sites have been studied to identify potential alternative layouts that could be considered for the project for further evaluation.

S. No.	Description / Parameter	Alt - 3	Alt - 10
1.	Upper Dam / Reservoir	R_1	R_17
a)	FRL	RL 820.00 m	RL 495.00 m
b)	Dam length	1750 m	1270 m
c)	Dam height	88 m	55 m
d)	Gross storage	6.00 Mm3	8.20 Mm3
2.	Lower Dam / Reservoir	R_18	R_22
a)	FRL	RL 455.00 m	RL 270.00 m
b)	Dam length	320 m	1585 m
c)	Dam height	57 m	14 m
d)	Gross storage	8.90 Mm3	6.70 Mm3
3.	Gross Head, H	365 m	225 m
4.	Plan length of WCS, L	1900 m	1040
5.	L / H Ratio	5.2	4.6
6.	Head ratio	1.30	1.25
7.	Installed capacity	850 MW	550 MW
8.	Geology	Good (Quartzite)	Fair (Quartzite & Shale)

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

Name of the Proposal	Rajupalem Pumped Storage Project
Location (Including coordinates)	Lower Reservoir : Latitude: 15°12' 48.9" N Longitude: 78° 58' 19.5" E Upper Reservoir : Latitude: 15° 12' 51.7" N Longitude: 78° 57' 28.2" E
Inter- state issue involved	No
Seismic zone	Zone-II
Category of the project	A
Provisions	
Capacity / Cultural command area (CCA)	800 MW
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	Nil
Powerhouse Installed Capacity	800 MW
Generation of Electricity Annually	2546 MU
No. of Units	4 nos. (4 x 200 MW)
Additional information (if any)	Nil
Cost of project	3798 Cr.
Total area of Project	334.8 ha
Height of Dam from River Bed (EL)	Lower Dam – 15.0 m Upper Dam –82.0 m
Length of Tunnel/Channel	2200 m (Total length)
Details of Submergence area	284.60 ha
Types of Waste and quantity of generation during construction/ Operation	Muck from excavation, solid waste from labour colony and construction waste
E-Flows for the Project	Not Applicable, as this is Closed Loop Pum ped Storage Project (PSP)

Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then a) E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Basin. b) If not the E-Flows maintain criteria for sustaining river ecosystem.	No
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	500

No. of proposed disposal area/ (type of land-Forest/Pvt. land)	20 ha (Non-Forest Land)
Muck Management Plan	Will be Provided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Will be Provided in EIA/EMP report

Private Land	261.50 ha
Government land	-
Forest Land	73.30 ha
Total Land	334.80 ha
Submergence area/Reservoir area	284.60 ha
Additional information (if any)	Nil

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate / letter/ Remarks**
Reserve Forest/Protected Forest Land	--	· Nagarjunasagar Srisailam Tiger Reserve (Core Zone) is about 21.0 km from project area. · All the components of the project are outside the ESZ boundary. ESZ boundary is notified vide notification S.O.4373(E) dated 18th October 2021; therefore, Wildlife clearance is not applicable.
National Park	--	
Wildlife Sanctuary	--	

Particulars	**Letter no. and date**
Certified EC compliance report (if applicable)	Not Applicable
Status of Stage- I FC	Yet to Apply

Additional detail (If any)	Nil
Is FRA (2006) done for FC-I	Yet to Apply

Particulars	**Details**
Details of consultant	M/s. R S Envirolink Technologies Pvt. Ltd. (RS ET) (*NABET* Accredited *Consultant Organizatio n*) Certificate No : NABET/EIA/25-28/RA0415 Validity : August 15, 2028 Contact Person : Mr. Ravinder Bhatia Name of Sector : River Valley and Hydroelectric Projects Category : A MoEF Schedule : I(C) Address : 403, Bestech Chambers, Block-B, S ushant Lok Phase I, Sector 43, Gurugram, Har yana - 122009 E-mail: ravi@rstechnologies.co.in Land Line : (0124) 4295383 Cellular : (+91) 9810136853
Project Benefits	Pumped storage hydropower is a modified us e of conventional hydropower technology to store and manage energy or electricity by mo ving water between an upper and lower reser voir. Currently, pumped storage round-trip or cycle energy efficiencies exceed 80%, compar ing favorably to other energy storage technol ogies and thermal technologies. This effectiv ely shifts, stores, and reuses energy generate d until there is corresponding demand for sys tem reserves and variable energy integration. This shifting can also occur to avoid transmis sion congestion periods, to help more efficie ntly manage transmission grid, and to avoid p otential interruptions to energy supply. This i s important because many of the renewable e nergy resources being developed (e.g., wind and solar) are generated at times of low dem and and off-peak energy demand periods are still being met with fossil fuel resources, ofte n at inefficient performance levels that increa se the release of greenhouse gas emissions. o Least expensive source of electricity, no t requiring fossil fuel for generation o An emission-free renewable source o Balancing grid for demand driven variati ons o Balancing generation driven variations

	o Voltage support and grid stability Apart from this, proposed PSP will also bene fit the local community by creating employm ent opportunities and will result in upliftment of livelihood and socio-economic conditions.
Status of other statutory clearances	Forest Clearance - Online application seeking forest diversion for around 73.30 Ha after re ceipt of ToR Approval. Alongside, other statu tory clearances (as applicable) from State as well as Central government will be obtained post completion of Detailed Project Report.
R&R details	Details shall be evaluated during EIA/EMP St udies
Additional detail (If any)	Nil

3.7.3. Deliberations by the committee in previous meetings

N/A

3.7.4. Deliberations by the EAC in current meetings

46.7.3 The EAC during deliberations noted the following:

· The Expert Appraisal Committee (EAC) deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA/EMP and Public hearing for Rajupalem Close loop Pumped Storage Project (800 MW) in an area of 334.8 Ha located at Village Musalreddipalle, Reddicherla, etc, Sub District Kalasapadu, Komarolu and Porumamilla, District Y.S.R. and Prakasam, Andhra Pradesh by M/s APGENCO NHPC Green Energy Limited.

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

· The EAC observed that the Rajupalem PSP is proposed to generate 800 MW comprises of Upper and Lower reservoir located away from riverine system and therefore it is treated as a close loop PSP. The water required for initial filling of reservoirs and recuperation of losses every year is estimated to be about 15.40 Mm^3 & 3.00 Mm^3 respectively and it is proposed to be drawn from the existing left bank canal of Sri Pothuluri Veera Brahmendra Swamy (SPVB) reservoir, which is one of the major components of Telugu Ganga Project (TGP) located in kalasapadu Taluka of YSR district of Andhra Pradesh. The intake location for drawl of water (existing canal head regulator at Ch. 44.3KM or from Porumamilla Tank) will be finalized as per recommendations of Water Resources Department.

· The EAC noted that the total land requirement for the Rajupalem PSP is estimated to be around 334.80 ha, out of which 261.50 ha is non-forest land and 73.30 ha is forest land. Diversion

of forest land for non-forest purpose will be involved for construction of project components. However, it was observed that the application for Stage-I Forest Clearance (FC) has not yet been submitted, which necessitates further action from the Project Proponent. The Nagarjunasagar Srisailam Tiger Reserve (Core Zone) is about 21.0 km from project area. All the components of the project are outside the ESZ boundary. ESZ boundary is notified vide notification S.O.4373(E) dated 18th October 2021.

· It has been observed that In-principle approval for implementation of project by M/s APGENCO NHPC Green Energy Limited has been allotted by the Government of Andhra Pradesh vide its letter dated 29.11.2024.

46.7.4 The EAC based on the information submitted and as presented during the meeting, recommended the proposal for grant of Specific ToR issued by the Ministry for close Loop Pumped Storage Projects vide OM dated 14.08.2023 for conducting EIA study for proposed construction of the project for Rajupalem Close loop Pumped Storage Project (800 MW) in an area of 334.8 Ha located at Village Musalreddipalle, Reddicherla, etc, Sub District Kalasapadu, Komarolu and Porumamilla, District Y.S.R. and Prakasam, Andhra Pradesh by M/s APGENCO NHPC Green Energy Limited, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:

3.7.5. Recommendation of EAC

Recommended

3.7.6. Details of Terms of Reference

3.7.6.1. Specific

Miscellaneous:	
1.	Both capital and recurring expenditure under EMP shall be submitted.
2.	Pre-DPR Chapters viz., Hydrology, Layout Map and Power Potential Studies duly appraised by CWC/CEA shall be submitted.
3.	The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples.
4.	Drone video of project site shall be recorded and to be submitted.
5.	Detailed plan to restore wider roads and convert them into narrow up to 10m after construction of the project.
6.	Specific Terms of Reference (ToRs) issued by the Ministry vide Office Memorandum No. F. No. IA3-22/33/2022-IA.III dated 14.08.2023 for Pumped storage projects shall be used for preparation of EIA/ EMP reports.
7.	As per Ministry's OM dated 1st August, 2013, PP shall submit application to obtain prior approval of Central Government under the Forest Conservation Act, 1980 for diversion of

	forest land required for such projects will be submitted as soon as the actual extent of forest land required for the project is known to the project proponent, and in any case, within 6 months of issuance of ToR. However, no proposal will be put up before EAC without submission of application for forest clearance, wherever applicable.
Disaster Management:	
1.	Impact of Project activities (specially blasting and drilling) on the aquatic and terrestrial ecosystem, within study area to be studied and be incorporated in EIA/EMP report.
2.	The muck dumping sites shall be located with a distance of 100 mts from HFL. The PP shall submit the detailed action plan for transportation of muck along with monitoring mechanism of movement of muck carrying trucks.
Muck Management:	
1.	Details of quantity of muck generation component wise, types of muck (Excavation in tunnels, pressure shaft and powerhouse etc.) and disposal site/ transportation to be provided.
2.	Details of muck management such as dumping sites and its locations, transportation plan along with monitoring mechanism for muck transportation, detailing the road map of project construction site/ indicating the distances from HFL, river, project construction site along with types of road etc.
3.	Safety measures for avoiding spill over muck into the riverbed/streams and its flow into the river during the high discharge/ flood or monsoon period. Prepare plan for stabilization of muck disposal sites using biological and engineering measures to ensure that muck does not roll down the slopes and shall be disposed safely and that it does not pollute the natural streams and water bodies in surrounding area.
4.	Restoration plan for construction area including dumping site of excavated materials by levelling, filling up of burrow pits, landscaping etc.
Socio-economic Study:	
1.	Declaration by the project proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with any State in the project.
2.	All the tasks including conducting public hearing shall be done as per the provisions of EIA Notification, 2006 and as amended from time to time. A comparative chart of issues raised by General Public during Public Hearing and commitments made by the Project Proponent will be prepared and submitted in the relevant chapter of EIA/EMP report.
3.	The EIA/EMP shall include a detailed socio-economic assessment of the tribal population in the project-affected area based on primary data and community consultations. A Tribal Development Plan, prepared in consultation with the District Administration and Tribal Welfare Department, shall be submitted along with the EIA report.
4.	PP shall submit the credible documents to show the status of land acquisition w.r.t project site from/through the concerned State Government as required under Ministry's OM dated 7th October, 2014 for the project land to be acquired.

5.	Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines. Private land (if any) shall be acquired as per provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. Budget earmarked for R&R, CSR shall not be included in the cost of EMP.
Environmental Management and Biodiversity Conservation:	
1.	A detailed action plan for large scale plantation of native species of plant sapling within 10 km radius of the project shall be prepared in consultation with State Forest Department. The monitoring mechanism to ensure the survival of saplings shall be finalized in consultation with ICFRE.
2.	The PP will submit 10 years water availability data certified by the CWC/State Water Resource Department for quantity of water that is received annually by the small stream on which lower reservoir is proposed to be constructed.
3.	Necessary interstate clearance/approval shall be obtained before submitting the application of Environmental Clearance.
4.	The PP will submit a detailed plan and monitoring mechanism for releasing the self - catchment water of small stream draining in to river along with action plan for conservation and protection of other streams/rivulets draining in to upper and lower reservoirs.
5.	Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for 73.30 ha of forest land involved in the project shall be submitted within stipulated time.
6.	Muck disposal site and other components such as Township, site office, Stacking area and batching plant shall be located outside the forest area.
7.	Certificate and certified map from Chief Wildlife Warden shall be submitted mentioning that project boundary is not falling in any Ecological Sensitive Area, Wildlife Sanctuary/Tiger/elephant corridor/Critically polluted area within 10 km of Project site.
8.	Transportation Plan for transporting construction materials shall be submitted. Separate chapter for risk assessment of such transportation through/within proposed the Wildlife Sanctuary shall be included in the EIA report.
9.	Environmental Cost Benefit Analysis shall be done in terms of loss of Forest ecosystem due to diversion of Forest land/loss of biodiversity, water availability, water uses for generation of hydro power and Ecological flows.
10.	The baseline data collection will cover the changes in biological and ecological profile of the region after monsoon with worst-case scenario study and critical mineral assessment.
11.	Calculation and values of GHGs (CO_2, CH_4 etc.) emissions during construction and during operation till the life of the project shall be estimated and submitted.
12.	The longitudinal connectivity/Free flowing sketch be provided in the EIA/EMP report.

13.	Quantitative values of Impact modelling of environmental parameters shall be submitted for during construction and operation. Also, mitigation measures shall be submitted in terms of construction and operation phase.
14.	Conducting site-specific ecological study emphasizing on riverine ecology viz. fishes diversity, fish migration, habitat and aquatic biota due to construction PSP. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.
15.	In case any other project is present on the river, Cumulative Impact of projects in the basin on carrying capacity and sustainability of Reservoir/ River /nala of catchment area due to tapping of water for filling reservoir shall be studied.
16.	Action plan for survival or diversion of the rivulets/stream, if any, leading to join river shall be submitted.
17.	Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Specific ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons.
18.	A study shall be carried out on impact of project activity on the aquatic and terrestrial ecosystem, within project area classifying the impact zones (highly impact/low impact zone) based on seasonal variations and covering the aspects related to impacts on aquatic ecosystem/ primary productivity due to quantity of water to be lifted for power generation and thermal stratification. Accordingly, Environment Management plan shall be prepared
19.	Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.
20.	Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Indian Council of Agriculture Research (ICAR) Institutes/ Expert Govt. institutions and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report.
21.	Details of mineral zone, if any, in the study area, certified by Geological Survey of India or any other concerned Government Organization shall be submitted. The project area should not come up on any critical mineral zone, the same shall to be verified by GSI/NMDC.
22.	Any archaeological sites in the vicinity of the project, if any, then it shall be certified by ASI.

3.7.6.2. Standard

1(c)	**River Valley/Irrigation projects**
Scope of EIA Study	
1.	The EIA Report should identify the relevant environmental concerns and focus on potential impacts that may change due to the construction of proposed project. Based on the baseline data collected for three (3) seasons (Pre-monsoon, Monsoon and Winter seasons), the status of the existing environment in the

	area and capacity to bear the impact on this should be analysed. Based on this analysis, the mitigation measures for minimizing the impact shall be suggested in the EIA/EMP study.
Details of the Project and Site	
1.	General introduction about the proposed project.
2.	Details of Project and site giving L-Sections of all U/S and D/S Projects with all relevant maps and figures. Connect such information as to establish the total length of interference of Natural River and the committed unrestricted release from the site of Dam/Barrage into the main river.
3.	A map of boundary of the project site giving details of protected areas in the vicinity of 25 km of project location.
4.	Location details on a map of the project area with contours indicating main project features. The project layout shall be superimposed on a contour map of ground elevation showing main project features (viz. location of dam, Head works, main canal, branch canals, quarrying etc.) shall be depicted in a scaled map.
5.	Layout details and map of the project along with contours with project components clearly marked with proper scale maps of at least 1:50,000 scale and printed at least on A3 scale for clarity.
6.	Existence of National Park, Sanctuary, Biosphere Reserve etc. in the study area, if any, should be detailed and presented on a map with distinct distances from the project components.
7.	Drainage pattern and map of the river catchment up to the proposed project site.
8.	Delineation of critically degraded areas in the directly draining catchment on the basis of Silt Yield Index as per the methodology of Soil and Land use Survey of India.
9.	Soil characteristics and map of the project area.
10.	Geological and Seismo-tectonic details and maps of the area surrounding the proposed project site showing location of dam site and canal sites.
11.	Remote Sensing studies, interpretation of satellite imagery, topographic sheets along with ground verification shall be used to develop the land use/land cover pattern of the study using overlaying mapping techniques viz. Geographic Information System (GIS), False Color Composite (FCC) generated from satellite data of project area.
12.	Land details including forests, private and other land.
13.	Demarcation of snow fed and rain fed areas for a realistic estimate of the water availability.
14.	Different riverine habitats like rapids, pools, side pools and variations in the river substratum bedrocks, rocks, boulders, sand/silt or clay etc. need to be covered under the study
Description of Environment and Baseline Data	
1.	To know the present status of environment in the area, baseline data with respect to environmental components air, water, noise, soil, land and biology & biodiversity (flora & fauna), wildlife,

	socioeconomic status etc. should be collected within 10 km radius of the main components of the project/site i.e. dam site and power house site. The air quality and noise are to be monitored at such locations which are environmentally & ecologically more sensitive in the study area. The baseline studies should be collected for 1 season (Preferably Monsoon season). Flora-Fauna in the catchment and command area should be documented. The study area should comprise of the following:
2.	(i) Catchment area up to the dam/barrage site.
3.	(ii) Submergence Area.
4.	(iii) Project area or the direct impact area should comprise of area within 10 km radius of the main project components like dam, canals etc.
5.	(iv) Downstream upto 10 km from the tip of the reservoir.
Details of the Methology	
1.	The methodology followed for collection of base line data along with details of number of samples and their locations in the map should be included. Study area should be demarcated properly on the appropriate scale map. Sampling sites should be depicted on map for each parameter with proper legends. For Forest Classification, Champion and Seth (1968) methodology should be followed.
Methodology for Collection of Biodiversity Data	
1.	The number of sampling locations should be adequate to get a reasonable idea of the diversity and other attributes of flora and fauna. The guiding principles should be the size of the study area (larger area should have larger number of sampling locations) and inherent diversity at the location, as known from secondary sources (e.g. eastern Himalayan and low altitude sites should have a larger number of sampling locations owing to higher diversity).
2.	The entire area should be divided in grids of 5kmX5km preferably on a GIS domain. There after 25% of the grids should be randomly selected for sampling of which half should be in the directly affected area (grids including project components such as reservoir, dam, powerhouse, tunnel, canal etc.) and the remaining in the rest of the area (areas of influence in 10 km radius form project components). At such chosen location, the size and number of sampling units (e.g. quadrates in case of flora/transects in case of fauna) must be decided by species area curves and the details of the same (graphs and cumulative number of species in a tabulated form) should be provided in the EIA report. Some of the grids on the edges may not be completely overlapping with the study area boundaries. However, these should be counted and considered for selecting 25% of the grids. The number of grids to be surveyed may come out as a decimal number (i.e. it has an integral and a fractional part) which should be rounded to the next whole number.
3.	The conventional sampling is likely to miss the presence of rare, endangered and threatened (r.e.t.) species since they often occur in low densities and in case of faunal species are usually secretive in behaviour. Reaching the conclusion about the absence of such species in the study area based on such methodology is misleading. It is very important to document the status of such species owing to their high conservation value. Hence likely presence of such species should be ascertained from secondary sources by a proper literature survey for the said area including referring to field guides which are now available for many taxonomic groups in India. Even literature from studies/surveys in the larger landscapes which include the study area for the concerned project must be referred to, since most species from adjoining catchments is likely to be present in the catchments in question. In fact such literature form the entire state can be referred to. Once a listing of possible r.e.t. species form the said area is developed, species specific methodologies should be adopted to ascertain their presence in the study area which would be far more conclusive as compared to the conventional sampling. If the need be, modern methods like camera trapping can be resorted to, particularly for areas in the eastern

	Himalayas and for secretive/nocturnal species. A detailed listing of the literature referred to, for developing lists of r.e.t. species should be provided in the EIA reports.The conventional sampling is likely to miss the presence of rare, endangered and threatened (r.e.t.) species since they often occur in low densities and in case of faunal species are usually secretive in behaviour. Reaching the conclusion about the absence of such species in the study area based on such methodology is misleading. It is very important to document the status of such species owing to their high conservation value. Hence likely presence of such species should be ascertained from secondary sources by a proper literature survey for the said area including referring to field guides which are now available for many taxonomic groups in India. Even literature from studies/surveys in the larger landscapes which include the study area for the concerned project must be referred to, since most species from adjoining catchments is likely to be present in the catchments in question. In fact such literature form the entire state can be referred to. Once a listing of possible r.e.t. species form the said area is developed, species specific methodologies should be adopted to ascertain their presence in the study area which would be far more conclusive as compared to the conventional sampling. If the need be, modern methods like camera trapping can be resorted to, particularly for areas in the eastern Himalayas and for secretive/nocturnal species. A detailed listing of the literature referred to, for developing lists of r.e.t. species should be provided in the EIA reports.
4.	The R.E.T. species referred to in this point should include species listed in Schedule I and II of Wildlife (Protection) Act, 1972 and those listed in the red data books (BSI, ZSI and IUCN).
Components of the EIA Study: Various aspects to be studied and provided in the EIA/EMP report are as f ollows:	
1.	null
2.	null
3.	Physical geography, Topography, Regional Geological aspects and structure of the Catchment.
4.	Tectonics, seismicity and history of past earthquakes in the area. A site specific study of the earthquake parameters will be done. The results of the site specific earthquake design shall be sent for approval of the NCSDP (National Committee of Seismic Design Parameters, Central water Commission, New Delhi for large dams.
5.	Landslide zone or area prone to landslide existing in the study area should be examined.
6.	Presence of important economic mineral deposit, if any.
7.	Justification for location & execution of the project in relation to structural components (dam /barrage height).
8.	Impact of project on geological environment.
9.	null
10.	Meteorology (viz. Temperature, Relative humidity, wind speed/direction etc.) to be collected from nearest IMD station.
11.	Ambient Air Quality with parameters viz. Suspended Particulate Matter (SPM), Respirable Suspended Particulate Matter (RSPM) i.e. suspended particulate materials < 10 microns, Sulphur dioxide (SO2) and Oxides of Nitrogen (NOX) in the study area at 5-6 Locations.
1	Existing Noise Levels and traffic density in the study area at 5-6 Locations.

2.	
13.	null
14.	Soil classification, physical parameters (viz., texture, Porosity, Bulk Density and water holding capacity) and chemical parameters (viz. pH, electrical conductivity, magnesium, calcium, total alkalinity, chlorides, sodium, potassium, organic carbon, available potassium, available phosphorus, SAR, nitrogen and salinity, etc.) at @ one sample/ha of command area.
15.	null
16.	(i) Generation of thematic maps viz, slope map, drainage map, soil map, land use and land cover map, etc. Based on these, thematic maps, an erosion intensity map should be prepared.
17.	null
18.	History of the ground water table fluctuation in the study area.
19.	Water quality for both surface water and ground water for (i) Physical parameters (pH, temperature, electrical conductivity, TSS); (ii) Chemical parameters (Alkalinity, Hardness, BOD, COD, NO2, PO4, Cl, SO4, Na, K, Ca, Mg, Silica, Oil & Grease, phenolic compounds, residual sodium carbonate); (iii) Bacteriological parameter (MPN, Total coliform) and (iv) Heavy Metals (Pb, As, Hg, Cd, Cr-6, total Cr, Cu, Zn, Fe) (6 locations).
20.	Delineation of sub and micro-watersheds, their locations and extent based on the All India Soil and Land Use Survey of India (AISLUS), Department of Agriculture, Government of India. Erosion levels in each micro-watershed and prioritization of micro-watershed through silt yield index (SYI) method of AISLUS
21.	Hydro-Meteorology of the project viz. precipitation (snowfall, rainfall), temperature, relative humidity, etc. Hydro-meteorological studies in the catchment area should be established along-with real time telemetry and data acquisition system for inflows monitoring.
22.	Run off, discharge, water availability for the project, sedimentation rate, etc.
23.	Basin characteristics
24.	Catastrophic events like cloud bursts and flash floods, if any, should be documented.
25.	For estimation of Sedimentation Rate, direct sampling of river flow is to be done during the EIA study. The study should be conducted for minimum one year. Actual silt flow rate to be expressed in ha-m km2 year-1.
26.	Set up a G&D monitoring station and a few rain gauge stations in the catchment area for collecting data during the investigation.
27.	Flow series, 10 daily with 90%, 75% and 50% dependable years discharges.

28.	Information on the 10-daily flow basis for the 90 per cent dependable year the flow intercepted at the dam, the flow diverted to the power house and the spill comprising the environmental flow and additional flow towards downstream of the dam for the project may be given.
29.	The minimum environmental flow shall be 20% of the flow of four consecutive lean months of 90% dependable year, 30% of the average monsoon flow. The flow for remaining months shall be in between 20-30%, depending on the site specific requirements. A site specific study shall be carried out by an expert organization.
30.	Sedimentation data available with CWC may be used to find out the loss in storage over the years.
31.	Hydrological studies/data as approved by CWC shall be utilized in the preparation of EIA/EMP report. Actual hydrological annual yield may also be given in the report. Sedimentation data available with CWC may be used to find out the loss in storage over the years.
32.	A minimum of 1 km distance from the tip of the reservoir to the tail race tunnel should be maintained between upstream and downstream projects.
33.	Besides primary studies, review of secondary data/literature published for project area on flora & fauna including RET species shall be reported in EIA/EMP report.
34.	null
35.	Characterization of forest types (as per Champion and Seth method) in the study area and extent of each forest type as per the Forest Working Plan.
36.	Documentation of all plant species i.e. Angiosperm, Gymnosperm, Pteriodophytes, Bryophytes (all groups).
37.	General vegetation profile and floral diversity covering all groups of flora including lichens and orchids. A species wise list may be provided.
38.	Assessment of plant species with respect to dominance, density, frequency, abundance, diversity index, similarity index, importance value index (IVI) , Shannon Weiner index etc. of the species to be provided. Methodology used for calculating various diversity indices along with details of locations of quadrates, size of quadrates etc. to be reported within the study area in different ecosystems.
39.	Existence of National park, Sanctuary, Biosphere Reserve etc in the study area, if any, should be detailed.
40.	Economically important species like medicinal plants, timber, fuel wood etc.
41.	Details of endemic species found in the project area.
42.	Flora under RET categories should be documented using International Union for the Conservation of Nature and Natural Resources (IUCN) criteria and Botanical Survey of India's Red Data list along-with economic significance. Species diversity curve for RET species should be given.
43.	Cropping pattern and Horticultural Practices in the study area.

44.	null
45.	Fauna study and inventorisation should be carried out for all groups of animals in the study area. Their present status alongwith Schedule of the species.
46.	Documentation of fauna plankton (phyto and zooplankton), periphyton, benthos and fish should be done and analysed.
47.	Information (authenticated) on Avi-fauna and wildlife in the study area.
48.	Status of avifauna their resident/ migratory/ passage migrants etc.
49.	Documentation of butterflies, if any, found in the area.
50.	Details of endemic species found in the project area.
51.	RET species-voucher specimens should be collected along-with GPS readings to facilitate rehabilitation. RET faunal species to be classified as per IUCN Red Data list and as per different schedule of Indian Wildlife (Protection) Act, 1972.
52.	Existence of barriers and corridors, if any, for wild animals.
53.	Compensatory afforestation to compensate the green belt area that will be removed, if any, as part of the proposed project development and loss of biodiversity.
54.	Collection of primary data on agricultural activity, crop and their productivity and irrigation facilities components.
55.	For categorization of sub-catchment into various erosion classes and for the consequent CAT plan, the entire catchment (Indian Portion) is to be considered and not only the directly the draining catchment.
56.	Documentation of aquatic fauna like macro-invertebrates, zooplankton, phytoplantktons, benthos etc.
57.	Fish and fisheries, their migration and breeding grounds.
58.	Fish diversity composition and maximum length & weight of the measured populations to be studies for estimation of environmental flow.
59.	Conservation status of aquatic fauna.
60.	Sampling for aquatic ecology and fisheries and fisheries must be conducted during three seasons Pre-monsoon (summer), monsoon and winter. Sizes (length & weight) of important fish species need to be collected and breeding and feeding grounds should also be identified along the project site or in vicinity.

6 1.	Collection of baseline data on human settlements, health status of the community and existing infrastructure facilities for social welfare including sources of livelihood, job opportunities and safety and security of workers and surroundings population.
6 2.	Collection of information with respect to social awareness about the developmental activity in the area and social welfare measures existing and proposed by project proponent.
6 3.	Collection of information on sensitive habitat of historical, cultural and religious and ecological importance.
6 4.	The socio-economic survey/ profile within 10 km of the study area for demographic profile; Economic Structure; Developmental Profile; Agricultural Practices; Infrastructure, education facilities; health and sanitation facilities; available communication network etc.
6 5.	Documentation of demographic, Ethnographic, Economic Structure and development profile of the area.
6 6.	Information on Agricultural Practices, Cultural and aesthetic sites, Infrastructure facilities etc.
6 7.	Information on the dependence of the local people on minor forest produce and their cattle grazing rights in the forest land.
6 8.	List of all the Project Affected Families with their name, age, educational qualification, family size, sex, religion, caste, sources of income, land & house holdings, other properties, occupation, source of income, house/land to be acquired for the project and house/land left with the family, any other property, possession of cattle, type of house etc.
6 9.	Special attention has to be given to vulnerable groups like women, aged persons etc. and to any ethnic/indigenous groups that are getting affected by the project.
Impact Prediction and Mitigation Measures	
1.	The adverse impact due to the proposed project should be assessed and effective mitigation steps to abate these impacts should be described.
2.	Changes in ambient and ground level concentrations due to total emissions from point, line and area sources.
3.	Effect on soil, material, vegetation and human health.
4.	Impact of emissions from DG set used for power during the construction, if any, on air environment.
5.	Pollution due to fuel combustion in equipments and vehicles
6.	Fugitive emissions from various sources
7.	Changes in surface and ground water quality
8.	Steps to develop pisci-culture and recreational facilities
9.	Changes in hydraulic regime and downstream flow.

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

7.	
28.	Impact on human health due to water / vector borne disease
29.	Impact on increase traffic
30.	Impact on Holy Places and Tourism
31.	Impacts of blasting activity during project construction which generally destabilize the land mass and leads to landslides, damage to properties and drying up of natural springs and cause noise population will be studies. Proper record shall be maintained of the baseline information in the post project period.
32.	Positive and negative impacts likely to be accrued due to the project are listed.
Environmental Management Plan	
1.	null
2.	Biodiversity and Wildlife Conservation and Management Plan for the conservation and preservation of rare, endangered or endemic floral/faunal species or some National Park/Sanctuary/ Biosphere Reserve or other protected area is going to get affected directly or indirectly by construction of the project, then suitable conservation measures should be prepared in consultation with the State Forest Department and with the physical and financial details. Suitable conservation techniques (in-situ/ ex-situ) will be proposed under the plan and the areas where such conservation is proposed will be marked on a project layout map.
3.	Compensatory Afforestation shall be prepared by the State Forest Department in lieu of the forest land proposed to be diverted for construction of the project as per the Forest (Conservation) Act, 1980. Choice of plants for afforestation should include native and RET species, if any. This will be a part of the forest clearance proposal.
4.	Fisheries Conservation and Management Plan - a specific fisheries management measures should be prepared for river and reservoir. If the construction of fish ladder/ fish-way etc. is not feasible then measures for reservoir fisheries will be proposed. The plan will detail out the number of hatcheries, nurseries, rearing ponds etc. proposed under the plan with proper drawings. If any migratory fish species is getting affected then the migratory routes, time/season of upstream and downstream migration, spawning grounds etc will be discussed in details.
5.	Green Belt Development Plan along the periphery of the reservoir, approach roads around the colonies and other project components, local plant species must be suggested with physical and financial details. A layout map showing the proposed sites for developing the green belt should be prepared.
6.	Environmental Monitoring Programme to monitor the mitigatory measures implemented at the project site is required will be prepared. Provision for Environment Management Cell should be made. The plan will spell out the aspects required to be monitored, monitoring indicators/parameters with respect to each aspect and the agency responsible for the monitoring of that particular aspect throughout the project implementation.
7.	Catchment Area Treatment (CAT) Plan should be prepared micro-watershed wise. Identification of free draining/ directly draining catchment based upon Remote Sensing and Geographical Information System

	(GIS) methodology and Sediment Yield Index (SYI) method of AISLUS, Deptt. of Agriculture, Govt. of India coupled with ground survey. Areas or watersheds falling under 'very severe' and 'severe' erosion categories should be provided and required to be treated. Both biological as well as engineering measures should be proposed in consultation with State Forest Department for areas requiring treatment. Year-wise schedule of work and monetary allocation should be provided. Mitigation measures to check shifting cultivation in the catchment area with provision for alternative and better agricultural practices should be included.
8.	Study of Design Earthquake Parameters: A site specific study of earthquake parameters should be done. Results of the site specific earthquake design parameters should be approved by National Committee of Seismic Design Parameters, Central Water Commission (NCSDP), New Delhi.
9.	Dam Break Analysis and Disaster Management Plan The outputs of dam break model should be illustrated with appropriate graphs and maps clearly bringing out the impact of Dam Break scenario. To identify inundation areas, population and structures likely to be affected due to catastrophic floods in the event of dam failure. DMP will be prepared with the help of Dam Break Analysis. Maximum water level that would be attained at various points on the downstream in case of dam break will be marked on a detailed contour map of the downstream area, to show the extent of inundation. The action plan will include Emergency Action and Management plan including measures like preventive action notification, warning procedure and action plan for co-ordination with various authorities.
10.	Reservoir Rim Treatment Plan for stabilization of land slide / land slip zones, if any, around the reservoir periphery is to be prepared based on detailed survey of geology of the reservoir rim area. Suitable engineering and biological measures for treatment of identified slip zones to be suggested with physical and financial schedule. Layout map showing the landslide/landslip zones shall be prepared and appended in the chapter.
11.	Muck Disposal Plan- suitable sites for dumping of excavated material should be identified in consultation with the State Pollution Control Board and Forest Department. All Muck disposal sites should be minimum 30 m away from the HFL of river. Plan for rehabilitation of muck disposal sites should also be given. The L- section/ cross section of muck disposal sites and approach roads to be given. Financial out lay for this may be given separately. Deatailed muck transportation plan delinating the path ways, number of trucks, quantity of muck to be transportated along with monitoring mechanism using latest technology, shall be prepared.
12.	Restoration Plan for Quarry Sites and landscaping of colony areas, working areas, roads etc. Details of the coarse/fine aggregate/clay etc. required for construction of the project and the rock/clay quarries/river shoal sites identified for the project should be discussed along-with the Engineering and Biological measures proposed for their restoration with physical and financial details. Layout map showing quarry sites vis-à-vis other project components, should be prepared.
13.	Resettlement and Rehabilitation Plan needed to be prepared on the basis of findings of the socio-economic survey coupled with the outcome of public consultation held. The R&R package shall be prepared after consultation with the representatives of the project affected families and the State Government. Detailed budgetary estimates are to be provided. Resettlements site should be identified. The plan will also incorporate community development strategies.
14.	Public Health Delivery Plan including the provisions of drinking water supply for local population shall be in the EIA/EMP Report. Status of the existing medical facilities in the project area shall be discussed. Possibilities of strengthening of existing medical facilities, construction of new medical infrastructure etc. will be explored after assessing the need of the labour force and local populace.
15.	Local Area Development Plan to be formulated in consultation with the Revenue Officials and Village Pancahayats. Appropriate schemes shall be prepared under EMP for the Local Area Development Plan with sufficient financial provisions.

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

3.8. Agenda Item No 8:

3.8.1. Details of the proposal

Demwe Lower Hydroelectric Project by **GREENKO DEMWE POWER LIMITED** located at **LOHIT,ARUNACHAL PRADESH**			
Proposal For		Application for Validity Extension of EC- Form-6	
Proposal No	**File No**	**Submission Date**	**Activity Sub-Activity (Schedule Item)**
IA/AR/RIV/562775/2025	J-12011/4/2008-IA.I	24/12/2025	River Valley/Irrigation projects RVHEPs without Pump Storage Projects (1(c))

3.8.2. Project Salient Features

Demwe Lower Hydroelectric Project (1750 MW) in an area of 1589.97 Ha located at Sub District Tezu HQ, Hayuliang ADC and Wakro Circle, District Anjaw and Lohit, Arunachal Pradesh by M/s Greenko Demwe Power Limited- Validity Extension of EC – reg.
[Proposal No. IA/AR/RIV/562775/2025; F. No. J-12011/4/2008-IA.I]
46.8.1 The proposal is for grant of validity extension of environmental clearance (EC) of Demwe Lower Hydroelectric Project (1750 MW) in an area of 1589.97 Ha located at Sub District Tezu HQ, Hayuliang ADC and Wakro Circle, District Anjaw and Lohit, Arunachal Pradesh by M/s Greenko Demwe Power Limited.
46.4.2 The details of the project submitted by project proponent and ascertained from the document submitted are mentioned below:
i. The proposed Demwe Lower Hydroelectric Project falls in the foothills of Lohit basin and is proposed on the river Lohit, a tributary of mighty Brahmaputra in Lohit District of Arunachal Pradesh.

ii. The project envisages construction of a 474.35 m Concrete Gravity Dam from the riverbed level across river Lohit to generate 1750 MW of hydropower. The total land requirements for the various activities have been estimated as 1589.97 ha. In which Non Forest Land 174.05 ha and Forest land 1415.92 ha. A total 204 families will be affected due to this project out of which 240 families will be displaced.

iv. The total estimated cost of the project is about Rs. Rs. 8347.89 Crores and likely to be completed in 60 months.

v. The Environmental Clearance was accorded by MoEF&CC on 12th Feb, 2010 with validity till Feb 2020 subject to various conditions. Subsequently, extension of EC Validity has been granted to 1750 MW Demwe Lower HEP vide letter J-12011/04/2018-IA-I (Pt.1) dated 22nd July, 2020 for 3 years. Further, the MoEF&CC on 19.11.2025 transferred the EC from Athena Demwe Power Ltd (ADPL) to Greenko Demwe Power Ltd.

vi. The final forest clearance was issued by Government of Arunachal Pradesh on 26th July, 2013. On 4th April, 2014, in the appeal filed against the Forest Clearance by an Assam based NGO – North East Affected Area Development Society, Hon'ble NGT directed status quo on tree felling due to which construction of the Project could not be commenced. Hon'ble NGT vide its final Order dated 24th October, 2017, i.e. after more than 42 months, dismissed the appeal and directed the Standing Committee of NBWL to reconsider the issue relating to the Demwe Lower HEP and pass appropriate orders. NGT directed that till such orders are passed by NBWL, the forest clearance shall stand suspended.

vii. Pursuant to directions of Hon'ble NGT, the Standing Committee of NBWL considered the Project in its meeting held on 7th September, 2018 and recommended the Proposal for commencement of construction of the Dam subject to the submission of certain undertakings by the Project Proponent and commissioning of a Study on 'Geospatial Analysis of Impacts of Lower Demwe Hydroelectric Project on the Riverine Ecosystems of Lohit Basin'. However, due to ongoing litigation before Hon'ble NCLT, the conditions stipulated by NBWL were not complied by the previous company i.e Athena Demwe Power Limited and as such the Forest Clearance remained under suspension. Thus, a period of around 3 years, 6 months, 22 days was lost due to the Stay Order issued by Hon'ble NGT on 4th April 2014 till disposal of case on 24th Oct, 2017.

viii. Further, one of the lenders i.e. Indian Bank, from whom a loan had been availed by Athena Demwe Power Ltd, declared the Company as NPA and filed a petition under Insolvency and Bankruptcy Code, 2016 (IBC) before Hon'ble National Company Law Tribunal (NCLT), New Delhi, for resolution of their dues. Vide NCLT Order dated 28th September 2017, Corporate Insolvency & Resolution Process (CIRP) under Insolvency and Bankruptcy Code, 2016 (IBC) commenced thereby further impacting progress of the Project.

ix. CIRP is a time bound process as per the IBC, 2016 and was expected to be completed within 270 days from submission of the Resolution Plan. The Resolution Plan was approved by the Committee of Creditors within the said timelines stipulated under the IBC and submitted to the NCLT for approval on 25th June, 2018. However, one of the unsuccessful bidders challenged its disqualification by Committee of Creditors and filed an application before Hon'ble NCLT. The said litigation was prolonged and eventually got concluded upon issue of final Order by NCLT on 18th March, 2025 approving the Resolution Plan submitted by Greenko Energies Pvt Ltd.

x. The EAC in its 43rd meeting held on 7th March, 2023, noted as below:

"……As per the Notification S.O. 1807(E) dated 12.04.2022, the environmental clearance granted to River valley projects shall be valid for a period of thirteen years. Also, the Ministry vide OM no. IA3-22/10/2022-IA.III [E 177258] dated 11.04.2022 has clarified that the validity

period of the prior EC granted (after Stage-I FC), shall be reckoned from the date of grant of Stage-II FC, or a maximum period of two years, whichever is less.

The EAC observed that in view of OM dated 11.04.2022, the validity of existing EC will start from 12.02.2012 (after maximum period of two year) and as per the Notification dated 12.04.2022, the validity of this project will be till 12.02.2025.

However, as per MoEF&CC notification S.O. 221(E) dated 18.01.2021 the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19).

The EAC after detailed deliberations found that as per the extent rules and guidelines the validity of this project is valid till 11.02.2026. Accordingly, the EAC suggested the project proponent to submit proposal before expiring of existing EC……."

All Statutory clearances are being revalidated in favour of GDPL. Brief status is as below:-

- **CEA Concurrence:** On 19.06.2025, letter submitted to CEA for revalidating / reinstating the concurrence dated 20.11.2009 accorded by CEA. GOAP vide letter dated 10.07.2025 has also recommended to CEA for the same. There is no change in project layout and design floods, only Hydrology and Power potential are under validation as up to date data has now been incorporated.

- **SPV Name Change:** With effect from 12.08.2025, the name of the SPV has been changed from 'Athena Demwe Power Ltd' to 'Greenko Demwe Power Ltd' (GDPL). GOAP vide letter dated 10.11.2025 has conveyed no objection for the name change for the purpose of facilitating revalidation / reinstatement of clearances granted to the Project by other Authorities.

Transfer of Environmental Clearance: MOEF vide letter dated 19.11.2025 has approved for transfer of EC in the name of GDPL.

- **Forest Clearance:** Forest Clearance was under abeyance by Order of NGT pending re-visit by the Standing Committee of National Board of Wild Life (SC-NBWL) of the approval granted by it. The SC-NBWL reviewed the matter in 2018 and recommended the proposal for construction of the Project subject award of a study on Geospatial Analysis of Impacts of Lower Demwe Hydroelectric Project on the Riverine Ecosystems of Lohit Basin to be carried out in parallel to the project construction.

  GDPL has awarded the said Study to Wildlife Institute of India, Dehradun and with this, the Stay on Forest Clearance is liable to be revoked. GDPL has apprised the same to the State Forest Department vide letter dated 28.11.2025.

  GDPL has also issued a separate letter dated 28.11.2025 to State Forest Dept requesting for allowing payment of CAT Plan payment in 3 instalments and also for taking up with MoEF&CC for allowing commencement of project construction pending release of CAT Plan payments as per the approved instalments. This is under consideration of the State Forest Department.

- **SPV name change in Wildlife Clearance:** On 08.12.2025, GDPL has written to MoEF&CC requesting transfer of Wildlife clearance in the name of GDPL. This is likely to come up in the next meeting of NBWL in January 2026.

- **Consent to Establish:** APSPCB vide letter dated 19.12.2025 has granted Fresh CTE with a validity of 2 years.

3.8.3. Deliberations by the committee in previous meetings

N/A

3.8.4. Deliberations by the EAC in current meetings

46.8.3 The EAC during deliberations noted the following:

· The project is listed at S.N.1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

· The EAC observed that Environmental Clearance was accorded by MoEF&CC on 12th Feb, 2010 with validity till Feb 2020 subject to various conditions. Subsequently, extension of EC Validity granted by MoEF&CC to 1750 MW Demwe Lower HEP vide letter J-12011/04/2018-IA-I (Pt.1) dated 22nd July, 2020 for 3 years. The EAC considered the proposal for validity extension of EC in its 43rd meeting held on 7th March, 2023 wherein it was observed that as per the extent rules and guidelines the validity of this project is valid till 11.02.2026. Further, the MoEF&CC on 19.11.2025 transferred the EC from Athena Demwe Power Ltd (ADPL) to Greenko Demwe Power Ltd.

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

· Additionally, as per MoEF&CC OM no. IA3-22/22/2025-IA.III dated 30.10.2025 the Ministry has clarified that the following time period during which the project proponent was unable to implement the EC granted for the related Project/Activities shall be treated as a zero period for calculating the validity of the EC:

(a) Duration of stay orders of the competent Courts leading to non- implementation of the Projects/Activities for which EC had been duly granted and in respect of which the Project Proponent/Applicant shall provide necessary documentary evidence;

(b) Duration of pendency before NCLT till the Resolution Plan is approved by NCLT and Project/Activity is handed over to the successful Resolution Applicant (New Management/Bidder) and in respect of which the Project Proponent /Applicant shall provide necessary documentary evidence;

or

(c) Duration of pendency before NCLT till the Liquidator selects the new bidder following due process as part of the liquidation proceedings and NCLT approves the concerned sale or scheme and confirms the transaction of payment and in respect of which the Project Proponent /Applicant shall provide necessary documentary evidence.

The aforesaid O.M. also clarifies that in the event that the period lost in litigation or in NCLT proceedings, as mentioned above, is more than three years, the concerned State Pollution Control Board or Pollution Control Committee shall add appropriate environmental safeguards, as deemed appropriate, in the Consent to Operate (CTO) conditions based on the changes in the site conditions that may have taken place during this period and taking into account the need for installation of appropriate pollution control, prevention and abatement measures that may be necessitated.

· The committee noted that due to stay on tree felling as directed by Hon'ble NGT on 04.04.2014 till disposal of case in 24.10.2017 and insolvency proceedings before Hon'ble NCLT from 28.09.2017 to 18.03.2025, almost 10 years, 11 months, 14 days (after adjusting overlapping period of around 25 days between disposal of case by NGT in Oct, 2017 and commencement of NCLT proceedings in Sept 2017) has been lost due to which implementation of project activities could not be started.

· The EAC observed that all the relevant documents including Hon'ble NGT orders and Hon'ble NCLT order dated 18.03.2025 has been dully submitted by the project proponent along with proposal on Parivesh, therefore the EAC opined that 10 years, 11 months, 14 days years shall be considered as zero period in calculation of validity of EC.

· The EAC after detailed deliberations found that as per the extent rules and guidelines the

validity of this project is valid till 25.01.2037. Accordingly, the EAC suggested the project proponent to take further necessary action as per MoEF&CC OM no. IA3-22/22/2025-IA.III dated 30.10.2025 and submit the proposal for EC validity extension before expiry of existing EC.

The EAC, therefore ***returned*** the proposal in present form.

3.8.5. Recommendation of EAC

Returned in present form

4. Any Other Item(s)

N/A

5. List of Attendees

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

MINUTES OF THE 46TH MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 09TH JANUARY, 2026 THROUGH VIDEO CONFERENCE

The 46th meeting of the EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on through virtual mode, under the Chairmanship of Prof. G. J. Chakrapani. The list of Members present in the meeting is at **Annexure**.

Confirmation of the Minutes of the 45th EAC meeting:

The Minutes of the 45th EAC meeting held on 19th December, 2025 were confirmed.

Agenda Item No. 45.1

Veeraballi Closed Loop Pumped Storage Project (1800 MW) in an area of 489.91 ha at Village Vangimalla, Sub-District Veeraballe, District Annamayya, Andhra Pradesh from M/s Annamayya Pumped Storage Project Private Limited- Environmental Clearance (EC) – reg.

[Proposal No. IA/AP/RIV/563180/2025; F. No. J-12011/07/2020-IA-I]

46.1.1: The Member Secretary informed that, the representative of the PP vide email/letter dated 08.01.2026 expressed its inability to attend the EAC meeting due to unavoidable circumstances, and requested for deferment. Accordingly, the EAC agreed to consider the proposal in a later meeting.

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

Agenda Item No. 46.2

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

[Proposal No. IA/AS/RIV/558604/2025; F. No. J-12011/44/2025-IA.I (R)]

46.2.1 The proposal is for grant of Terms of Reference (ToR) to the project Assam/PSP-02 Closed-Loop Pumped Storage Project (1000 MW) in an area of 259.6 Ha located at Village Baithalangso and Sardangang, Sub District Donka, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited.

46.2.2 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. Assam/PSP-02 Project is 'Off-stream closed loop' pumped storage scheme with an installed capacity of 1000 MW. The scheme of operation considered for the project is daily regulation to meet the demand of about 6 hours of peak power daily. Off-peak pumping hours are considered as 6.94 hours daily.

ii. The proposed Assam/PSP-02 is located in West Karbi Anglong District of Assam State. The project with 1000 MW of Pumped Storage capacity is proposed for the development near Ouguri village. This PSP will comprise of two reservoirs upper reservoir and lower reservoir (both are to be constructed newly. The upper reservoir of the proposed Assam-02 Pumped Storage Project (PSP) will be created by constructing a dam across a natural depression in the undulating landform, which features a gentle gradient, and the proposed lower reservoir will be formed by constructing a dam across a natural depression in the undulating landform which is located across a small nallah which joins the Umiam river. Both upper and lower dams are located across non-perennial nallahs.

iii. Assam-02 project is a pumped storage project and hence no consumptive use of water has been envisaged for power generation. The reservoirs will be filled only once in its lifetime and the same water will be recycled daily between upper and lower reservoirs. The water required for the initial filling and water lost due to evaporation will be replenished from the Umiam River by a pipeline arrangement of 0.6 m diameter and 600 m length from the lower reservoir.

iv. The geographical co-ordinate of the project are Lower Reservoir: 92.271717° E; 26.032182° N and Upper Reservoir : 92.305884° E; 26.006095° N.

v. **Land requirement:** The total land required for the construction of various components and related works for Assam-02 PSP is estimated to be around 259.60 ha, out of which 115.40 ha is non-forest land and 144.20 ha is forest land.

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

- Villages within the study area are small, scattered, and primarily agrarian. Population density is low compared to state averages.
- Habitation in the area is mainly comprised of Schedule Tribe population represented by **Karbi** and **Tiwa**. Local communities follow traditional customs and festivals, with strong dependency on natural resources.
- The village has a close-knit social life, including the extended family, traditional festivals such as Rongkar and Chomkan, folk dances, music and oral stories. Village councils and elders guide local governance.
- Subsistence farming, horticulture, livestock rearing, and wage labour constitute the primary sources of income for the villagers.
- In addition to paddy & maize cultivation, cash crops such as Areca Nut (Supari),

Betel Leaf (Paan) and Broom Grass (Jhaadu) are also grown extensively by the local communities.

Parameters	Ouguri	Tharakunchi	Silangkunchi	Hadau	Tharve Langso
Households	30	81	66	52	12
Total Population	133	462	438	311	76
Male Population	68	227	209	151	37
Female Population	65	235	229	160	39
Scheduled Caste (SC) Pop.	0	0	0	0	0
Scheduled Tribe (ST) Pop.	40	445	438	310	67

(Source: Census 2011; Mission Antyodaya 2020)

- The demographic profile of the villages surrounding the project area indicates that Tharakunchi has the highest total population (462) with 81 households.
- Tharve Langso is the smallest settlement with a population of 76 and 12 households.
- All villages show a near-even split between male and female populations, with most locations having a slightly higher number of females compared to males.
- Scheduled Tribe (ST) populations form the overwhelming majority in all the villages, represented by Karbis and Tiwas.
- In contrast, no Scheduled Caste (SC) population is reported in the area.

vii. **Water requirement**: Assam-02 (1000 MW) will require 8.20 MCM for initial reservoir filling and thereafter 0.43 MCM per year will be required on annual basis from Umiam river for restoring the storage capacity lost due to evaporation.

viii. **Project Cost**: The estimated project cost is Rs. 5224.0 Crore including IDC. As a preliminary estimate, a construction period of 4 years (48 months) from the date of award of civil works package has been estimated for this project.

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

x. **Environmental Sensitive area:** Pobitora WLS is about 29.5 km from project area. River/ water body, Water will be pumped from Umiam River.

xi. The MOU has been signed between Government of Assam and M/s Assam Power Distribution Company Limited to build PSP on September 10, 2025.

xii. **Alternative Studies:**

The site selection process is based on following approaches:

- Utilization of available head at project site to the maximum extent feasible
- Development of economical and optimized layout
- Ease of construction
- Minimal area of land acquisition to accommodate various project components
- Avoid / minimize submergence of forest land
- Avoid interference with existing / allotted schemes
- Avoid location of project within Eco Sensitive Zones (ESZ) of existing Wildlife Sanctuaries

Several alternative sites for the pumped storage project were assessed area around the provide location, and two sites (Site 1 and Site 2) were shortlisted after site visit.

Parameters	**Units**	**Site 1**	**Site 2**
Upper Dam (Lat.,Long.)		26.004829°N	25.953129°N
		92.305613°E	92.272111°E
Lower Dam (Lat.,Long.)		26.026472°N	26.026472°N
		92.269677°E	92.269677°E
Installed Capacity	MW	1000	1000
Generation Hours	hr	6	6
Net storage Requirement	MCM	5.74	5.81
Gross Head (H)	m	439	440.7
Upper Dam/ Reservoir			
Dam length	m	578	315
Dam height (Approx)	m	51	27
Submergence area	sq km	0.56	0.84
Lower Dam/ Reservoir			
Dam length	m	492	492
Dam height (Approx)	m	39	39
Submergence area	sq km	0.48	0.48
Water Conductor System	km	3	9
L/H Ratio		7.94	20.42
Powerhouse type		Underground	Underground
Accessibility to Upper Dam/ Reservoir		Upper reservoir is accessible.	Upper reservoir is accessible.
Accessibility to Lower Dam/ Reservoir		Lower reservoir is accessible.	Lower reservoir is accessible.

Source of water		Umiam river, which is approx. 600 m away	Umiam river, which is approx. 600 m away
Land requirement (approx.)	Ha	Total Land = 259.60 Forest land = 144.20 Non forest land = 115.40	Total Land = 298 Forest land = 140 Non forest land = 158
Remarks	• Length of water conductor system at Site 2 is significantly greater than that of Site 1, resulting in a high L/H ratio, resulting in more underground work and muck generation. • Total land requirement of alternative 2 is also more as compared to site-1. • Due to this, Site-2 has been discarded.		

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

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

- **Project details:**

Name of the Proposal	Assam/PSP-02 Closed loop Pumped Storage Project (1000 MW)
Location (Including coordinates)	Lower Reservoir : Latitude: 26.032182° N Longitude: 92.271717° E Upper Reservoir : Latitude: 26.006095° N Longitude: 92.305884° E
Inter- state issue involved	No
Seismic zone	Zone-V

- **Category details:**

Category of the project	A
Provisions	
Capacity / Cultural command area (CCA)	1000 MW

Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	Nil

- **Electricity generation capacity:**

Powerhouse Installed Capacity	1000 MW
Generation of Electricity Annually	2081 MU
No. of Units	4 nos. (4 x 250 MW)
Additional information (if any)	Nil

- **ToR/EC Details:**

Cost of project	5224.0 Cr.
Total area of Project	259.6 ha
Height of Dam from River Bed (EL)	Lower Dam – 39.0 m Upper Dam –51.0m & 24.0 m
Length of Tunnel/Channel	3000 m
Details of Submergence area	106.0 ha
Types of Waste and quantity of generation during construction/ Operation	Muck from excavation, solid waste from labour colony and construction waste
E-Flows for the Project	Not Applicable, as this is Closed Loop Pumped Storage Project (PSP)
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then a) E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Basin. b) If not the E-Flows maintain criteria for sustaining river ecosystem.	No
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	500

- **Muck Management Details:**

No. of proposed disposal area/ (type of land-Forest/Pvt. land)	15 ha (Non-Forest Land)

Muck Management Plan	Will be Provided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Will be Provided in EIA/EMP report

- **Land Area Breakup:**

Private Land	115.4 ha
Government land	-
Forest Land	144.2 ha
Total Land	259.6 ha
Submergence area/Reservoir area	106.0 ha
Additional information (if any)	Nil

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

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate / letter/ Remarks**
Reserve Forest/Protected Forest Land	--	• Pobitora WLS is about 29.5 km from project area.
National Park	--	
Wildlife Sanctuary	--	

- **Court case details: NIL**

- **Miscellaneous**

Particulars	**Details**
Details of consultant	M/s. R S Envirolink Technologies Pvt. Ltd. (RSET) (NABET Accredited Consultant Organization) Certificate No : NABET/EIA/25-28/RA0415 Validity : August 15, 2028 Contact Person : Mr. Ravinder Bhatia

	Name of Sector : River Valley and Hydroelectric Projects Category : A MoEF Schedule : I(C) Address : 403, Bestech Chambers, Block-B, Sushant Lok Phase I, Sector 43, Gurugram, Haryana - 122009 E-mail : ravi@rstechnologies.co.in Land Line : (0124) 4295383 Cellular : (+91) 9810136853
Project Benefits	• Pumped storage hydropower is a modified use of conventional hydropower technology to store and manage energy or electricity by moving water between an upper and lower reservoir. Currently, pumped storage round-trip or cycle energy efficiencies exceed 80%, comparing favorably to other energy storage technologies and thermal technologies. This effectively shifts, stores, and reuses energy generated until there is corresponding demand for system reserves and variable energy integration. This shifting can also occur to avoid transmission congestion periods, to help more efficiently manage transmission grid, and to avoid potential interruptions to energy supply. This is important because many of the renewable energy resources being developed (e.g., wind and solar) are generated at times of low demand and off-peak energy demand periods are still being met with fossil fuel resources, often at inefficient performance levels that increase the release of greenhouse gas emissions. • Further, pumped storage projects are

	critical to the national economy and overall energy reliability because it's: o Least expensive source of electricity, not requiring fossil fuel for generation o An emission-free renewable source o Balancing grid for demand driven variations o Balancing generation driven variations o Voltage support and grid stability • Apart from this, proposed PSP will also benefit the local community by creating employment opportunities and will result in upliftment of livelihood and socio-economic conditions.
Status of other statutory clearances	Forest Clearance - Online application seeking forest diversion for around 144.2 Ha after receipt of ToR Approval. Alongside, other statutory clearances (as applicable) from State as well as Central government will be obtained post completion of Detailed Project Report.
R&R details	Details shall be evaluated during EIA/EMP Studies

46.2.3 The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA/EMP and Public hearing for Assam/PSP-02 Closed-Loop Pumped Storage Project (1000 MW) in an area of 259.6 Ha located at Village Baithalangso and Sardangang, Sub District Donka, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited.

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

- The EAC observed that the project was earlier considered by the EAC in its 44th meeting held on 10.12.2025 wherein PP vide email/letter dated 05.12.2025 expressed its inability

to attend the EAC meeting due to unavoidable circumstances and requested for defer the project. Accordingly, the EAC decided to defer the project on request of PP.

- The EAC noted that the total land requirement for the project is around 259.60 ha, out of which 115.40 ha is non-forest land and 144.20 ha is forest land. Diversion of forest land for non-forest purpose will be involved for construction of Project components. However, it was observed that the application for Stage-I Forest Clearance (FC) has been submitted vide proposal no. FP/AS/HYD/IRRIG/558058/2025 dated 13.11.2025.

- The committee noted that Assam-02 (1000 MW) will require 8.20 MCM for initial reservoir filling and thereafter 0.43 MCM per year will be required on annual basis from Umiam river for restoring the storage capacity lost due to evaporation.

- It has been observed that Memorandum of Understanding has been signed between Government of Assam and M/s Assam Power Distribution Company Limited to build PSP on September 10, 2025.

- There is no National Park, Wildlife Sanctuary, Biosphere Reserve, Tiger, Wildlife Corridor etc. within 10 km distance from the project site. Pobitora WLS is about 29.5 km from project area.

- The EAC further noted that another project i.e. Greenko Assam - 01 Closed Loop Pumped Storage Project (900 MW) in an area of 251.94 Ha in Village Amguri, Baithalangso, Kiling Bagicha, Nali Bagicha No. and Sardangang, Sub District Marigaon and Donka, District Morigaon and West Karbi Anglong, Assam by M/s Greenko Energies Private Limited of which developer has been changed to M/s Assam Power Distribution Company Limited has obtained Terms of reference for conduction EIA/EMP vide letter dated 02.06.2025. Also, it has been informed by the PP that there are several more project that has been proposed in the region.

- The Meghalaya State Boundary is 0.1 km away from the project boundary.

- The EAC noted that the forest area falling within and around the project site comprises a very dense canopy, indicating a mature and ecologically sensitive forest ecosystem. Such dense canopy cover suggests the presence of significant biodiversity, including large trees, undergrowth, and potential habitats for wildlife species. The Committee emphasised the need for detailed survey of the study area to collect appropriate data on wild flora and fauna so that impact prediction can be done accurately considering the aspects like fragmentation of habitat, and disruption of ecological functions etc. The EAC also noted that the proposed Project is located in an ecologically sensitive region falling within the transitional zone of the Indo-Burma Biodiversity Hotspot, which is globally recognized for its high levels of biological diversity and endemism. The Committee noted that the forested tracts in the

project area support species of conservation concern and function as important ecological corridors and breeding habitats for several endemic and migratory species. The landscape is characterized by semi-evergreen and moist deciduous forests, which are also traditionally utilized by local tribal communities for their livelihood and subsistence needs. In view of the above, the EAC emphasized that the project area entails significant ecological and socio-ecological sensitivities that warrant careful consideration during appraisal. During the deliberations, the EAC highlighted concerns w.r.t the proximity to notified forest areas and potential wildlife movement routes, underscoring the vulnerability of local ecosystems to habitat fragmentation, hydrological disruption, and loss of biodiversity. In light of these observations, the EAC recommended that a site visit be undertaken by a sub-group of the Committee to physically assess the ecological character of the area and verify forest dependencies before considering the proposal for grant of TOR.

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

Agenda Item No. 46.3

Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha located at Village Tharakhunji, Sub District Baithalangso, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited- Amendment in Terms of References (TOR) – reg.

[Proposal No. IA/AS/RIV/560544/2025; F. No. J-12011/21/2025-IA.I (R)]

46.3.1 The proposal is for grant of amendment in terms of references for Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha located at Village Tharakhunji, Sub District Baithalangso, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited.

46.3.2 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. Assam Power Distribution Company Limited proposes to develop Off-Stream Closed Loop Pumped Storage Project (PSP) near Tharakhunji (V), Donka subdivision of Karbi Anglong District in the state of Assam. The total capacity of proposed PSP is 900 MW (5679 MWH).

ii. The proposed project involves creation of upper reservoir (26° 0'7.72"N & 92°16'18.94"E) and lower reservoir (26°0'8.81"N & 92°15'1.23" E). The proposed scheme involves creation of new upper reservoir & lower reservoir. It is proposed to construct Roller Compacted Concrete (RCC) Main Dam-1 for the weighted average height of 41.01 m (with maximum height of 58 m) for the length of 362 m with gross

storage of 0.356 TMC capacity and Lower reservoir of Roller Compacted Concrete (RCC) Main Dam-2 for the weighted average height of 32.84 m (with maximum height of 68 m) for the length of 425 m with gross storage of 0.255 TMC capacity.

iii. The Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project, proposed at Tharakhunchi Village in Donka sub-division of West Karbi Anglong district, Assam, was initially accorded Terms of Reference (TOR) in the name of Greenko Energies Pvt. Ltd. (GEPL) on 02.06.2025 for an installed capacity of 900 MW (2 × 300 MW + 2 × 150 MW), with an estimated land requirement of 251.94 ha, including 134.24 ha of forest land and 117.70 ha of non-forest land. The TOR was Subsequently, transferred to Assam Power Distribution Company Limited (APDCL) on 06.11.2025.

iv. The project proponent has requested for amendment in the ToR with the details are as under:

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
1	Subject	Greenko Assam - 01 Closed Loop Pumped Storage Project (900 MW) in an area of 251.94 Ha in Village Amguri, Baithalangso, Kiling Bagicha, Nali Bagicha No. and Sardangang, Sub District Marigaon and Donka, District Morigaon and West Karbi Anglong, Assam by M/s Greenko Energies Private Limited - Terms of Reference (ToR) - reg.	Assam PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha in village Tharakhunchi , Donka Sub-division, District West Karbi Anglong, Assam by M/s Assam power Distribution Company Limited - Terms of Reference (ToR) - reg.	The project title has been updated to reflect (i) the transfer of the ToR from Greenko Energies Private Limited to APDCL, and (ii) the revised project boundary based on detailed surveys and optimization. With the updated layout and land requirement, the entire project now falls in village (Tharakhunchi), Sub Division Donka and district (West Karbi Anglong).
2	Point No. 1,5	Land details 251.94 hectares. Location: The project is located in the villages of Amguri, Baithalangso, Kiling Bagicha, Nali Bagicha No., and Sardangang, falling	Land details 308.79 hectares. Location: The project is located in the village of Tharakhunchi, falling under the Sub division Donka, within the district of West Karbi	The increase in land requirement is due to change in the project layout following detailed site surveys and geological mapping, which made realignment and

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
		under the sub-districts of Marigaon and Donka, within the districts of Morigaon and West Karbi Anglong, Assam and is being undertaken by M/s Greenko Energies Private Limited.	Anglong, Assam and is being undertaken by Assam Power Distribution Company Limited.	change of size of various components. The change in FRL, dam type, and salient project features also required additional area for infrastructure etc. Furthermore, social constraints and a community forest also made change in the proposed land.
3	Point No. 7	Land details 251.94 hectares. Name of the Project: Greenko Assam -01 Closed Loop Pumped Storage Project	Land details 308.79 hectares. Name of the Project: Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project	Due to Change in layout and TOR Transfer
4	Annexure-1 Specific Terms of Reference for (River Valley/irrigation Projects) 5. Environmental Management And Biodiversity Conservation Point 5.3	Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for 117.70 ha of forest land involved in the project shall be submitted within stipulated time.	Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for 79.37 ha of forest land involved in the project is submitted. The proposal is processed by State Secretary for Recommendation after PSC – II. Site Visit Report uploaded by DIG.	Forest land has been reduced by 54.87 Ha, due to the change in project layout, alignment, subjecting to social issue and to explore the possibilities for reducing the Forest land requirement.
5	Annexure-II Subject	Greenko Assam - 01 Closed Loop Pumped Storage Project (900 MW) in an area of 251.94 Ha in Village Amguri, Baithalangso, Kiling Bagicha, Nali	Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha in Village Tharakhunchi, Sub-division Donka, District	Due to Change in layout & User Agency

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
		Bagicha No. and Sardangang, Sub District Marigaon and Donka, District Morigaon and West Karbi Anglong, Assam by M/s Greenko Energies Private Limited	West Karbi Anglong, Assam by Assam Power Distribution Company Limited	
6	Annexure-II The details of the project: - Point i	Greenko Energies Pvt. Ltd., hereinafter referred as GEPL, proposes to develop Pumped Storage Project (PSP) near located at Tharakhunchi Village, Donka subdivision of Karbi Anglong District and Amguri, Killing Bagicha villages, Marigaon Circle subdivision of Marigaon District in Assam.	Assam Power Distribution Company Limited hereinafter referred as APDCL, proposes to develop Assam /PSP-01 located at Tharakhunchi Village, Donka Sub-division of Karbi Anglong District in Assam.	Due to Change in layout & User Agency
7	Annexure-II The details of the project: - Point ii	The total capacity of proposed PSP is 900 MW (5481 MWH) and it is proposed that One-time requirement of 0.833 TMC of water will be lifted from existing nearby Umiam River (which is located about 2 Km away from the proposed Lower reservoir) and will be stored in the lower reservoir to be constructed and used cyclically for energy storage and discharge, out of which 0.217 TMC of water will be used for power generation by re-circulation with 6.09	The total capacity of proposed PSP is 900 MW (5679 MWH) and it is proposed that One-time requirement of 0.395 TMC of water will be lifted from existing nearby Umiam River (which is located about 3 Km away from the proposed Lower reservoir) and will be stored in the lower reservoir to be constructed and used cyclically for energy storage and discharge, out of which 0.216 TMC of water will be used for power generation by re-	Since the storage hour and rated capacity increased, the one-time filling requirement of water also increased.

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
		hours storage capacity. Evaporation losses if any will be recouped periodically from Umiam River.	circulation with 6.31 hours storage capacity. Evaporation losses if any will be recouped periodically from Umiam River.	
8	Annexure-II The details of the project: - Point iii	The geographical co-ordinate of the project are: Upper Reservoir : 26° 0'5.34"N & 92°16'19.23"E Lower Reservoir: 26° 0'12.00"N & 92°15'8.00"E	The geographical co-ordinate of the project are: Upper Reservoir : 26° 0'7.72"N & 92°16'18.94"E Lower Reservoir: 26° 0'8.81"N & 92°15'1.23"E	The change in the FRL and layout of the project caused the change in geographical co-ordinate
9	Annexure-II The details of the project: - Point iv	The proposed scheme involves creation of new upper reservoir & lower reservoir. It is proposed to construct Geomembrane Faced Rockfill Dam (GFRD) embankment for the weighted average height of around 20m (with maximum height of 43m) for the length of 648 m with gross storage of 0.242 TMC capacity and Lower reservoir of Geomembrane Faced Rockfill Dam (GFRD) embankment for the average height of 17m (with maximum height of 43m) for the length of 675 m with gross storage of 0.220 TMC capacity. Intake structure and trash rack with four number of independent pressure shafts from Power block of upper reservoir is connected to Underground	The proposed scheme involves creation of new upper reservoir & lower reservoir. For forming the new upper reservoir to store the water, it is proposed to construct Roller Compacted Concrete (RCC) Main Dam for the weighted average height of around 31.90 m (with maximum height of 70 m) for the length of 512 m and Roller Compacted Concrete (RCC) Saddle Dam for the weighted average height of around 21.81 m (with maximum height of 59 m) for the length of 421 m. Similarly, for creating the new lower reservoir, it is proposed to construct Roller Compacted Concrete (RCC) Main Dam-1 for the weighted average height of 41.01 m (with	The dam type has been revised based on site-specific geological conditions identified through geological mapping, and the project's water requirement has increased from 0.245 TMC to 0.395 TMC due to the change in FRL.

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
		Powerhouse located at about 883.97 m. The Powerhouse is equipped with two Three (3) phase, alternating current synchronous/ generator motor semi umbrella type with vertical shaft type units composed with generator/motor and a pump/turbine having generated/pumping capacity of 300MW / 330MW respectively and two Three (3) phase, alternating current synchronous/ generator motor semi umbrella type with vertical shaft type units composed each of a generator/motor and a pump/turbine having generated/pumping capacity of 150MW / 165MW.	maximum height of 58 m) for the length of 362 m and Roller Compacted Concrete (RCC) Main Dam-2 for the weighted average height of 32.84 m (with maximum height of 68 m) for the length of 425 m. Intake structure and trash rack with three number of independent pressure shafts from Power block of upper reservoir is connected to Underground Powerhouse located at about 976.68 m. The Powerhouse is equipped with two Three (3) phase, alternating current synchronous/ generator motor suspended type with vertical shaft type units composed with generator/motor and a pump/turbine having generated/pumping capacity of 300MW / 330MW respectively and two Three (3) phase, alternating current synchronous/ generator motor suspended type with vertical shaft type units composed each of a generator/motor and a pump/turbine having generated/pumping capacity of 150MW / 165MW.	

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
10	Annexure-II The details of the project: - Point v	The Project will generate 900 MW by utilizing a design discharge of 280.50 Cumec and rated head of 367.50m. The cycle efficiency of the project is expected to be around 80%. One 400 KV Double Circuit transmission line with Twin Moose Conductor of length 55 KMs (appx.) from PSP will be connected to 400 / 220 kV MISA Substation PGCIL, Dighaljar, Assam for evacuation of power during turbine mode and pumping of power from grid during pumping mode.	The Project will generate 900 MW by utilizing a design discharge of 269.18 Cumec and rated head of 376.33 / 375.63 m (Large Unit / Small Unit). The cycle efficiency of the project is expected to be around 81.47%. One 400 KV Double Circuit transmission line with Twin Moose Conductor of length 40-50 KMs (appx.) from PSP will be connected to 400 kV Makoiram Substation under STU, West Karbi Anglong District, Assam. for evacuation of power during turbine mode and pumping of power from grid during pumping mode.	Due to Change in layout minor changes in the salient features.
11	Annexure-II The details of the project: - Point vi Land requirement	Forest Land: 134.24 Ha Non-forest Land: 117.70 Ha Total Land: 251.94 Ha	Forest Land: 79.37 Ha Non-forest Land: 229.42 Ha Total Land: 308.79 Ha	Due to Change in layout
12	Annexure-II The details of the project: - Point vii Demographic details in 10 km radius of project area	The proposed project area is located in Tharakhunchi Village, Donka Subdivision of Karbi Anglong District, and in Amguri and Killing Bagicha villages, Marigaon Subdivision, Marigaon District, Assam.	The proposed project area is located in Tharakhuchii Village, Donka Sub division of West Karbi Anglong District, Assam.	Due to Change in layout

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
13	Annexure-II The details of the project: - Point viii Water requirement	Greenko Assam-01 Off-Stream Closed Loop Pumped Storage Project PSP (900 MW) will require 6.94 MCM (0.245 TMC) for initial reservoir filling and thereafter ~ 1.13 MCM (0.04 TMC) power generation by re-circulation. Evaporation losses if any will be recouped periodically from nearby Umiam River for restoring the storage capacity lost due to evaporation.	Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project PSP (900 MW) will require 11.174 MCM (0.395 TMC) for initial reservoir filling and thereafter 6.121 MCM (0.216 TMC) power generation by re-circulation. Evaporation losses if any will be recouped periodically from nearby Umiam River for restoring the storage capacity lost due to evaporation.	-
14	Annexure-II The details of the project: - Point ix Project Cost	Project Cost: The estimated project cost is Rs 5849.49 crore. Total capital cost earmarked towards environmental pollution control measures will be worked out during EIA study as well as the Recurring cost (operation and maintenance).	Project Cost: The estimated project cost is Rs 5849.50 crore. Total capital cost earmarked towards environmental pollution control measures will be worked out during EIA study as well as the Recurring cost (operation and maintenance).	The project cost has been revised by Rs 1.00 lakh to incorporate refinements.
15	Annexure-II The details of the project: - Point x Project Benefit	Project Benefit: Total Employment will be 2000 persons as direct & 150 persons indirect after expansion.	Project Benefit: Total Employment will be 2000 persons as direct & 250 persons indirect after expansion.	
16	Annexure-II The details of the project: - Point xv	Name of the Proposal: Greenko Assam-01 Off-Stream Closed Loop Pumped Storage Project Location: The proposed project involves the creation of	Name of the Proposal: Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha in village Tharakhunchi , Sub	Due to Change in layout & user agency

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
	The salient features of the project are as under: 1. Project details	Upper Reservoir 26° 0'5.34"N & 92°16'19.23"E Lower Reservoir 26° 0'12.00"N & 92°15'8.00"E	division Donka, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited The proposed project involves the creation of Upper Reservoir 26° 0'7.72"N & 92°16'18.94"E Lower Reservoir 26° 0'8.81"N & 92°15'1.23"E	
17	Annexure-II The details of the project: - Point xv The salient features of the project are as under: 3. Electricity generation capacity	Powerhouse Installed Capacity: 900 MW (5481 MWH) Generation of Electricity Annually: 1899 MU	Powerhouse Installed Capacity: 900 MW (5679 MWH) Generation of Electricity Annually: 1969.20 MU	The increase in rated capacity has led to a corresponding rise in annual electricity generation.
18	Annexure-II The details of the project: - Point xv The salient features of the project are as under: 4. ToR/EC Details	Cost of project: 5849.49 Cr. Total area of Project: 251.94 Ha Height of Dam from River Bed (EL): • Upper reservoir max- 43 m & Avg-20 m • Lower reservoir max- 43 m & Avg 17 m	Cost of project: 5849.50 Cr. Total area of Project: 308.79 Ha Height of Dam from River Bed (EL): • Upper reservoir Main Dam: max- 70 m & Avg-31.9 m and Saddle Dam:	Revisions in the project layout and site-specific geological conditions necessitated changes in the location and area of the two reservoirs.

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
		Length of Tunnel/Channel: 335Mts (TRC) & 257Mts Intake Details of Submergence area: 108.44 Ha	max- 59 m & Avg- 21.81 m • Lower reservoir Main Dam-1: max- 58m & Avg 41.01 m and Main Dam-2: max- 68 m & Avg- 32.84 m Length of Tunnel/Channel:77 7.98Mts (TRC) 235.42 Mts Intake • Details of Submergence area: 138.7 Ha	
19	Annexure-II The details of the project: - Point xv The salient features of the project are as under: 5. Muck Management Details	No. of proposed disposal area/ (type of land- Forest/Pvt. land): Two Locations of 25 Ha in Non-Forest Area	No. of proposed disposal area/ (type of land- non forest land 29.63 Ha	
20	Annexure-II The details of the project: - Point xv The salient features of the project are as under: 6. Land Area Breakup	Non forest land: 117.70 ha Forest Land: 134.24 ha Total Land: 251.94 ha Submergence area/Reservoir area: 108.44 Ha-Upper & Lower reservoirs	Non Forest land: 229.42 ha Forest Land: 79.37 ha Total Land: 308.79 ha Submergence area/Reservoir area: 138.7 Ha	Revisions in the project layout and site-specific geological conditions necessitated changes in the location and area of the two reservoirs.
21	Annexure-II	Forest Clearance: Online application seeking forest diversion for around 117.70 Ha after receipt of ToR	Forest Clearance: Online application seeking forest diversion for around 79.37 Ha is submitted for Approval.	Forest land has been reduced.

S. No.	Para of ToR issued by MoEF&CC	Details as per the ToR	To be revised/ read as	Justification/ reasons
	The details of the project: - Point xv The salient features of the project are as under: 9. Miscellaneous Particulars: Status of other statutory clearances	Approval. Alongside, other statutory clearances (as applicable) from State as well as Central government will be obtained post completion of Detailed Project Report.	The project is presently processed by State Secretary for Recommendation after PSC – II. Apart from that, other statutory clearances (as applicable) from State as well as Central government will be obtained post completion of Detailed Project Report.	

v. The salient features of the project:

- **EAC Meeting Details:**

EAC meeting/s	46th
Date of Meeting/s	09.01.2026
Date of earlier EAC meetings	14.05.2025

- **Project details:**

Name of the Proposal	Assam/PSP-01 (900 MW) Off Stream Closed Loop Pumped Storage Project
Proposal No.	IA/AS/RIV/560544/2025
Location (Including Coordinates)	Upper reservoir is longitude 92°16'18.94" East and latitude is 26°0'7.72" North and Lower reservoir are at longitude 92°15’1.23” East and latitude 26°0'8.81" North.
Company’s Name	M/s Assam Power Distribution Company Limited (APDCL)

CIN no. of Company/user agency	U40109AS2003SGC007242
Accredited Consultant, Validity and certificate no.	R S Envirolink Technologies Private Limited NABET/EIA/25-28/RA 0415 Valid till 15/08/2028
Project location (Coordinates /River/ Reservoir)	Tharakhunchi Village, Donka Sub-division, West Karbi Anglong district in Assam
Inter- State Issue involved	No

- **Category details:**

Category of the project	1 (c)
Capacity / Cultural command area (CCA)	900 MW
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	

- **ToR Details:**

Earlier ToR Proposal No.	IA/AS/RIV/534107/2025
Earlier EAC meeting date	23/04/2025
ToR Letter No.	F. No. J-12011/21/2025-IA.I(R)
ToR grant Date	02/06/2025
Cost of project	5849.50 Crores
Total area of Project	308.79
Date of online application for amendment in TOR was	06/12/2025
Details of CTE	After Receipt of Environmental Clearance
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	500

- **Electricity generation capacity:**

Powerhouse Installed Capacity	900 MW
Generation of Electricity Annually	1969.20 MU
No. of Units	2x300 MW+2X150MW

- **Detail reason for amendment in ToR:**

The Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project, proposed at Tharakhunchi Village in Donka Sub Division of West Karbi Anglong district, Assam, was initially accorded Terms of Reference (TOR) in the name of Greenko Energies Pvt. Ltd. (GEPL) on 02.06.2025 for an installed capacity of 900 MW (2 × 300 MW + 2 × 150 MW), with an estimated land requirement of 251.94 ha, including 134.24 ha of forest land and 117.70 ha of non-forest land. The TOR was subsequently, transferred to Assam Power Distribution Company Limited (APDCL) on 06.11.2025.

Post-TOR, project optimization activities were undertaken, including a land survey, geological mapping, preliminary engineering, and project layout optimization, along with planning for access roads and infrastructure to ensure efficient execution.

These updated field inputs led to refinements in the project layout, dam type, and sizing of key components. As a result, the land requirement and certain technical parameters have been revised to reflect the optimised design and improved planning for access and supporting infrastructure.

Key modifications include a revised Full Reservoir Level (FRL) based on site survey, changes in project layout and updated salient features, adoption of Roller Compacted Concrete (RCC) Dam due to geological conditions, and an increase in water requirement from 0.245 TMC to 0.395 TMC. Consequently, total land requirement has increased by 56.85 ha, from 251.94 ha to 308.79 ha, to accommodate the updated layout, infrastructure, and constructability needs. Proposal for diversion of forest land has been submitted vide proposal no. FP/AS/HYD/IRRIG/556082/2025. The project was processed by State Secretary for Recommendation after PSC-II. Site Visit Completed by DIG, Forest, and presently waiting for FAC Meeting. There is no change in project location or installed capacity. All refinements are based on updated surveys, geological mapping, and constructability considerations to ensure technical viability and safe execution. The RCC dam design has also resulted in an increased reservoir footprint, enhancing water storage capacity. Minor adjustments in technical parameters and component sizing have been made to optimize project performance.

- The comparative statement with reference to earlier proposal and revised proposal is as under:

Assam- 01 Off-Stream Closed Loop Pumped Storage Project (900 MW) SAILENT FEATURES COMPARISION SHEET				
1		**NAME OF THE PROJECT**	**Greenko Assam 01 OCPSP (900 MW) (Original)**	**Assam/PSP 01 (900 MW) (Revised)**
2		**Location**		
	a	Country	India	India

	b	State	Assam	Assam
	c	District	WestKarbi Anglong, Marigaon	West Karbi Anglong District
	d	Village	Tharakhunchi Village, Donka subdivision of (Upper Reservoir & Lower Reservoir) and Amguri, Killing Bagicha villages, Marigaon Circle subdivision	Tharakhunchi Village, Donka subdivision of West Karbi Anglong District in Assam (Upper Reservoir & Lower Reservoir)
3		**Geographical Co-Ordinates**		
	a	**Assam 01 OCPSP Upper Reservoir- (Now Proposed)**		
	i	Latitude	26° 0' 5.34"N	26°0’7.72” N
	ii	Longitude	92°16'19.23"E	92°16’18.94” E
	b	**Assam 01 OCPSP Lower Reservoir - (Now Proposed)**		
	i	Latitude	26°0'12.00"N	26°0’8.81” N
	ii	Longitude	92°15'8.00" E	92°15’1.23” E
4		**Access To Project Site**		
	a	Airport	Lokapriya Gopinath Bordoloi International Airport, Guwahati – 88 kms from project site	Lokpriya Gopinath Bordoloi International Airport (Guwahati), 88 km away from Project location
	b	Rail head	Jagi Road - 23 kms from project site	Jagi Road - 23 Km away from Project location.
	c	Road	Nagaon-Guwahati Highway (NH-27), 16 Km away from project location.	Nagaon-Guwahati Highway (NH-27), 16 km away from project location.
	d	Port	Haldia Port, 1178 Km away from project location.	Haldia Port, 1178 km away from project location
5		**Project**		

	a	Type	Off-Stream Closed Loop Pumped Storage Project	Off-Stream Closed Loop Pumped Storage Project
	b	Storage Capacity - MWH	5481	5679
	c	Rating-MW	900	900
	d	Peak Operation Duration-Hours	6.09	6.31
6		**Assam 01 OCPSP - Upper Reservoir**		
	a	Live Storage-TMC	0.219	0.216
	b	Dead Storage-TMC	0.022	0.140
	c	Gross Storage-TMC	0.242	0.356
7		**Upper Dam**		
	a	Top Bund Level (TBL)	EL + 688.00 m	EL + 684.00 m
	b	Full Reservoir level (FRL)	EL + 685.00 m	EL + 680.00 m
	c	Min. Draw Down Level (MDDL)	EL + 655.00 m	EL + 663.00m
	d	Type of Dam	Geomembrane Faced Rockfill Dam (GFRD)	Roller Compacted Concrete (RCC) Dam
	e	Max. Height of Rockfill Embankment (m)	43	70 (Main Dam)
				59 (Saddle Dam)
	f	Avg. Height of Rockfill Embankment (m)	20	31.90 (Main Dam)
				21.81 (Saddle Dam)
	h	Length at the top of Rockfill Embankment (m)	648	512 (Main Dam)
				421 (Saddle Dam)
	i	Top width of the Rockfill Embankment (m)	8	7.0
	j	Type of Power Block	Concrete Gravity Structure	
	k	Height of Power Block (m)	47.95 m	
	l	Length at the top of Power Block (m)	102 m	
	m	Top width of the Power Block (m)	8 m	

8		**Assam 01 OCPSP - Lower Reservoir**		
	a	Live Storage-TMC	0.217	0.216
	b	Dead Storage-TMC	0.003	0.039
	c	Gross Storage-TMC	0.220	0.255
9		**Lower Dam**		
	a	Top Bund Level (TBL)	EL + 313.00 m	EL + 305.00 m
	b	Full Reservoir level (FRL)	EL + 310.00 m	EL + 301.00 m
	c	Min. Draw Down Level (MDDL)	EL + 275.00 m	EL + 278.00m
	d	Type of Dam	Geomembrane Faced Rockfill Dam (GFRD)	Roller Compacted Concrete (RCC) Dam
	e	Max. Height of Rockfill Embankment (m)	43	58 (Main Dam-1)
				68 (Main Dam-2)
	f	Avg. Height of Rockfill Embankment (m)	17	41.01 (Main Dam-1)
				32.84 (Main Dam-2)
	g	Length at the top of Rockfill Embankment (m)	675	362 (Main Dam-1)
				425 (Main Dam-2)
	h	**Approach Channel**		
	i	Type & Shape	Concrete lined & Trapezoidal	
	j	Length of channel (m)	369	
	k	Bed width (m)	15	
	l	Full supply depth (m)	5.00	
	m	Bed slope	1 in 3800	
10		**Intake Structure**		
	a	Type	Diffuser Type	Diffuser Type
	b	No. of Vents (No)	3	3
	c	Size of Each Intake	21 m (W) X 5.90 m (H) Including Piers	23.70 m (W) X 7.90 m (H) Including Piers
	d	Length of each Intake	35.73(covered with RCC slab at top up to Intake Gate)	30.88 m (covered with Reinforced Concrete slab at top up to Intake Gate)
	e	Elevation of Intake centre line	EL + 645.30 m	EL + 652.65 m
	f	Elevation of Intake bottom	EL + 643.05 m	EL + 650.00 m

	g	Design Discharge of each Intake (Turbine mode)	93.50 Cumec	89.67 Cumec
	h	Trash rack type	Vertical with inclination of 15°	Vertical with inclination of 15°
	i	Size of Trash Rack	3 Nos. of 6.00 m(W) X 6.11 m (H) for each unit	3 Nos. of 5.90 m(W) X 8.18 m (H) for each unit
	j	Numbers & Size of Intake Service Gate	3 Nos. of 3.80 m (W) X 4.50 m (H) with independent rope drum hoist	1 No. of 4.70 m (W) X 5.30 m (H) with independent rope drum hoist
	k	Numbers & Size of Intake Emergency Gate	1 No. of 3.80 m (W) X 4.50 m (H) with independent rope drum hoist	1 No. of 4.70 m (W) X 5.30 m (H) with independent rope drum hoist
11		**Penstock /Pressure Shafts**		
	a	Type	Underground Steel lined - Circular	Underground Steel lined - Circular
	b	Number of Pressure Shaft	Total 3 Nos. of Independent Penstock in which 1 no. will get bifurcated into 2 nos. near Powerhouse to feed 2 units of 150 MW each.	Total 3 Nos. of Independent Penstock in which 1 no. will get bifurcated into 2 nos. near Powerhouse to feed 2 units of 150 MW each.
	c	Diameter of Pressure Shaft (m)	4.50	5.30
	d	Length of Penstock/Pressure Shaft from Upper Intake to Powerhouse (for Large Unit)	1001.52 m Length of Vertical Pressure Shaft - 1 (VPS-1) – 219.50 m Length of Horizontal Pressure Shaft -1 (HPS -1) – 284.00 m Length of Vertical Pressure Shaft – 2 (VPS-2) – 240.90 m Length of Bottom Horizontal	976.68 m Length of Inclined Pressure Shaft – 1 (IPS 1) – 99.16 m Length of Vertical Pressure Shaft – 1 (VPS 1) – 231.21 m Length of Inclined Pressure Shaft – 2 (IPS 2) – 196.15 m

			Pressure Shaft (BHPS) – 257.12 m	Length of Vertical Pressure Shaft – 2 (VPS 2) – 214.74 m
	e	Design Discharge of each Penstock (Cumec)	93.50	89.67
	f	Velocity in the Penstock (m/sec)	5.88	4.07
	g	No. of Branch Pressure Shaft	2	2
	h	Dia. Of Branch Pressure Shaft (m)	3.20	3.80
	i	Length of each branch Pressure Shaft (m)	100 (appx.)	75 (appx.)
	j	Design Discharge in branch Pressure Shaft (Cumec)	46.75	44.92
	k	Velocity in branch Pressure Shaft	5.81 m/sec	3.96 m/sec
12		**Powerhouse**		
	a	Type	Underground Powerhouse	Underground Powerhouse
	b	Centre line of Unit	EL + 226.00 m	EL + 228.00 m
	c	Dimensions (Excluding Service Bay)	115 m (L) X 25.5 m (W) X 59.95 m(H)	116.20 m (L) X 23.50 m (W) X 48.50 m (H) with Control Block
	d	Size of Service Bay	40.00 m (L) x 25.5 m (W)	37.00 m (L) x 23.50 m (W)
	e	Service bay level	EL + 240.20 m	EL + 242.00 m
	f	Size of Unloading Bay		
	g	Unloading bay level		
	h	**Tail Race Tunnel**		
	i	Type & Shape	Concrete Lined – Circular	Concrete Lined
	j	Number of Tunnels	4 Nos. (2 Nos. for Larger units & 2 Nos. for Smaller units)	4 Nos. (2 Nos. for Larger units & 2 Nos. for Smaller units)
	k	Dia. of Tunnel	5.00 m for larger unit	5.90 m for larger unit &
			4.00 m for smaller unit	4.20 m for smaller unit
	l	Length of the Tunnel	335 m	777.98 m

	m	Design Discharge	93.5 Cumec each for larger unit	89.67 Cumec each for larger unit
			46.75 Cumec each for smaller unit	44.92 Cumec each for smaller unit
13		**Tailrace Outlet**		
	a	Type	Diffuser Type	Diffuser Type
	b	No. of Outlet	4 Nos. (2 Nos. for Larger units & 2 Nos. for Smaller units)	3 Nos.
	c	Size of each outlet	18.00 m (W) X 7.10 m (H) Including Piers for Larger unit, 12.00 m (W) X 5.05 m (H) Including Piers for Smaller unit	23.70 m (W) X 8.80 m (H) Including Piers
	d	Length of each outlet	28.15 m (H) for larger unit, 17.33 m (H) for smaller unit covered with RCC slab at top up to Outlet Gate	29.68 m covered with Reinforced Concrete slab at top up to Outlet Gate
	e	Elevation of outlet centre line	EL + 266.10 m for larger unit	EL + 267.95 m
			EL +265.60 m for smaller unit	
	f	Elevation of Outlet bottom	EL +263.60 m	EL + 265.00 m
	g	Trash rack Type	Vertical with inclination of 15°	Vertical with inclination of 15°
	h	Size of Trash rack	3 nos. - 5.00(W) X 7.35(H) for larger unit	3 nos. - 5.90(W) X 9.11(H)
			2 nos. - 5.25(W) X 5.23(H) m for smaller unit	
	i	Tailrace outlet Service Gate	2 nos. of 4.20 (W) X 5.00 (H) for larger units	1 no. of 5.40 (W) X 5.90 (H)

			2 nos. of 3.40 (W) X 4.00 (H) for smaller unit	
	j	Tail Race outlet Emergency Gate	1 no. of 4.20 (W) X 5.00 (H) for larger unit & 1 no. of 3.40 (W) X 4.00 (H) for smaller unit	1 no. of 5.40 (W) X 5.90 (H)
14	i	**Electromechanical Equipment**		
	a	Pump Turbine	Francis type, vertical shaft reversible pump turbine	Francis type, vertical shaft reversible pump turbine
	b	Total No of units	4 Nos. (2 X 300 MW) + (2 X 150 MW)	4 Nos. (2 X 300 MW) + (2 X 150 MW)
	c	Total Design Discharge (Turbine Mode)-Cumec	280.50	269.18
	d	Rated Head in Turbine mode (Large Unit/Small unit) (m)	367.50	376.33 / 375.63
	ii	**300MW Turbines**		
	a	Total No of units	2 Units (All fixed Speed)	2 Units (All fixed Speed)
	b	Turbine Design Discharge	93.50 Cumec each	89.67 Cumec each
	c	Pump Capacity	330 MW	330 MW
	d	Rated Pumping Head	386.50 m	385.23 m
	e	Rated Pump Discharge	80.89 Cumec	80.42 cumec
	f	Synchronous Speed		
	iii	**Generator-Motor**		
	a	Type	Three (3) phase, alternating current synchronous/ generator motor semi umbrella type with vertical shaft	Three (3) phase, alternating current synchronous generator/motor, suspended type with vertical shaft
	b	Number of units	2 units (2 x 300MW)	2 units (2 x 300MW)

	c	Rated Capacity	Generator – 300 MW	Generator – 300 MW, PF 0.85 lagging
			Pump Input – 330 MW	Motor – 330 MW, PF 0.95 leading
	d	Rated Voltage	18.0 KV	18.0 KV
	e	Speed of Machine	300.00 RPM	300.00 RPM
	vi	**Main Power Transformer**		
	a	Type	Indoor Single-Phase Power transformers with ON Load Tap Changer (OLTC)	Indoor Single-Phase Power transformers with ON Load Tap Changer (OLTC)
	b	Number of units	6 Nos. i.e. 3 nos. per unit + 1 no Spare Total: 7 nos.	6 Nos. i.e. 3 nos. per unit + 1 no Spare Total: 7 nos.
	c	Rated Capacity of each unit	Single Phase, 18 kV/400kV, 130 MVA	Single Phase, 18 kV/ 400/√3 kV, 125 MVA
	d	Rated Voltage	Primary – 18.0 kV; Secondary - 400 kV adjustable range of the secondary voltage: - 10% to +10% In 1.25% steps	Primary - 18.0 kV; Secondary - 400 kV adjustable range of the secondary voltage: - 10% to +10% In 1.25% steps
	v	**150 MW Turbines**		
	a	Total No. of units	2 Units (Both are Fixed Speed)	2 Units (Both are Fixed Speed)
	b	Turbine Design Discharge	46.75 Cumec each	44.92 Cumec each
	c	Pump Capacity	165 MW	165 MW
	d	Rated Pumping Head	386.50 m	385.63 m
	e	Rated Pump Discharge	40.45 Cumec	40.17 Cumec
	f	Speed of Machine		
	vi	**Generator-Motor**		
	a	Type	Three (3) phase, alternating current synchronous generator motor	Three (3) phase, alternating current synchronous generator/motor,

			semi umbrella type with vertical shaft	suspended type with vertical shaft
	b	Number of units	2 units (2 x 150MW)	2 units (2 x 150MW)
	c	Rated Capacity	Generator – 150 MW	Generator – 150 MW
			Motor – 165 MW	Motor – 165 MW
	d	Rated Voltage	18.0 kV	18.0 KV
	e	Speed of Machine	375 RPM	428.57 RPM
	vii	**Power Transformer**		
	a	Type	Indoor Single-Phase Power transformers with ON Load tap changer (OLTC)	Single-Phase oil immersed Power transformers with ON Load tap changer (OLTC)
	b	Number of units	6 Nos. i.e. 3 nos. per unit + 1no. Spare Total: 7 nos	6 Nos. i.e. 3 nos. per unit + 1 no. Spare Total: 7 nos.
	c	Rated Capacity of each unit	Single Phase, 18 kV/400kV, 65 MVA	Single Phase, 18 kV/ 400√3 kV, 63 MVA
	d	Rated Voltage	Primary – 18.0 kV; Secondary - 400 kV adjustable range of the secondary voltage: - 10% to +10% In 1.25% steps	Primary - 18.0 kV; Secondary - 400 kV adjustable range of the secondary voltage: - 10% to +10% In 1.25% steps.
15		**400 KV Gas Insulated Switchgear**		
	a	Type of GIS	Indoor Type	Indoor Type
	b	No. of GIS units	One No.	One No.
	c	Location	Above Transformer Cavern	Above Transformer Cavern
	d	Scheme	Double Busbar Arrangement with bus coupler	Double Busbar Arrangement with bus coupler
16		**POWER EVACUATION**		
	a	Voltage Level (KV)	400	400

	b	No. of Transmission Lines	One double circuit Transmission line	One double circuit Transmission line
	c	Conductor	Twin Moose	Twin Moose or higher conductor
	d	Total Length and name of substation	One 400 KV Double Circuit transmission line with Twin Moose Conductor of length 55 KMs (appx.) from PSP will be connected to 400 / 220 kV MISA Substation PGCIL, Dighaljar, Assam for evacuation of power during turbine mode and pumping of power from grid during pumping mode.	One 400 kV Double Circuit transmission line with Twin Moose Conductor (or higher) of length 40-50 kms (appx.) from the PSP will be connected to a proposed 400 kV Makoiram Grid Substation, West Karbi Anglong District, Assam for evacuation of power during turbine mode and pumping of power from grid during pumping mode.
17		**Estimated Cost (Cr)**		
	a	Civil Works & Other works	2629.00	2629.00
	b	E & M Works incl. transmission	1245.00	1245.00
	c	IDC & Others	1975.49	1975.50
	d	**Total Project Cost with IDC**	**5849.49**	**5849.50**

- **Court case details: Nil**

46.3.3 The EAC during deliberations noted the following:

- The proposal is for grant of amendment in Terms of References (TOR) to the project for Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha located at Village Tharakhunji, Sub District Baithalangso, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited.

- The project is listed at S.N.1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

- The Terms of Reference granted by the Ministry in the name of Greenko Energies Pvt. Ltd. (GEPL) on 02.06.2025 for an installed capacity of 900 MW (2 × 300 MW + 2 × 150 MW), with an estimated land requirement of 251.94 ha, including 134.24 ha of forest land and 117.70 ha of non-forest land. The TOR was Subsequently, transferred to Assam Power Distribution Company Limited (APDCL) on 06.11.2025.

- The EAC noted that the PP after obtaining ToR project optimization activities were undertaken, including a land survey, geological mapping, preliminary engineering, and project layout optimization, along with planning for access roads and infrastructure to ensure efficient execution which led to refinements in the project layout, dam type, and sizing of key components. As a result, the land requirement and certain technical parameters have been revised to reflect the optimised design and improved planning for access and supporting infrastructure. Key modifications include a revised Full Reservoir Level (FRL) based on site survey, changes in project layout and updated salient features, adoption of Roller Compacted Concrete (RCC) Dam due to geological conditions, and an increase in water requirement from 0.245 TMC to 0.395 TMC. Consequently, total land requirement has increased by 56.85 ha, from 251.94 ha to 308.79 ha, to accommodate the updated layout, infrastructure, and constructability needs.
- The EAC noted that the PPP also requested change its project name from Greenko Assam 01 OCPSP (900 MW) to Assam/PSP 01 (900 MW). An online application for diversion of 79.37 ha of forest land was submitted on 11.11.2025 vide proposal no. FP/AS/HYD/IRRIG/556082/2025.

46.3.4 The EAC after examining the information submitted and detailed deliberations recommended the proposal grant of amendment in Terms of References as proposed by the PP to Assam/PSP-01 Off-Stream Closed Loop Pumped Storage Project (900 MW) in an area of 308.79 Ha located at Village Tharakhunji, Sub District Baithalangso, District West Karbi Anglong, Assam by M/s Assam Power Distribution Company Limited, under the provisions of EIA Notification, 2006 and as amended with subject to the following additional ToR points:

i. EIA/EMP, collection of baseline data, other statuary clearance and the public hearing shall be carried out as per revised layout.
ii. All other Terms of Reference mentioned letter no. J-12011/21/2025-IA.I(R) dated 02.06.2025 shall remain unchanged.

Agenda Item No. 46.4

Ratle Hydro-electric Project (850 MW) in an area of 567.22 Ha located at Village Drabshala, Sub District and District Kishtwar and Doda, Jammu and Kashmir by M/s Ratle Hydroelectric Power Corporation Limited - Validity Extension of EC – reg.

[Proposal No. IA/JK/RIV/560703/2025; F. No. J-12011/39/2010-IA.I]

46.4.1 The proposal is for grant of validity extension of Environmental Clearance (EC) of Ratle Hydroelectric Project (850 MW) in an area of 567.22 Ha located at Village Drabshala, Sub District and District Kishtwar and Doda, Jammu and Kashmir by M/s Ratle Hydroelectric Power Corporation Limited.

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

i. Ratle HE (850MW) Project is a run of the river (ROR) scheme on Chenab river near village Drabshalla in District Kishtwar of UT of Jammu and Kashmir. The Project is under implementation by Ratle Hydroelectric Power Corporation Limited (RHPCL), a Joint Venture Company of NHPC Limited & JKSPDCL with equity participation of 51% & 49% respectively.

ii. The Environmental Clearance was accorded to Ratle HE Project (In favour of PP- M/s GVK Ratle) by MoEF&CC in 2012 vide letter No. J-12011/39/2010-IA-1 dated 12.12.2012. However, the Project was abandoned by M/s GVK in July 2014.

iii. Subsequently, after formation of new Joint Venture between NHPC Limited and JKSPDCL (RHPCL) on 01.06.2021, the Environmental Clearance of Project was transferred in the name of RHPCL vide letter No. J-12011/39/2010-IA-1 dated 27.09.2021.

iv. The project envisages construction of 133 m high (from deepest foundation level) concrete gravity Dam, 4 nos underground circular steel lined pressure shafts/penstocks and an underground Power House accommodating 4 units of 205 MW (Francis type). A unit of 30 MW is also envisaged to utilize the stipulated continuous release of environmental flows. The design energy in a 90% dependable year with 95% machine availability is 3136.76 MU. The scheduled completion of the Project is 60 months (including tendering period).

v. The estimated Cost of the project at November 2018 price level has been estimated at Rs.5281.94 crore including IDC & FC of Rs.958.06 crore. The first year tariff and levelized tariff of the power is estimated to be Rs.3.62/kWH and Rs.3.92/kWH, respectively.

vi. The Physical Progress of work is 26.6% (as on 31.12.2025). Details are mentioned as under and anticipated completion of the work is as proposed to be in November 2028

Sr. No	Description	Unit	Total Quantity	Completed Quantity	Target Date of Completion
1	**Power House Cavern Excavation**	Cum	2,57,000	1,98,800 (77%)	**15-04-2026**
2	**Transformer Cavern Excavation**	Cum	83,000	83,000 (100%)	**Completed**
3	**Dam Abutment Excavation**	Cum	3,97,400	3,97,400 (100%)	**Completed**
4	**Dam River Bed Excavation**	Cum	3,00,000	2,72,182 (91%)	**20-02-2026**
5	**Dam Concreting**	Cum	9,50,000	Started on 04.01.2026	**15-04-2028**
6	**D/s Surge Chamber Excavation**	Cum	99,000	84,850 (85%)	**30-06-2026**
7	**Pressure Shaft - Excavation**	Cum	73,000	70000(96%)	**30-06-2026**
8	**TRT Excavation (**Only Plug portion is Balance**)**	Cum	1,25,000	1,16,500 (93%)	**30-04-2027**
9	**TRT Lining**	Rm	1585	708 (45%)	**31-05-2027**
Subsequent Activities yet to Start : HM Works, E&M Works, Surge Chamber Concreting, TRT Outlet etc.					

46.4.3 The EAC during deliberations noted the following:

- The proposal is for validity extension of Environmental Clearance of Ratle Hydroelectric Project (850 MW) in an area of 567.22 Ha located at Village Drabshala, Sub District and District Kishtwar and Doda, Jammu and Kashmir by M/s Ratle Hydroelectric Power Corporation Limited.

- The project is listed at S.N.1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

- The EAC noted that the Environmental Clearance was granted by the Ministry vide letter dated vide letter No. J-12011/39/2010-IA-1 dated 12.12.2012 in favour of M/s GVK Ratle, however, the Project was abandoned by M/s GVK in July 2014. Subsequently, the Environmental Clearance of Project was transferred in the name of RHPCL vide letter No. J-12011/39/2010-IA-1 dated 27.09.2021.

- Currently, PP informed that they submitted an application for seeking the extension of validity of EC so as to continue on the project activities for the implementation. The delay in project execution is due to the following reasons:

  i. Previously, the implementation of Ratle HE Project was taken up by M/s GVK Ratle Hydroelectric Project Pvt. Limited (awarded by GOJK on BOOT basis and the Project was abandoned by M/s GVK in July 2014.
  ii. After formation of Joint Venture between NHPC Limited and JKSPDCL (RHPCL) on 01.06.2021, the Environmental Clearance of Project was transferred in the name of RHPCL vide letter No. J-12011/39/2010-IA-1 dated 27.09.2021Transfer of Environmental Clearance in 2021 in the name of Ratle Hydroelectric Power Corporation Limited (RHPCL)
  iii. After abandoning of Project by the previous developer in July 2014, the Project remained under various litigations/ Court proceedings and stays and no construction activities could be taken up between July 2014 to 2021.
  iv. As much of the EC period has been lost in litigation before formation of RHPCL (Joint Venture), RHPCL (current PP) could utilize only 04 years of Environmental clearance period for implementation of the Project.

- The EAC noted that the as on date the physical progress of 26.02% has been achieved and the Project is expected for commissioning by Nov 2028, subject to unforeseen hindrances or delays. The EAC further observed that as per the Ministry's Notification S.O. 1807(E) dated 12.04.2022, the environmental clearance granted to River Valley project shall be valid for a period of thirteen years and may be extended in respect of valid Environmental Clearance, by the regulatory authority concerned by a maximum period of two years.

- The EAC noted as per MoEF&CC notification S.O. 221(E) dated 18.01.2021 the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19).

- Additionally, as per MoEF&CC OM no. IA3-22/22/2025-IA.III dated 30.10.2025 the Ministry has clarified that the following time period during which the project proponent was unable to implement the EC granted for the related Project/Activities shall be treated as a zero period for calculating the validity of the EC:

  (a) Duration of stay orders of the competent Courts leading to non- implementation of the Projects/Activities for which EC had been duly granted and in respect of which the Project Proponent/Applicant shall provide necessary documentary evidence;
  (b) Duration of pendency before NCLT till the Resolution Plan is approved by NCLT and Project/Activity is handed over to the successful Resolution Applicant (New Management/Bidder) and in respect of which the Project Proponent /Applicant shall provide necessary documentary evidence;

or

(c) Duration of pendency before NCLT till the Liquidator selects the new bidder following due process as part of the liquidation proceedings and NCLT approves the concerned sale or scheme and confirms the transaction of payment and in respect of which the Project Proponent /Applicant shall provide necessary documentary evidence.

The above mentioned O.M. also clarifies that in the event that the period lost in litigation or in NCLT proceedings, as mentioned above, is more than three years, the concerned State Pollution Control Board or Pollution Control Committee shall add appropriate environmental safeguards, as deemed appropriate, in the Consent to Operate (CTO) conditions based on the changes in the site conditions that may have taken place during this period and taking into account the need for installation of appropriate pollution control, prevention and abatement measures that may be necessitated.

The EAC noted that EC was granted to the project on 12.12.2012 and as per applicable provisions at the time of grant of EC, the validity of the EC was up to 11.12.2022. Vide MoEF&CC notification S.O. 221(E) dated 18.01.2021, it was provisioned that the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19). Further, vide Ministry's Notification S.O. 1807(E) dated 12.04.2022, the validity period of environmental clearance granted to River Valley project was decided for a period of thirteen years and the same may be extended by a maximum period of two years. Vide MoEF&CC OM no. IA3-22/22/2025-IA.III dated 30.10.2025, the Ministry clarified that the time period during which the project proponent was unable to implement the EC granted for the related Project/Activities in view of proceedings before NCLT or Courts, the time period shall be treated as a zero period for calculating the validity of the EC after submission of necessary documentary evidence. The EAC inquired about the necessary documentary evidence wherein it was justified that project were halted for four years. PP, vide email dated 10.01.2026 provided requisite documents therefore the EAC opined that 4 years shall be considered as zero period in calculation of validity of EC. Accordingly, the EC granted to Ratle Hydroelectric Project (850 MW) on 12.12.2012 is valid till 11.12.2030 and further extendable up to maximum of two years.

Accordingly, the EAC suggested the project proponent to take further necessary action as per MoEF&CC OM no. IA3-22/22/2025-IA.III dated 30.10.2025 and submit the proposal for EC validity extension before expiry of existing EC.

The EAC, therefore ***returned*** the proposal in present form.

Agenda Item No. 46.5

Balimela Open Loop Pumped Storage Project (2 x 250 MW) in an area of 248.03 Ha located at Village Khilaguda, Tarapur, etc., Sub District Chitrakonda and Orkel, District Malkangiri, Odisha by M/s Odisha Hydro Power Corporation Limited – Terms of References (TOR) – reg.

[Proposal No. IA/OR/RIV/562792/2025; F. No. J-12011/46/2025-IA.I (R)]

46.5.1 The proposal is for grant of Terms of Reference (ToR) to the project Balimela Open Loop Pumped Storage Project (2 x 250 MW) in an area of 248.03 Ha located at Village Khilaguda, Tarapur, etc., Sub District Chitrakonda and Orkel, District Malkangiri, Odisha by M/s Odisha Hydro Power Corporation Limited.

46.5.2 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 proposed Balimela Pumped Storage Project is located near existing Balimela Hydro Electric Project near Balimela village in Malkangiri tehsil, Malkangiri district, Odisha.

ii. The proposed Balimela Pumped Storage Project (PSP) envisages the utilization of the Existing Balimela reservoir as an Upper reservoir on the Sileru River together with the construction of a lower reservoir on Kharika Jhora nala. The main storage for the proposed scheme shall be in the Lower reservoir. A Earth-Cum Rockfill damof height 59.6m is Proposed to form the Lower Reservoir. The Full Reservoir Level of the proposed Balimela PSP Lower Reservoir (Lower Reservoir) is at El. 255.68mand Dead Storage level at El. 245.80m respectively.

iii. Background:

a) The Balimela irrigation project is a joint venture project of Odisha and Andhra Pradesh to divert half of the water to Potteruvagu sub-river basin for irrigation purposes in Odisha. While diverting the share of Odisha to Potteruvagu River 510MW (6X60MW+2X75MW) power is generated through a surface powerhouse by Odisha Hydro Electric Project (OHPC). The rest of the water is being discharged through Sileru River for utilization by Andhra Pradesh. The Balimela Power Project forms the second stage of development of Machkund - Sileru River, the first stage being the Machkund Project.

b) studies and report submitted by THDC India Ltd (A Joint Venture of Govt. of India & Govt. of U.P.) proposing Balimela Pumped Storage scheme in the vicinity of the existing power plant of Balimela HEP near Balimela town.

c) Subsequent studies of the topography and hydrology of the project area to evaluate project layout with alternate dam axis and utilisation of natural resources, the scheme with ultimate capacity of 500 MW with maximum gross head of 188.223 m has been considered.

d) The water from existing Balimela Reservoir will pass through the waterways to the turbines installed at the power house to generate 500MW of power during peak hours. The tail water will be diverted through the tunnel to store water in the lower reservoir created by construction of a rock fill dam across a stream (Kharika jhora) near Balimela town. The excess water from lower reservoir if any will be ultimately discharged in Potteruvagu River through Kharika Jhora. During off peak hours the excess power from thermal stations and other sources will be fed back to pump the water from Lower Reservoir to Upper Reservoir through power house where generators and turbines will then act as motors and pumps respectively. The same cycle of operation will be repeated during peak and lean period.

e) Since the Upper and Lower Reservoirs have effective storage capacity equivalent to six (6) hours of generation daily at full rated output, it is possible to operate the project on daily basis.

iv. The project will be an On-stream pumped storage scheme. It will comprise two reservoirs: one at lower elevation and other at upper elevation. The difference of water levels of the reservoirs will represent the effective "head" of the Project. The water conductor system will connect the two reservoir through an underground power house

v. The geographical co-ordinate of the project are Lat. N 18° 13' to 18° 11' & Long. E 82° 05' to 82° 06'.

vi. **Land requirement:**

Nature of Land involved	Area in Ha
ɔn-Forest Land (A)	5.75 Ha.
rest Land (B)	2.28 Ha.
tal Land (A+B)	**8.03 Ha.**

vii. **Project Benefit:** The scheme would afford on annual peaking period energy generation of 1171 GWh annually considering the project operation for one cycle for 6 hours 24.99 minutes peaking per day with design energy generation of 1112.45 GWh, calculated with 95% capacity availability. Energy generation in 90% dependable flow. Employment during project construction and operation phases.

viii. **Environmental Sensitive area:** There is Chitapari Reserved Forest within 10 km distance from the project site.

ix. **Alternative Studies:** A comparative analysis has been carried out for all the three alternative sites and the same is presented below:

	Alternate-1 (Dam axis A-A)	**Alternate-2 (Dam axis B-B)**	**Alternate-3 (Dam axis C-C)**
Upper Reservoir	**Existing Balimela Reservoir**	**Existing Balimela Reservoir**	**Proposed new**
FRL (m)	462.10	462.10	560
MDDL(m)	438.91	438.91	544
Proposed Live Storage (MCM)	-	-	11.98
Height of dam (m)	-	-	65
Lower Reservoir	**Proposed new**	**Proposed new**	**Existing Balimela Reservoir**
Proposed FRL(m)	232.34	255.68	462.10
Proposed MDDL(m)	220	245.80	438.91
Proposed Live Storage (MCM)	5.991	6.811	-
Height of dam (m)	**40.0**	**59.6**	-
Length of dam (m)	**1462**	**699**	-
Submergence area (Ha)	**85**	**76.35**	**77.05**
Gross Head(m)	224.3	199.8	100
Tentative WCSLength(m)	3700	2030	3000
L/H Ratio	**16.5**	**10.16**	**30**
Proposed Installed Capacity (MW)	500	500	500
Tentative Cost (incl. E&M) (in Cr.)	2355.26	2285.15	2553.73
Per MW Cost (in Cr)	**4.71**	**4.57**	**5.1**

Remarks	Hamlets on both the banks and submergence of private agriculture land.	Project area lies forest	Project area lies partially in forest
Reservoir filling	Turni Nala	Kharika Jhora nala	From existing Balimela reservoir

For the selection of lower dam site, the most prominent factors that govern from the techno-commercial and economic standpoint are L/H ratio, Per MW cost and submergence area. Keeping these factors in mind, from table given above, most optimised alternate is coming out to be the Alternate-2 wrt. to L/H ratio as well as per MW Cost.

Apart from above assessment, few points have also been considered during the selection of layout alternatives as below:

1) The Existing Balimela reservoir is a Joint project of Govt. of Odisha and Andhra Pradesh. The existing Balimela Project supplies water to Andhra Pradesh as per the agreement dated 04.09.1962. The Balimela Reservoir is meant to divert 50% of water through a tunnel to Balimela Power House of Odisha state, while remaining 50% of water is let off in the river for utilization by Andhra Pradesh as per the interstate agreement.
2) The water from Sileru river and its tributaries will not be used for generation. The use of existing Upper reservoir (i.e. Balimela reservoir) only for pumped storage operation i.e. during peak hours by utilising the water storage of Lower reservoir and recycle to existing Balimela reservoir. So, the same water will be recycled between Upper and Lower reservoir and no additional water utilized from Sileru river and its tributaries.
3) Proceeding of meeting in the report of Godavari Water Disputes Tribunal (1979-1980)- The proceedings of the meeting between the Chief Minister of Andhra Pradesh and Orissa at Hyderabad held on 15th December 1978 wide annexure-D clause II G-12 Sabari sub-basin indicates that the state of Andhra Pradesh agreed for utilization of all waters up to "The Potteru project site on Potteruvagu near Surliukunta village. Lat. 18^{0} -12'-30'' N and Long 82^{0} -01- 30''E." by the State of Orissa.
4) The Survey of India topo sheet no- E44K4-65J/4 and google image indicate that the Kharika Jhora nala is upstream of the Potteru project site on Potteruvagu near Surliukunta village. As such the entire water of Kharika Jhora could be utilized by the state of Odisha.

Considering the above findings, Alternate 3 dam axis C-C is rejected as only 100m gross head

is available and their higher storage requirements will ponder the issue in reservoir filling as only nala will be the source of filling and pumping will cost more which lead the project unfeasible.

The remaining two alternatives i.e. dam axis A-A & B-B, Alternate-2 dam axis B-B is the most optimized alternate wrt. to L/H ratio, submergence depth as well as per MW Cost.

Therefore, Alternate-2 dam axis B-B is more preferable for the project and has been selected for optimization and further investigations in the DPR study.

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

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

- **Project details**

Name of the Proposal	Balimela Pumped Storage Project
Location (Including coordinates)	District Malkangiri, Odisha Coordinates of the project area: Lat. N 18° 13' to 18° 11' & Long. E 82° 05' to 82° 06'
Inter- state issue involved	Nil
Seismic zone	II zone

- **Category details**

Category of the project	Category A
Provisions	Yes
Capacity / Cultural command area (CCA)	500 MW(2 x 250 MW)
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	-

- **Electricity generation capacity**

Powerhouse Installed Capacity	500MW
Generation of Electricity Annually	1171 MU
No. of Units	2 x 250 MW
Additional information (if any)	-

- **ToR/ EC Details**

Cost of project	Rs. 251582 Lakh
Total area of Project	248.03 Ha.
Height of Dam from River Bed (EL)	59.6 m
Length of Tail Race Tunnel/Head Race Tunnel/Pressure Shaft	299 m (2 Nos.)/1293 m/419 m (2 nos.)
Details of Submergence area	Forest - 80 ha
Types of Waste and quantity of generation during construction/ Operation	Domestic waste (2 TPA)
E-Flows for the Project	As per Norms of MoEF & CC
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.	a) Not Applicable b) For 90% dependable year • Monsoon Season – 30% of average flow • Non-Monsoon, Non Lean Season – 25% of average flow • Lean Season – 20% of average flow

- **Muck Management Details**

No. of proposed disposal area/(type of land-	5
Muck Management Plan	To be prepared as part of CEIA
Monitoring mechanism for Muck Disposal	Muck disposal sites shall be monitored on a monthly basis

- **Land Area Breakup**

Private land	125.75 Ha
Government land/Forest Land	122.28 Ha
Submergence area/Reservoir area	80 Ha which is Forest Land
Land required for project component	248.03 Ha
Additional information (if any)	-

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

Forest Land/ Protected Area/		Details of Certificate/ letter/Remarks
Reserve Forest/Protected Forest Land	Yes	Chitapari Reserved Forest
National Park	No	
Wildlife Sanctuary	No	

- **Court case detail: Nil**

- **Miscellaneous**

Particulars	Details
Details of consultant	WAPCOS Limited
Project Benefits	• Energy generation in 90% dependable flow. • Employment during project
Status of other statutory clearances	Under Process
R&R details	NA
Additional detail (If any)	-

46.5.3 The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA/EMP and Public hearing for Balimela Open Loop Pumped Storage Project (2 x 250 MW) in an area of 248.03 Ha located at Village Khilaguda, Tarapur, etc., Sub District Chitrakonda and Orkel, District Malkangiri, Odisha by M/s Odisha Hydro Power Corporation Limited.

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

- The EAC observed that the present proposal is for a 500 MW open-loop pumped storage project, wherein the existing Balimela Pumped Storage Project (PSP) envisages the utilization of the Existing Balimela reservoir as an Upper reservoir on the Sileru River together with the construction of a lower reservoir on Kharika Jhora nala. Balimela Hydro Electric Project is in operation since 1973. Upper Reservoir is already functional. The

lower reservoir has been proposed to be created near the foothill of the Balimela town. The proposed Balimela Pumped Storage Project is located within Charnockite Group of rocks (Acid to intermediate charnockite) belonging to Eastern Ghat Supergroup

- The EAC noted that the total land requirement for the project is around 248.03 Ha, out of which 125.75 Ha is non-forest land and 122.28 Ha is forest land. Diversion of forest land for non-forest purpose will be involved for construction of Project components. However, it was observed that the application for Stage-I Forest Clearance (FC) has not yet been submitted, which necessitates further action from the Project Proponent. There are No National Parks, Wildlife Sanctuaries, Biosphere Reserves, Tiger/ Elephant Reserves & Wildlife Corridors present within 10 km radius of the project site.

- The EAC noted that in the break up of land area submitted by the PP, Rock Quarry Area required 35 ha of the forest land. Therefore, it was advised by the EAC to resubmitted land details excluding forest land for rock quarrying. Accordingly, the PP vide email dated 09.01.2026 submitted revised land details, which us mentioned as under :

S.No.	Project Area	Land (Ha)		Total (Ha)
		Forest (Ha.)	Non-Forest (Ha)	
A	**Project Components**			
1	Upper Intake	2.37	2	4.37
2	Head Race Tunnel	9.91	0	9.91
3	Surge Shaft, BVC and Pressure Shaft	2.20	0	2.20
4	Power House (PH) & Transformer Cavern (TC), Horizontal pressure shaft, Draft Tube and other allied Structures at P.H. Area	2.16	0	2.16
5	Tail Race Tunnel	3.24	0	3.24
6	Main Access Tunnel (MAT), Cable cum Ventilation Tunnel, Adit to horizontal Pressure shaft, Adit to Surge Shaft bottom	13.15	0	13.15
7	Switchyard	1.00	0	1.00
8	Lower Reservoir including Submergence Area, Dam and Lower Pump Intake	75	20	95.00
	Total (A)	**109.03**	**22.00**	**131.03**
B	**Link Roads**			
1	Permanent Link Roads to Surge Shaft Top	3.75	0.00	3.75
2	Permanent Link Road to Lower dam, MAT, CAT, Switchyard & Connectivity to Malkangiri-Balimela	9.50	1.00	10.50

	Road			
3	Temporary Roads to Muck Disposal, Rock Quarry and Borrow Areas	0.00	0.75	0.75
	Total (B)	**13.25**	**1.75**	**15.00**

C	**Construction Facility/Muck Disposal**			
1	Construction Facilities Area including Stock piling yard, Fabrication yard	0	19	19.00
2	Project Office Buildings-Guest House, Field Hostel, Main Administrative Building, Residential Quarters, Store etc,	0	10	10.00
3	Crushing , Batching & Mixing Plants	0	5.00	5.00
4	Muck Disposal for HRT, Pressure Shaft, TRT, Power House, Surge Shaft and Various Adits	0	25.00	25.00
	Total (C)	**0.00**	**59.00**	**59.00**
D	Borrow Area	0.0	8.0	8.0
E	Rock Quarry Area	0.0	35.0	35.0
	Total (A+B+C+D+E)	**122.28**	**125.75**	**248.03**

- The EAC during the meeting noted that water from Balimela reservoir is being shared with Andhra Pradesh state therefore it became necessary to obtain clearance/ approval from Govt. of Andhra Pradesh.

46.5.4 The EAC based on the information submitted and as presented during the meeting, recommended the proposal for grant of Specific ToR issued by the Ministry for Open Loop Pumped Storage Projects vide OM dated 14.08.2023 for conducting EIA study for proposed construction of the project for Balimela Open Loop Pumped Storage Project (2 x 250 MW) in an area of 248.03 Ha located at Village Khilaguda, Tarapur, etc., Sub District Chitrakonda and Orkel, District Malkangiri, Odisha by M/s Odisha Hydro Power Corporation Limited, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR

[A] Environmental Management and Biodiversity Conservation:

i. The PP will submit 10 years water availability data certified by the CWC/State Water Resource Department for quantity of water that is received annually by the small stream on which upper and lower reservoir is proposed to be constructed.

ii. Detailed action plan for large scale plantation of native species of plant sapling within 10 km radius of the project shall be prepared in consultation with State Forest Department. The monitoring mechanism to ensure the survival of saplings shall be finalised in consultation with ICFRE.

iii. Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for 122.28 Ha of forest land involved in the project shall be submitted within stipulated time.

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

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

vi. Transportation Plan for transporting construction materials shall be submitted. Separate chapter for risk assessment of such transportation through/within proposed the Wildlife Sanctuary shall be included in the EIA report.

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

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

ix. Calculation and values of GHGs (CO2, CH4 etc.) emissions during construction and during operation till the life of the project shall be estimated and submitted.

x. The longitudinal connectivity/Free flowing sketch be provided in the EIA/EMP report. Presence of any critical mineral zone in the proposed area be clarified from GSI.

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

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

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

xiv. Action plan for survival or diversion of the rivulets/stream, if any, leading to join river shall be submitted.

xv. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Specific ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons.

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

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

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

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

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

[B] Socio-economic Study:

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

ii. All the tasks including conducting public hearing shall be done as per the provisions of EIA Notification, 2006 and as amended from time to time. A comparative chart of issues raised by General Public during Public Hearing and commitments made by the

Project Proponent will be prepared and submitted in the relevant chapter of EIA/EMP report.

iii. The EIA/EMP shall include a detailed socio-economic assessment of the tribal population in the project-affected area based on primary data and community consultations. A Tribal Development Plan, prepared in consultation with the District Administration and Tribal Welfare Department, shall be submitted along with the EIA report.

iv. PP shall submit the credible documents to show the status of land acquisition w.r.t project site from/through the concerned State Government as required under Ministry's O.M. dated 7th October, 2014 for the project land to be acquired.

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

[C] Muck Management:

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

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

iii. Safety measures for avoiding spill over muck into the riverbed/streams and its flow into the river during the high discharge/ flood or monsoon period. Prepare plan for stabilization of muck disposal sites using biological and engineering measures to ensure that muck does not roll down the slopes and shall be disposed safely and that it does not pollute the natural streams and water bodies in surrounding area.

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

[D] Disaster Management:

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

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

[E] Miscellaneous:

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

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

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

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

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

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

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

Agenda Item No. 46.6

Varikapudisela Lift Irrigation Scheme (CCA: 34,196Ha) in an area of 249.13 Ha located at Village Adigoppula, Atmakuru, Darivemula, etc., Sub District Veldurthi, Durgi, Macherla, Pullalacheruvu etc, District Prakasam, Palnadu and Nagarkurnool, Telangana by M/s Water Resource Department, Andhra Pradesh– Terms of References (TOR) – reg.

[Proposal No. IA/AP/RIV/562845/2025 ; F. No. J-12011/47/2025-IA.I (R)]

46.6.1 The proposal is for grant of Terms of Reference (ToR) to the project Varikapudisela Lift Irrigation Scheme (CCA: 34,196Ha) in an area of 249.13 Ha located at Village Adigoppula, Atmakuru, Darivemula, etc., Sub District Veldurthi, Durgi, Macherla, Pullalacheruvu etc, District Prakasam, Palnadu and Nagarkurnool, Telangana by M/s Water Resource Department, Andhra Pradesh.

46.6.2 The Project Proponent and the accredited Consultant M/s.SV Enviro Labs & Research Private Limited (formerly known as SV Enviro Labs & Consultants), made a detailed Presentation on the salient features of the project and informed that:

i. Varikapudisela lift irrigation scheme is proposed to lift and draw water from Varikapudisela vagu (stream) in Palnadu district of Veldurthy mandal and use it to irrigate the mandals of Veldurthy, Durgi, Macherla, Karempudi mandals. The total ayacut of the project is about 84,500 acres covering Veldurthi, Durgi, Karempudi and Macherla mandal of Palnadu District.

ii. The proposed command area of L.I scheme is a part of chronically drought-stricken, rainshadow region of Palnadu area with an average annual rainfall of 634 mm. In light of the above, climatic, demographic conditions and socio-economic conditions, the farmers of the area are in dire need of assured drinking water and irrigation supply for their livelihoods. The overall agricultural output of the area, region and state can be substantially improved thereby contributing to the nation's prosperity.

iii. The proposed project is a lift irrigation scheme to provide water for irrigation to an ayacut of 84,500 acres (34,196 Ha) and drinking water needs in Veldurthi, Durgi, Karempudi, Macherla Mandal of Palnadu district (erstwhile Guntur District).

iv. **Background:**

a) The farmers of Veldurthi, Uppalapadu, Gangulakunta, Gottipalla, Sirigiripadu, Bodilaveedu and Loyapalli villages in Veldurthi Mandal of Palnadu district (erstwhile Guntur District), Andhra Pradesh have represented the then Hon'ble Chief Minister of Andhra Pradesh to create source of water for irrigating an ayacut of about 24900 acres (10076 Ha) through a lift irrigation scheme.

b) The then Govt. of Andhra Pradesh during the year 2007 inaugurated the Anupu, Koppunuru and Jeerivagu L.I. Schemes by tapping the monsoon flows. Similar representations were made during the inauguration of Kondaveetivagu L.I. Scheme on dt.16-09-2018.

c) Subsequently, the then Hon'ble Chief Minister has given assurance to the farmers and directed the Andhra Pradesh State Irrigation Development Corporation (APSIDC) to develop the Varikapudisela project to supply irrigation water to 24900 acres (10076 Ha) in Veldurthi, Uppalapadu, Gangulakunta, Gottipalla, Sirigiripadu, Bodilaveedu and Loyapalli villages in Veldurthi Mandal of Palnadu district (erstwhile Guntur District). Accordingly, the APSIDC has taken up preliminary investigation and observed that the

proposal is technically feasible. The Government of Andhra Pradesh accorded permission to enhance the scope to 84,500 acres instead of 24,900 Acres vide GO RT No 583 Dt 31-10-2025.

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

Latitude	16°15'59"N
Longitude	79°14'15"E

vi. **Land requirement:**

Forest Land: 19.13 Ha
Non-Forest land: 230Ha
Total =270 ha (Including 21.44 ha of CA lands)

vii. **Water requirement:** 30 KLD during construction phase

viii. **Project Cost:** The estimated project cost is Rs.3227.15 Crores as per PFR. The EMP implementation Cost and Environmental monitoring during the operation phase shall be furnished as a part of the EIA/EMP Report.

ix. **Project Benefits:**

a) The total ayacut of the project is about 34196 Ha covering Veldurthi, Durgi, Macherla and Karempudi Mandals of Palnadu district (erstwhile Guntur district)
b) Drinking water to 20000 Population.

x. **Environmental Sensitive area:** The Pump house is located in Nagarjuna Sagar Srisailam tiger reserve.

xi. **Alternative Studies:**

Parameter	**Site 1 (Jerri vagu)**	**Site.2 (Varikapudisela)**
Source	The water availability at the Jerrivagu LI Scheme is 0.27 TMC sufficient to irrigate about 3200 acres (1295 Ha)	As there is no other scheme on Varikapudisela vagu, the entire yield from this vagu can be utilized for irrigating 84,500 acres (Ha) scheme.

Elevation difference	Elevation difference between the pump house and command area is 87.78 mt. Lengths - Pressure main 6.5km Length of Gravity Main 0.00 Km length	Elevation difference between the pump house and command area is 122 mt. Lengths-Pressure main 1.25km – Two rows. Length of Gravity Main is 92.0 Km – Two rows
Muck Quantities	The quantity of muck estimated for the construction of Pump House 2800 cum, Pressure main 6250 cum	The quantity of muck estimated for the construction of Pump House 2,50,000 cum, from Pressure main about 46,000 cum and gravity main is 28,30,000 Cum is anticipated
Power Requirement	Power required to lift 0.27 TMC is 1.410 MW	Power required to lift 4.867TMC is 41.60 MW
Land Requirement		
a. Forest Land Requirement for construction of Pump House	1.83 Ha of forest area will utilized by the APSIDC	19.13 Ha of forest Land is required for which Stage-I forest Clearance has been obtained
b. Private Land	Along the Pipeline alignment the land required is 0.9 ha	Along the Pipeline alignment the land required is 230 ha
Biodiversity	The site is a part of Core zone of the Tiger reserve.	The area is within the core area of the Tiger reserve.

xii. **Details of Solid waste/ Hazardous waste generation/ Muck and its management:** Solid Waste from labor camps -100-110 Kg/day Construction debris -3175260 Cum

xiii. Status of Litigation Pending against the proposal, if any. NIL

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

- **Project Details:**

Name of the Proposal	Varikapudisela Lift Irrigation Scheme
Location (Including coordinates)	Gangulakunta (V) in Veldurthi (M) of Palnadu district (erstwhile Guntur district) 16°15'59"N 79°14'15"E (Pump house shall be located within 500 mts of above mentioned locations)
Inter-state issue involved	No
Seismic zone	II/III as per seismic zonation map of India

- **Category Details:**

Category of the project	1(c)
Provisions	--
Capacity/Cultural command area(CCA)	34196 Ha
Attracts the General Conditions(Yes/No)	Yes, Pump house is within the Nagarjuna Sagar-Srisialam tiger reserve which is a part of Rajiv Gandhi wild life sanctuary
Additional information (ifany)	Nil

- **Electricity Generation Capacity:**

Powerhouse Installed Capacity	Nil
Generation of Electricity Annually-No of Units	Nil
Additional information (if any)	Not Applicable as hydropower is not proposed

- **ToR/EC Details**

Cost of project	Rs. 3227.15Crores
Total area of Project	270.5 ha (including CA Lands)
Height of Dam from River Bed (EL)	Not Proposed
Length of Tunnel/Channel	Not Proposed
Details of Submergence area	No area will be under submergence as the proposed project involves setting up of pump house on the bank of Varikapudisela vagu and laying of a pipeline.

Types of Waste and quantity of generation During construction/Operation	Solid Waste from labor camps -100-110 Kg/day Construction debris -3175260 Cum
E-Flows for the Project	15%
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then	Details will be furnished in EIA Report
a) E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Basin.	
a) If not the E-Flows maintain criteria for sustaining river ecosystem.	
b) No.of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	

- **Muck Management Details:**

No.of proposed disposal area/(type of land-Forest/Pvt.land)	Details shall be furnished in the EIA/EMP report
Muck Management Plan	Details shall be furnished in the EIA/EMP report
Monitoring mechanism for Muck Disposal	Details shall be furnished in the EIA/EMP report

- **Land Area Break-up:**

Private land	230 Ha
Government land	
Forest Land	19.13 Ha
Total Land	270.5 (Including 21.44 Ha Of CA lands)
Submergence area/Reservoir area	Nil
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	Gangulakunta Beat Comp No.67, Gottipalla Beat Comp No,68 of Gangulakunta RF, V.p.South Range & Rajiv Gandhi wildlife sanctuary
National Park	No	
Wildlife Sanctuary	Yes	

- **Court Case Details: Nil**

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

Particulars	Letter no.and date
Certified EC compliance report (if applicable)	Not Applicable
Status of Stage-IFC	Obtained
Additional detail (If any)	Letter dated 6.11.2023., F.No 4-APC133/2021-VIJ/1372
Is FRA(2006)done for FC-I	No

- **Miscellaneous**

Particulars	Details
Details of consultant	SV Enviro Labs & Research Private Limited (formerly known as SV Enviro Labs & Consultants) :B1-Block –B, IDA Auto Nagar, Visakhapatnam- 530012 NABET Certificate No: NABET/EIA/25-28/RA 0394
Project Benefits	1. The total ayacut of the project is about 34196 Ha covering Veldurthi, Durgi, Macherla and Karempudi Mandals of Palanadu District (erstwhile Guntur District). 2. Drinking water provision to about 20000 people shall be made
Status of other statutory clearances	Shall be obtained
R&R details	No R &R is required as the project does not involve displacement of any population

Additional detail (If any)	Nil

46.6.4 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 Varikapudisela Lift Irrigation Scheme (CCA: 34,196Ha) in an area of 249.13 Ha located at Village Adigoppula, Atmakuru, Darivemula, etc., Sub District Veldurthi, Durgi, Macherla, Pullalacheruvu etc, District Prakasam, Palnadu and Nagarkurnool, Telangana by M/s Water Resource Department, Andhra Pradesh.

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: 34196 ha). However, the project is falling under Rajiv Gandhi Wildife Sanctuary and Telangana Interstate border is 0.88 km from the project site hence, it requires appraisal at the Central level by the Expert Appraisal Committee (EAC).

The EAC observed that the proposed command area of L.I scheme is a part of chronically drought-stricken, rain-shadow region of Palnadu area with an average annual rainfall of 634. mm. LIS is to provide ayacut to 34196 Ha, are covered in10 Villages of Durgi Mandal, 3238 Ha are covered in 3 Villages of Macherla Mandal, and 1748 Ha in 3 Villages of Karempudi Mandals of Macherla Constituency. About 25 villages get irrigation sources and about 20,000 people gets drinking water. The water requirement for the proposed LI Scheme is 4.86 TMC* for 16 hours pumping considering 4 months (120 days) crop period from September to December.

The Committee observed that in the total land required for the total land requirement for the project is 249.13 ha of which 19.13 ha is forest land while 230 ha is non-forest land. It was further observed that Stage- I Forest Clearance for 19.13 Ha has been granted by the Regional Office, MoEF&CC vide letter no. 4-APC133/2021-VIJ dated 06/11/2023.

The EAC also noted that the project proposed is project is falling under Rajiv Gandhi Wildife Sanctuary and the forest department of Government of Andhra Pradesh vide its letter no.21024/48/2020/WL-2 dated 31.05.2023 has informed that Standing committee of the National Board for Wildlife has recommended the proposal.

46.6.4 The EAC based on the information submitted and as presented during the meeting, recommended the proposal for grant of Standard ToR issued by the Ministry for conducting EIA/EMP study with Public consultation for Varikapudisela Lift Irrigation Scheme (CCA: 34,196Ha) in an area of 249.13 Ha located at Village Adigoppula, Atmakuru, Darivemula, etc., Sub District Veldurthi, Durgi, Macherla, Pullalacheruvu etc, District Prakasam, Palnadu and Nagarkurnool, Telangana by M/s Water Resource Department, Andhra Pradesh, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR.

[A] Environmental Management and Biodiversity Conservation:

i. Necessary inter-state clearances/ approvals shall be obtained from respective authorities / State Govt.

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

iii. A detailed wildlife conservation plan for Schedule –I species along with mitigation measures for minimizing the human–animal conflict, duly approved by the Chief Wildlife Warden, be submitted. NBWL recommendations shall be submitted along with EIA/EMP report.

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

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

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

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

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

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

x. Muck disposal site and other components such as Township, site office, Stacking area

and batching plant shall be located outside the forest area.

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

[B] Socio-economic Study:

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

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

iii. All the tasks including conducting public hearing shall be done as per the provisions of EIA Notification, 2006 and as amended from time to time. Public hearing issues raised and compliance of the same shall be incorporated in the EIA/ EMP report in the relevant chapter.

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

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

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

[C] Muck Management:

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

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

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

[D] Miscellaneous:

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

shall be submitted.

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

iii. Undertaking need to submitted on affidavit that regarding no activities has been yet started on the project site and water allocated to this scheme shall not be diverted to other purpose.

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

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

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

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

Agenda Item No. 46.6

Rajupalem Close loop Pumped Storage Project (800 MW) in an area of 334.8 Ha located at Village Musalreddipalle, Reddicherla, etc, Sub District Kalasapadu, Komarolu and Porumamilla, District Y.S.R. and Prakasam, Andhra Pradesh by M/s APGENCO NHPC Green Energy Limited – Terms of References (TOR) – reg.

[Proposal No. IA/AP/RIV/562968/2025; F. No. J-12011/45/2025-IA.I (R)]

46.6.1 The proposal is for grant of Terms of Reference (ToR) to the project Rajupalem Close loop Pumped Storage Project (800 MW) in an area of 334.8 Ha located at Village Musalreddipalle, Reddicherla, etc, Sub District Kalasapadu, Komarolu and Porumamilla, District Y.S.R. and Prakasam, Andhra Pradesh by M/s APGENCO NHPC Green Energy Limited.

46.6.2 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. APGENCO NHPC Green Energy Limited (ANGEL), a joint venture company of APGENCO and NHPC has planned to undertake the development of Rajupalem pumped storage project (PSP), located near Mulapalle village, Komarolu Taluka of Prakasam district in Andhra Pradesh state.

ii. Rajupalem PSP is an Off- stream Closed Loop pumped storage scheme with an installed capacity of 800 MW. The scheme of operation considered for the project is daily regulation with 1.5 cycles per day. Accordingly, the plant will meet the demand of about 9.18 hours of peak power daily. Off-peak pumping hours are considered as 10.33 hours daily.

iii. Water will be pumped up to the upper reservoir in pumping mode during off-peak periods. A daily cycle of operation has been proposed for the scheme and it is found that about 9.10 Mm3 of net storage is required for one cycle of the project.

iv. The upper dam is located within the Giddalur (Block II) Reserved Forest area within the administrative boundary of Komarolu Taluka, Prakasam district with the geographical latitude of 15° 12' 51.7" N and longitude of 78° 57' 28.2" E. The lower dam is located in Mulapalle village, Komarolu Taluka, Prakasam district of Andhra Pradesh state having a geographical latitude 15° 12' 48.9" N and longitude 78° 58' 19.5" E.

v. **Land requirement:** The total land required for the construction of various components and related works for Rajupalem PSP is estimated to be around 334.80 ha, out of which 261.50 ha is non-forest land and 73.30 ha is forest land.

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

- Villages within the study area are small, scattered, and primarily agrarian. Population density is low compared to state averages.
- Habitation in the area is mainly comprised of Schedule Caste population represented by Madiga and Mala. Local communities follow traditional customs and festivals, with strong dependency on natural resources.
- The village has a close-knit social life, including the extended family, traditional festivals such as Pedda Panduga and Vijayadashami, folk dances, music and oral stories. Village councils and elders guide local governance.
- Subsistence farming, horticulture, livestock rearing, and wage labour constitute the primary sources of income for the villagers.
- In addition to paddy, bajra & maize cultivation, cash crops such as ground nut, sesame and castor are also grown extensively by the local communities.

Parameters	**Suravari Palle**	**Bedusu Palle**	**Brahmana Palle**	**Reddicherla**	**Allinagaram**
Households	280	74	179	1373	535
Total Population	989	257	621	5141	2127
Male Population	486	134	311	2605	1103

Female Population	503	123	310	2536	1024
Scheduled Caste (SC)	369	83	222	1061	391
Scheduled Tribe (ST)	0	0	7	62	11

(Source: Census 2011; Mission Antyodaya 2020)

- The demographic profile of the villages surrounding the project area indicates that Reddicherla has the highest total population (5141) with 1373 households.
- Tharve Bedusu Palle is the smallest settlement with a population of 257 and 74 households.
- All villages show a near-even split between male and female populations, with one location (Suravari Palle) having a slightly higher number of females compared to males.
- Scheduled Caste (SC) populations constitute the dominant group in almost all villages, whereas Scheduled Tribe (ST) communities form the majority in Reddicherla village (62) within the area.

vii. **Water requirement:** Rajupalem Pumped Storage Project will require 15.40 MCM for one time filling and thereafter ~ 3.0 MCM per year will be required. Water will be pumped from existing left bank canal of Sri Pothuluri Veera Brahmendra Swamy (SPVB) reservoir, which is one of the major components of Telugu Ganga Project (TGP). The intake location for drawl of water (existing canal head regulator at Ch. 44.3KM or from Porumamilla Tank) will be finalized as per recommendations of Water Resources Department.

viii. **Project Cost:** The estimated project cost is Rs 3798 crore. Total capital cost earmarked towards environmental pollution control measures will be worked out during EIA study as well as the Recurring cost (operation and maintenance).

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

x. **Environmental Sensitive area:** Nagarjunasagar Srisailam Tiger Reserve (Core Zone) is about 21.0 km from project area. All the components of the project are outside the ESZ boundary. ESZ boundary is notified vide notification S.O.4373(E) dated 18th October 2021; therefore, Wildlife clearance is not applicable.

xi. Alternative Studies: Twenty Four (24) potential reservoir sites have been identified within the study area. Various combinations of above reservoir sites have been studied to identify potential alternative layouts that could be considered for the project for further evaluation.

The alternatives have been eliminated based on ***Administrative & Environmental and technical criteria.*** The following eight (8) alternatives have been shortlisted for further evaluation in the next stage:

- ✓ Alternatives - 2 and 3 (with R_1 as common upper reservoir)
- ✓ Alternative - 5 with R_2 as upper reservoir
- ✓ Alternatives - 6 and 8 (with R_4 as common upper reservoir)
- ✓ Alternative - 9 with R_11 as upper reservoir
- ✓ Alternative - 10 with R_17 as upper reservoir
- ✓ Alternative - 12 with R_25 as upper reservoir

The weightage score for each alternative has been calculated using a set of technical parameters (i.e., capacity, head, head ratio, L / H ratio, length and height of upper and lower dams and geological suitability) and environmental parameters (i.e., WLS, forest area, R & R issues).

The top ranked two sites, viz., Alt - 3 and Alt - 10 were further evaluated based on additional information gathered during site visit and a techno-economic comparison was made to finalize the most suitable alternative for the project.

S. No.	Description / Parameter	Alt - 3	Alt - 10
1.	Upper Dam / Reservoir	R_1	R_17
a)	FRL	RL 820.00 m	RL 495.00 m
b)	Dam length	1750 m	1270 m
c)	Dam height	88 m	55 m
d)	Gross storage	6.00 Mm3	8.20 Mm3
2.	Lower Dam / Reservoir	R_18	R_22
a)	FRL	RL 455.00 m	RL 270.00 m
b)	Dam length	320 m	1585 m
c)	Dam height	57 m	14 m
d)	Gross storage	8.90 Mm3	6.70 Mm3
3.	Gross Head, H	365 m	225 m
4.	Plan length of WCS, L	1900 m	1040
5.	L / H Ratio	5.2	4.6
6.	Head ratio	1.30	1.25

7.	Installed capacity	850 MW	550 MW
8.	Geology	Good (Quartzite)	Fair (Quartzite & Shale)
9.	**Weighted Score**	**71.0**	**73.5**
10.	Overall Ranking	2	1
11.	Source of Water		
a)	Location	Sagileru River (Upper Sagileru dam)	Left banak canal of SPVB reservoir
b)	Water transfer scheme	Pumping in 2 stages	Single stage pumping
c)	Pumping scheme	**Stage I**: Lifting water from upper Sagileru dam to Thamaballa Palle Cheruvu over a length of 6 km with a static head of 55 m. **Stage II:** Lifting water from Thamaballa Palle Cheruvu to proposed lower reservoir over a length of 8 km with a static head of 200 m	Lifting water from canal a length of 26km with a static head of 83 m
d)	RW pipeline	14 km	26 km
e)	Pumping head	275 m	151 m
12.	Environmental Aspects		
a)	Land category	Forest	Forest & private lands
b)	Forest area (reservoirs)	117 Ha	37 Ha
c)	Access	Poor	Good

- Based on overall evaluation and observations made during the site visit, it is found that the Alternative 10 is techno-economically and environmentally a better alternative compared to Alternative 3.
- Further, head available, geological conditions and installed capacity of Alternative - 10 is found to be lesser when compared to the other alternative.
- Since, head available and geological aspects of the site cannot be enhanced / modified, an attempt has been made to enhance the installed capacity of Alt 10 to improve the project viability.
- The capacity of the scheme has been further maximized by adopting twin water conductor system and increasing the dam height to facilitate additional storage required for higher installed capacity.
- Accordingly, the installed capacity of the finalized alternative (Alt - 10) has been fixed at 800 MW (4 x 200 MW).
- Considering the deep excavation and high CAPEX involved in the project, surface powerhouse option is not recommended.
- The option of underground powerhouse for the finalized layout of Alternative - 10 has been recommended to be adopted for the project.

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

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

- **Project Details:**

Name of the Proposal	Rajupalem Pumped Storage Project
Location (Including coordinates)	Lower Reservoir : Latitude: 15°12' 48.9" N Longitude: 78° 58' 19.5" E Upper Reservoir : Latitude: 15° 12' 51.7" N Longitude: 78° 57' 28.2" E
Inter- state issue involved	No
Seismic zone	Zone-II

- **Category Details:**

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

- **Electricity Generation Capacity:**

Powerhouse Installed Capacity	800 MW
Generation of Electricity Annually	2546 MU
No. of Units	4 nos. (4 x 200 MW)
Additional information (if any)	Nil

- **ToR/EC Details:**

Cost of project	3798 Cr.
Total area of Project	334.8 ha
Height of Dam from River Bed (EL)	Lower Dam – 15.0 m Upper Dam –82.0 m
Length of Tunnel/Channel	2200 m (Total length)

Details of Submergence area	284.60 ha
Types of Waste and quantity of generation during construction/ Operation	Muck from excavation, solid waste from labour colony and construction waste
E-Flows for the Project	Not Applicable, as this is Closed Loop Pumped Storage Project (PSP)
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then a) E-flow with TOR /Recommendation by EAC as per CIA&CC study of River Basin. b) If not the E-Flows maintain criteria for sustaining river ecosystem.	No
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	500

- **Muck Management Details:**

No. of proposed disposal area/ (type of land- Forest/Pvt. land)	20 ha (Non-Forest Land)
Muck Management Plan	Will be Provided in EIA/EMP report
Monitoring mechanism for Muck Disposal	Will be Provided in EIA/EMP report

- **Land Area Breakup:**

Private Land	261.50 ha
Government land	-
Forest Land	73.30 ha
Total Land	334.80 ha
Submergence area/Reservoir area	284.60 ha
Additional information (if any)	Nil

- **Presence of Environmentally Sensitive areas in the study area:**

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate / letter/ Remarks**
Reserve Forest/Protected Forest Land	--	• Nagarjunasagar Srisailam Tiger Reserve (Core Zone) is about 21.0 km from project area.
National Park	--	
Wildlife Sanctuary	--	

		• All the components of the project are outside the ESZ boundary. ESZ boundary is notified vide notification S.O.4373(E) dated 18th October 2021; therefore, Wildlife clearance is not applicable.

- **Court Case Details: Nil**
- **Previous EC Compliance and necessary approvals:**

Particulars	**Letter no. and date**
Certified EC compliance report (if applicable)	Not Applicable
Status of Stage- I FC	Yet to Apply
Additional detail (If any)	Nil
Is FRA (2006) done for FC-I	Yet to Apply

- **Miscellaneous:**

Particulars	**Details**
Details of consultant	M/s. R S Envirolink Technologies Pvt. Ltd. (RSET) (*NABET* Accredited *Consultant Organization*) Certificate No : NABET/EIA/25-28/RA0415 Validity : August 15, 2028 Contact Person : Mr. Ravinder Bhatia Name of Sector : River Valley and Hydroelectric Projects Category : A MoEF Schedule : I(C) Address : 403, Bestech Chambers, Block-B, Sushant Lok Phase I, Sector 43, Gurugram, Haryana - 122009 E-mail: ravi@rstechnologies.co.in Land Line : (0124) 4295383 Cellular : (+91) 9810136853
Project Benefits	Pumped storage hydropower is a modified use of conventional hydropower technology to store and manage energy or electricity by moving water between an upper and lower reservoir. Currently, pumped storage round-trip or cycle energy efficiencies exceed 80%, comparing favorably to other energy storage technologies and thermal technologies. This

	effectively shifts, stores, and reuses energy generated until there is corresponding demand for system reserves and variable energy integration. This shifting can also occur to avoid transmission congestion periods, to help more efficiently manage transmission grid, and to avoid potential interruptions to energy supply. This is important because many of the renewable energy resources being developed (e.g., wind and solar) are generated at times of low demand and off-peak energy demand periods are still being met with fossil fuel resources, often at inefficient performance levels that increase the release of greenhouse gas emissions. • Further, pumped storage projects are critical to the national economy and overall energy reliability because it's: o Least expensive source of electricity, not requiring fossil fuel for generation o An emission-free renewable source o Balancing grid for demand driven variations o Balancing generation driven variations o Voltage support and grid stability art from this, proposed PSP will also benefit the local community by creating employment opportunities and will result in upliftment of livelihood and socio-economic conditions.
Status of other statutory clearances	Forest Clearance - Online application seeking forest diversion for around 73.30 Ha after receipt of ToR Approval. Alongside, other statutory clearances (as applicable) from State as well as Central government will be obtained post completion of Detailed Project Report.
R&R details	Details shall be evaluated during EIA/EMP Studies
Additional detail (If any)	Nil

46.7.3 The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of TOR for conducting EIA/EMP and Public hearing for Rajupalem Close loop Pumped Storage Project (800 MW) in an area of 334.8 Ha located at Village Musalreddipalle, Reddicherla, etc, Sub District Kalasapadu, Komarolu and Porumamilla, District Y.S.R. and Prakasam, Andhra Pradesh by M/s APGENCO NHPC Green Energy Limited.

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

- The EAC observed that the Rajupalem PSP is proposed to generate 800 MW comprises of Upper and Lower reservoir located away from riverine system and therefore it is treated as a close loop PSP. The water required for initial filling of reservoirs and recuperation of losses every year is estimated to be about 15.40 Mm^3 & 3.00 Mm^3 respectively and it is proposed to be drawn from the existing left bank canal of Sri Pothuluri Veera Brahmendra Swamy (SPVB) reservoir, which is one of the major components of Telugu Ganga Project (TGP) located in kalasapadu Taluka of YSR district of Andhra Pradesh. The intake location for drawl of water (existing canal head regulator at Ch. 44.3KM or from Porumamilla Tank) will be finalized as per recommendations of Water Resources Department.

- The EAC noted that the total land requirement for the Rajupalem PSP is estimated to be around 334.80 ha, out of which 261.50 ha is non-forest land and 73.30 ha is forest land. Diversion of forest land for non-forest purpose will be involved for construction of project components. However, it was observed that the application for Stage-I Forest Clearance (FC) has not yet been submitted, which necessitates further action from the Project Proponent. The Nagarjunasagar Srisailam Tiger Reserve (Core Zone) is about 21.0 km from project area. All the components of the project are outside the ESZ boundary. ESZ boundary is notified vide notification S.O.4373(E) dated 18th October 2021.

- It has been observed that In-principle approval for implementation of project by M/s APGENCO NHPC Green Energy Limited has been allotted by the Government of Andhra Pradesh vide its letter dated 29.11.2024.

46.7.4 The EAC based on the information submitted and as presented during the meeting, recommended the proposal for grant of Specific ToR issued by the Ministry for close Loop Pumped Storage Projects vide OM dated 14.08.2023 for conducting EIA study for proposed construction of the project for Rajupalem Close loop Pumped Storage Project (800 MW) in an area of 334.8 Ha located at Village Musalreddipalle, Reddicherla, etc, Sub District Kalasapadu, Komarolu and Porumamilla, District Y.S.R. and Prakasam, Andhra Pradesh by M/s APGENCO NHPC Green Energy Limited, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:

[A] Environmental Management and Biodiversity Conservation:

i. A detailed action plan for large scale plantation of native species of plant sapling within 10 km radius of the project shall be prepared in consultation with State Forest Department. The monitoring mechanism to ensure the survival of saplings shall be finalized in consultation with ICFRE.

ii. The PP will submit 10 years water availability data certified by the CWC/State Water Resource Department for quantity of water that is received annually by the small stream on which lower reservoir is proposed to be constructed.

iii. Necessary interstate clearance/approval shall be obtained before submitting the application of Environmental Clearance.

iv. The PP will submit a detailed plan and monitoring mechanism for releasing the self - catchment water of small stream draining in to river along with action plan for conservation and protection of other streams/rivulets draining in to upper and lower reservoirs.

v. Explore the possibilities for reducing the Forest land requirement. The application for obtaining Stage I FC for 73.30 ha of forest land involved in the project shall be submitted within stipulated time.

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

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

viii. Transportation Plan for transporting construction materials shall be submitted. Separate chapter for risk assessment of such transportation through/within proposed the Wildlife Sanctuary shall be included in the EIA report.

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

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

xi. Calculation and values of GHGs (CO_2, CH_4 etc.) emissions during construction and

during operation till the life of the project shall be estimated and submitted.

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

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

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

xv. In case any other project is present on the river, Cumulative Impact of projects in the basin on carrying capacity and sustainability of Reservoir/ River /nala of catchment area due to tapping of water for filling reservoir shall be studied.

xvi. Action plan for survival or diversion of the rivulets/stream, if any, leading to join river shall be submitted.

xvii. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Specific ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons.

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

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

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

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

GSI/NMDC.

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

[B] Socio-economic Study:

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

ii. All the tasks including conducting public hearing shall be done as per the provisions of EIA Notification, 2006 and as amended from time to time. A comparative chart of issues raised by General Public during Public Hearing and commitments made by the Project Proponent will be prepared and submitted in the relevant chapter of EIA/EMP report.

iii. The EIA/EMP shall include a detailed socio-economic assessment of the tribal population in the project-affected area based on primary data and community consultations. A Tribal Development Plan, prepared in consultation with the District Administration and Tribal Welfare Department, shall be submitted along with the EIA report.

iv. PP shall submit the credible documents to show the status of land acquisition w.r.t project site from/through the concerned State Government as required under Ministry's OM dated 7th October, 2014 for the project land to be acquired.

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

[C] Muck Management:

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

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

iii. Safety measures for avoiding spill over muck into the riverbed/streams and its flow into

the river during the high discharge/ flood or monsoon period. Prepare plan for stabilization of muck disposal sites using biological and engineering measures to ensure that muck does not roll down the slopes and shall be disposed safely and that it does not pollute the natural streams and water bodies in surrounding area.

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

[D] Disaster Management:

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

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

[E] Miscellaneous:

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

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

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

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

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

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

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

applicable.

Agenda Item No. 46.8

Demwe Lower Hydroelectric Project (1750 MW) in an area of 1589.97 Ha located at Sub District Tezu HQ, Hayuliang ADC and Wakro Circle, District Anjaw and Lohit, Arunachal Pradesh by M/s Greenko Demwe Power Limited- Validity Extension of EC – reg.

[Proposal No. IA/AR/RIV/562775/2025; F. No. J-12011/4/2008-IA.I]

46.8.1 The proposal is for grant of validity extension of environmental clearance (EC) of Demwe Lower Hydroelectric Project (1750 MW) in an area of 1589.97 Ha located at Sub District Tezu HQ, Hayuliang ADC and Wakro Circle, District Anjaw and Lohit, Arunachal Pradesh by M/s Greenko Demwe Power Limited.

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

i. The proposed Demwe Lower Hydroelectric Project falls in the foothills of Lohit basin and is proposed on the river Lohit, a tributary of mighty Brahmaputra in Lohit District of Arunachal Pradesh.

ii. The project envisages construction of a 474.35 m Concrete Gravity Dam from the riverbed level across river Lohit to generate 1750 MW of hydropower. The total land requirements for the various activities have been estimated as 1589.97 ha. In which Non Forest Land 174.05 ha and Forest land 1415.92 ha. A total 204 families will be affected due to this project out of which 240 families will be displaced.

iii. The minimum distance from main river Lohit to the Sanctuary is around 4.12 km along the Lang river. The FRL/MWL of Demwe Lower was fixed in such a way that no submergence occurs in the Kamlang Wildlife Sanctuary, which is at an aerial distance of about 9.3 km from Sanctuary.

iv. The total estimated cost of the project is about Rs. Rs. 8347.89 Crores and likely to be completed in 60 months.

v. The Environmental Clearance was accorded by MoEF&CC on 12th Feb, 2010 with validity till Feb 2020 subject to various conditions. Subsequently, extension of EC Validity has been granted to 1750 MW Demwe Lower HEP vide letter J-12011/04/2018-IA-I (Pt.1) dated 22nd July, 2020 for 3 years. Further, the MoEF&CC on 19.11.2025 transferred the EC from Athena Demwe Power Ltd (ADPL) to Greenko Demwe Power Ltd.

vi. The final forest clearance was issued by Government of Arunachal Pradesh on 26th July, 2013. On 4th April, 2014, in the appeal filed against the Forest Clearance by an Assam based NGO – North East Affected Area Development Society, Hon'ble NGT directed status quo on tree felling due to which construction of the Project could not be commenced. Hon'ble NGT vide its final Order dated 24th October, 2017, i.e. after more than 42 months, dismissed the appeal and directed the Standing Committee of NBWL to reconsider the issue relating to the Demwe Lower HEP and pass appropriate orders. NGT directed that till such orders are passed by NBWL, the forest clearance shall stand suspended.

vii. Pursuant to directions of Hon'ble NGT, the Standing Committee of NBWL considered the Project in its meeting held on 7th September, 2018 and recommended the Proposal for commencement of construction of the Dam subject to the submission of certain undertakings by the Project Proponent and commissioning of a Study on 'Geospatial Analysis of Impacts of Lower Demwe Hydroelectric Project on the Riverine Ecosystems of Lohit Basin'. However, due to ongoing litigation before Hon'ble NCLT, the conditions stipulated by NBWL were not complied by the previous company i.e Athena Demwe Power Limited and as such the Forest Clearance remained under suspension. Thus, a period of around 3 years, 6 months, 22 days was lost due to the Stay Order issued by Hon'ble NGT on 4th April 2014 till disposal of case on 24th Oct, 2017.

viii. Further, one of the lenders i.e. Indian Bank, from whom a loan had been availed by Athena Demwe Power Ltd, declared the Company as NPA and filed a petition under Insolvency and Bankruptcy Code, 2016 (IBC) before Hon'ble National Company Law Tribunal (NCLT), New Delhi, for resolution of their dues. Vide NCLT Order dated 28th September 2017, Corporate Insolvency & Resolution Process (CIRP) under Insolvency and Bankruptcy Code, 2016 (IBC) commenced thereby further impacting progress of the Project.

ix. CIRP is a time bound process as per the IBC, 2016 and was expected to be completed within 270 days from submission of the Resolution Plan. The Resolution Plan was approved by the Committee of Creditors within the said timelines stipulated under the IBC and submitted to the NCLT for approval on 25th June, 2018. However, one of the unsuccessful bidders challenged its disqualification by Committee of Creditors and filed an application before Hon'ble NCLT. The said litigation was prolonged and eventually got concluded upon issue of final Order by NCLT on 18th March, 2025 approving the Resolution Plan submitted by Greenko Energies Pvt Ltd.

x. The EAC in its 43rd meeting held on 7th March, 2023, noted as below:

"……*As per the Notification S.O. 1807(E) dated 12.04.2022, the environmental clearance granted to River valley projects shall be valid for a period of thirteen years. Also, the Ministry vide OM no. IA3-22/10/2022-IA.III [E 177258] dated 11.04.2022 has clarified that the validity period of the prior EC granted (after Stage-I FC), shall be*

reckoned from the date of grant of Stage-II FC, or a maximum period of two years, whichever is less.

The EAC observed that in view of OM dated 11.04.2022, the validity of existing EC will start from 12.02.2012 (after maximum period of two year) and as per the Notification dated 12.04.2022, the validity of this project will be till 12.02.2025.

However, as per MoEF&CC notification S.O. 221(E) dated 18.01.2021 the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19).

The EAC after detailed deliberations found that as per the extent rules and guidelines the validity of this project is valid till 11.02.2026. Accordingly, the EAC suggested the project proponent to submit proposal before expiring of existing EC……"

xi. **Present Project Status:**

All Statutory clearances are being revalidated in favour of GDPL. Brief status is as below:-

- **CEA Concurrence:** On 19.06.2025, letter submitted to CEA for revalidating / reinstating the concurrence dated 20.11.2009 accorded by CEA. GOAP vide letter dated 10.07.2025 has also recommended to CEA for the same. There is no change in project layout and design floods, only Hydrology and Power potential are under validation as up to date data has now been incorporated.

- **SPV Name Change:** With effect from 12.08.2025, the name of the SPV has been changed from 'Athena Demwe Power Ltd' to 'Greenko Demwe Power Ltd' (GDPL). GOAP vide letter dated 10.11.2025 has conveyed no objection for the name change for the purpose of facilitating revalidation / reinstatement of clearances granted to the Project by other Authorities.

Transfer of Environmental Clearance: MOEF vide letter dated 19.11.2025 has approved for transfer of EC in the name of GDPL.

- **Forest Clearance:** Forest Clearance was under abeyance by Order of NGT pending re-visit by the Standing Committee of National Board of Wild Life (SC-NBWL) of the approval granted by it. The SC-NBWL reviewed the matter in 2018 and recommended the proposal for construction of the Project subject award of a study on Geospatial Analysis of Impacts of Lower Demwe Hydroelectric Project on the Riverine Ecosystems of Lohit Basin to be carried out in parallel to the project construction.

  GDPL has awarded the said Study to Wildlife Institute of India, Dehradun and with this, the Stay on Forest Clearance is liable to be revoked. GDPL has apprised the same to the State Forest Department vide letter dated 28.11.2025.

GDPL has also issued a separate letter dated 28.11.2025 to State Forest Dept requesting for allowing payment of CAT Plan payment in 3 instalments and also for taking up with MoEF&CC for allowing commencement of project construction pending release of CAT Plan payments as per the approved instalments. This is under consideration of the State Forest Department.

- **SPV name change in Wildlife Clearance:** On 08.12.2025, GDPL has written to MoEF&CC requesting transfer of Wildlife clearance in the name of GDPL. This is likely to come up in the next meeting of NBWL in January 2026.

- **Consent to Establish:** APSPCB vide letter dated 19.12.2025 has granted Fresh CTE with a validity of 2 years.

46.8.3 The EAC during deliberations noted the following:

- The proposal is for validity extension of Environmental Clearance of Demwe Lower Hydroelectric Project (1750 MW) in an area of 1589.97 Ha located at Sub District Tezu HQ, Hayuliang ADC and Wakro Circle, District Anjaw and Lohit, Arunachal Pradesh by M/s Greenko Demwe Power Limited.

- The project is listed at S.N.1(c) of the Schedule to the Environment Impact Assessment (EIA) Notification under category 'A' and are appraised at Central Level by Expert Appraisal Committee (EAC).

- The EAC observed that Environmental Clearance was accorded by MoEF&CC on 12th Feb, 2010 with validity till Feb 2020 subject to various conditions. Subsequently, extension of EC Validity granted by MoEF&CC to 1750 MW Demwe Lower HEP vide letter J-12011/04/2018-IA-I (Pt.1) dated 22nd July, 2020 for 3 years. The EAC considered the proposal for validity extension of EC in its 43rd meeting held on 7th March, 2023 wherein it was observed that as per the extent rules and guidelines the validity of this project is valid till 11.02.2026. Further, the MoEF&CC on 19.11.2025 transferred the EC from Athena Demwe Power Ltd (ADPL) to Greenko Demwe Power Ltd.

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

- Additionally, as per MoEF&CC OM no. IA3-22/22/2025-IA.III dated 30.10.2025 the Ministry has clarified that the following time period during which the project proponent was unable to implement the EC granted for the related Project/Activities shall be treated as a zero period for calculating the validity of the EC:

(a) Duration of stay orders of the competent Courts leading to non- implementation of the Projects/Activities for which EC had been duly granted and in respect of which the Project Proponent/Applicant shall provide necessary documentary evidence;

(b) Duration of pendency before NCLT till the Resolution Plan is approved by NCLT and Project/Activity is handed over to the successful Resolution Applicant (New Management/Bidder) and in respect of which the Project Proponent /Applicant shall provide necessary documentary evidence;

or

(c) Duration of pendency before NCLT till the Liquidator selects the new bidder following due process as part of the liquidation proceedings and NCLT approves the concerned sale or scheme and confirms the transaction of payment and in respect of which the Project Proponent /Applicant shall provide necessary documentary evidence.

The aforesaid O.M. also clarifies that in the event that the period lost in litigation or in NCLT proceedings, as mentioned above, is more than three years, the concerned State Pollution Control Board or Pollution Control Committee shall add appropriate environmental safeguards, as deemed appropriate, in the Consent to Operate (CTO) conditions based on the changes in the site conditions that may have taken place during this period and taking into account the need for installation of appropriate pollution control, prevention and abatement measures that may be necessitated.

- The committee noted that due to stay on tree felling as directed by Hon'ble NGT on 04.04.2014 till disposal of case in 24.10.2017 and insolvency proceedings before Hon'ble NCLT from 28.09.2017 to 18.03.2025, almost 10 years, 11 months, 14 days (after adjusting overlapping period of around 25 days between disposal of case by NGT in Oct, 2017 and commencement of NCLT proceedings in Sept 2017) has been lost due to which implementation of project activities could not be started.

- The EAC observed that all the relevant documents including Hon'ble NGT orders and Hon'ble NCLT order dated 18.03.2025 has been dully submitted by the project proponent along with proposal on Parivesh, therefore the EAC opined that 10 years, 11 months, 14 days years shall be considered as zero period in calculation of validity of EC.

- The EAC after detailed deliberations found that as per the extent rules and guidelines the validity of this project is valid till 25.01.2037. Accordingly, the EAC suggested the project proponent to take further necessary action as per MoEF&CC OM no. IA3-22/22/2025-IA.III dated 30.10.2025 and submit the proposal for EC validity extension before expiry of existing EC.

The EAC, therefore ***returned*** the proposal in present form.

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

ANNEXURE

ATTENDANCE

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

APPROVAL OF THE CHAIRMAN

========== Forwarded message ==========
From: Chakrapani GovindaJoseph <govind.chakrapani@es.iitr.ac.in>
To: "Yogendra Pal Singh"<yogendra78@nic.in>
Date: Wed, 21 Jan 2026 11:29:43 +0530
Subject: Re: Draft MOM of 46th EAC meeting held on 09.01.2026-reg.
========== Forwarded message ==========

Approved.
Chakrapani

From: "Yogendra Pal Singh" <yogendra78@nic.in>
To: "Chakrapani GovindaJoseph" <govind.chakrapani@es.iitr.ac.in>
Sent: Wednesday, January 21, 2026 11:05:21 AM
Subject: Fwd: Draft MOM of 46th EAC meeting held on 09.01.2026-reg.

Dear Sir,

After discussion with you, the comments suggested by the members have been incorporated suitably in the MoM of the above mentioned EAC meeting. Accordingly, the updated draft MoM is attached herewith for approval please.
With Regards,

Yogendra Pal Singh
Scientist 'F'
Government of India
M/o Environment, Forest and Climate Change
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