सत्यमेव जयते

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

Minutes of 40TH MEETING OF THE EXPERT APPRAISAL COMMITTEE meetin g River Valley and Hydroelectric Projects held from 26/09/2025 to 26/09/2 025 **Date:** 09/10/2025

MoM ID: EC/MOM/EAC/298184/9/2025

Agenda ID: EC/AGENDA/EAC/298184/9/2025

Meeting Venue: N/A

Meeting Mode: Virtual

Date & Time:

26/09/2025	10:30 AM	02:30 PM

1. Opening remarks

The 40th 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 virtual mode, under the Chairmanship of Prof. G. J. Chakrapani.

2. Confirmation of the minutes of previous meeting

The Minutes of the Meeting held on 39th EAC meeting on 12th September, 2025 were confirmed.

3. Details of proposals considered by the committee

Day 1 -26/09/2025

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Shirawta Off Stream Open Loop Pumped Storage Project (1800 MW) by **THE TATA POWER CO LTD** locat ed at **PUNE,MAHARASHTRA**

Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/MH/RIV/550476/2025	J-12011/38/2023-IA.I (R)	05/09/2025	River Valley/Irrigation projects (1(c))

3.1.2. Project Salient Features

40.1.1: The proposal is for grant of Environmental Clearance (EC) to the project for Shirawta Open Loop Pumped Storage Project (1800 MW) in an area of 197.797 ha at Village Khandshi, Rakaswadi, Thoran etc, Sub-district Mawal, District Pune, Maharashtra by M/s The Tata Power Company Limited.

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

i. Shirawta Off-stream Open Loop Pumped Storage Project (PSP) with a proposed installed capacity of 1800 MW is located near the Khopoli Hydro Power Plant and Shirawta Dam, Mawal (Maval) Taluka in Pune District of Maharashtra.

ii. The total installed capacity of proposed PSP is 1800 MW (5 x 300 MW + 2 x 150 MW) and envisaged non-consumptive reutilization of 15.15 MCM (Maximum requirement) of water per day for recirculation among two reservoirs upper reservoir & lower reservoir (Shirawta reservoir).

iii. The lower reservoir is existing one across stream named Indrayani, a tributary of Bhima River in Krishna Basin & upper reservoir is proposed to be constructed at top of Jambhavli-Thoran hillock ranges. Both reservoirs will be used cyclically for water storage & energy generation. The initial filling and the annual make up water towards the tank losses shall be sourced from the existing Shirawta reservoir.

iv. The project proposes to utilize the water of existing Shirawta reservoir serving as the lower reservoir (existing). The gross storage of the existing lower reservoir is 195.25 MCM with live storage as 183.48 MCM at FRL of 656.84 m which is much more than the water requirement for reutilization between the two reservoirs for power generation purposes. The reservoir belongs to Tata Power and the water in this reservoir has been protected under the Krishna Water Disputes Tribunal (KWDT) allocation. The water use for the proposed alternative shall be within the KWDT entitlement and hence no additional State water resource shall be required to be allocated.

v. **Project location:** The geographical co-ordinate of the project are Latitude: 18° 50' 26.26" N Longitude: 73° 27' 15.78" E.

vi. Scoping clearance of Shirawta Off Stream Open Loop Pumped Storage Project (1800 MW) project was accorded by Ministry of Environment Forest and Climate Change (MoEF& CC), Government of India vide letter no. J-12011/38/2023-IA.I (R), dated: 23.09.2023. However, due to project optimization and changes in configuration of project components & land requirement; scoping clearance was amended for Shirawta Off Stream Open Loop Pumped Storage Project with 1800 MW installed capacity by MoEF&CC vide letter dated 27.05.2024.

vii. **Land requirement:** Total land requirement is about 197.797 ha for the construction of various project components, out of which 160.783 ha is forest land and 37.014 ha is non-forest land. The forest land required for the project falls in Pune Forest Division. For diversion of 197.797 ha of forest land, online application has been submitted to MoEF&CC vide proposal No.: FP/MH/HYD/IRRIG/477051/2024 dated 07.06.2024. While in case of non-forest land, the entire 37.014 ha is in possession of Tata Power. The land under

possession of Tata Power was acquired around 100 years back for a specific purpose of 'generation of electricity & associated activities' and is under right, title, interest & possession of Tata Power till today for the same purpose.

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

The entire study area falls under two districts, namely Pune and Raigad. The project covers a total of 69 villages in the study area, including 3 villages identified as uninhabited. Out of the 69 villages, 50 are located in Mawal (Maval) tehsil of Pune district, and the remaining 19 are in Raigad district (16 villages in Karjat tehsil and 3 villages in Khalapur tehsil).

The total population of the study area is 50461, of which 26306 (52.13%) are males and 24155 (47.86%) are females. The number of households is 10085, with an average of 5-6 persons living in each house. The number of children below 6 years of age was found to be 6614, which is 13.10% of the total population. Sex ratio was found to be 918 females per 1000 males.

There are 3183 Scheduled Castes in the study area, which is 6.30% of the total population, of which 1597 are Scheduled Caste males and 1586 are Scheduled Caste females. There are 11207 Scheduled Tribes, which is 22.20% of the total population, of which 5739 are Scheduled Tribe males and 5468 are Scheduled Tribe females.

The literacy rate in the villages is 75.28% (population above 6 years), with the rates for males and females being 84.23% and 65.46% respectively, creating a gender gap of 18.77%.

There are a total of 22,315 workers in the study area, and 48.07% of them are involved in agriculture and allied activities. Out of this group, 32.01% are cultivators, and 16.06% are agricultural labourers. Only 2.92% of the population is engaged in household industries, while 48.99% are engaged in various other services like trade, commerce, business, and transport, government and private jobs. This indicates that a significant portion of the working population in the area is involved in non-agricultural activities.

ix. **Water requirement**: Approximately 15.15 MCM will suffice to meet generation of 1,800 MW for 6 hours.

x. **Project Cost:** The estimated project cost is Rs 7285.0 crore. Total capital cost earmarked towards Environment Management Plan/environmental pollution control measures is Rs. 3474.91 lakh and the Recurring cost (operation and maintenance) will be about Rs. 2474.28 lakh about i.e. Rs 354.47 lakh per annum.

xi. **Project Benefit:** Total Employment will be 1500 persons during construction phase and 200 during operational phase of the project. Rs. 1000.0 lakh has been allocated under CER and Local Area Development Plan for strengthening and development of basic infrastructural facilities with a view to improve the quality of life of residents in the project vicinity.

xii. **Environmental Sensitive area:** No project component falls in any notified protected area. Nearest Protected Area to the Project Components is Bhimashankar Wildlife Sanctuary which is at a distance of around 19.70 km from proposed upper reservoir. The lower reservoir named Shirawta Dam is existing one across Kundali river, a tributary of Bhima River in Krishna Basin.

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

a) MoU: MoU signed with GoM on 12th Aug 2024 (WRD as per PSP policy dated 20.12.2023)

b) Water Allocation: Approval from Krishna valley Development Corporation (MKVDC) dated 26.03.2024.

c) CEA/CWC accorded concurrence to Shirawta PSP (1800 MW) vide Office Memorandum dated 01.09.2025.

xiv. **Resettlement and rehabilitation:** The required 37.014 ha of non-forest land is in the possession of Tata Power that will be utilized for various components of the proposed project. No private land will be acquired for the proposed project; therefore, no family is

affected due to the acquisition of land for the proposed project. Hence, requirement of preparation of Resettlement & Rehabilitation Plan is not envisaged in the present case.

xv. **Scheduled – I species:** Among the mammals, 10 species are categorised as schedule I species. Rest of the mammalian species are listed under schedule II category of WPAA, 2022. As per the IUCN Red List of Threatened Species, Version 2023-1, Leopard, Sloth Bear, Sambar Deer, Indian Bison and Bonnet Macaque under Vulnerable (VU) category and Striped Hyaena is listed under Near Threatened (NT) category.

As per the IUCN Red List of Threatened Species version 2023-1, all birds have been listed under Least Concern (LC) category. As per the WPAA 2022, Indian Peafowl (*Pavo cristatus*) is listed as Schedule I species. All other bird species are listed as Schedule II category.

In case of herpetofauna, all species are listed under Least Concern (LC) category as per the IUCN Red List of Threatened Species version 2023-1. As per the WPAA, 2022, Asian Chameleon, Indian rat Snake, Indian Cobra and Russel's Viper are categorized as schedule I species.

Among the butterflies, Danaid Eggfly (*Hypolimnas misippus*) is listed under Least Concern (LC) category of IUCN Red List categories (Ver. 2023-1). No species of butterfly is categorized as a schedule species as per the WPAA 2022

xvi. **Alternative Studies:** Alternative studies were carried out amongst all the four proposed 'upper reservoirs' with common existing Shirawta reservoirs as 'lower reservoir'. The project components such as approach channel, intake/outlet structure, water conductor system, powerhouse, tail race tunnels, surge chamber, construction adit's, etc. were proposed for the respective alternatives keeping in view the all the technical and construction requirements.

- Alternative – 1: Layout with Site – 1 Upper Reservoir, Underground Powerhouse and other project components like Intake structure, Penstock / Pressure Shaft, Tail Race Tunnel, Tail Race Outlet, Tail Surge tank and Existing Lower reservoir.
- Alternative -2: Layout with Site – 2 Upper Reservoir, Underground Powerhouse and other project components like Intake structure, Penstock / Pressure Shaft, Tail Race Tunnel, Tail Race Outlet, Tail Surge Tank and Existing Lower reservoir.
- Alternative – 3: Layout with Site – 3 Upper Reservoir, Underground Powerhouse and other project components like Intake structure, Penstock / Pressure Shaft, Tail Race Tunnel, Tail Race Outlet, Tail Surge Tank and Existing Lower reservoir.
- Alternative – 4: Layout with Site – 4 Upper Reservoir, Surface Powerhouse and other components project components like Intake structure, Penstock/ Pressure Shaft, Tail Race Tunnel, Tail Race Outlet, and Existing Lower reservoir.

In view of the advantages and optimum utilization/availability of precious water and land resources; and attractive techno-economic parameters, Alternative 4 has been recommended.

Description	**Alternative-I (1400 MW)**	**Alternative-II (1020 MW)**	**Alternative-III (180 MW)**	**Alternative-IV (1800 MW)**
Source of Water	**Existing Shirawta Reservoir**			
Location Village	Maval	Maval	Maval	Maval
District	Pune	Pune	Pune	Pune
State	Maharashtra	Maharashtra	Maharashtra	Maharashtra
Lower Reservoir	**Existing Shirawta Reservoir**			
Latitude/ Longitu	18° 50' 26.26"	18° 50' 26.26"	18° 50' 26.26"	18° 50' 26.26"

Description	Alternative-I (1400 MW)	Alternative-II (1020 MW)	Alternative-III (180 MW)	Alternative-IV (1800 MW)
de	N 73° 27' 15.78" E	N 73° 27' 15.78" E	N 73° 27' 15.78" E	N 73° 27' 15.78" E
FRL (m)	657.76	657.76	657.76	657.76
MDDL (m)	638.00	638.00	638.00	638.00
Capacity at FRL (MCM)	195.25	195.25	195.25	195.25
Capacity at MDDL (MCM)	11.77	11.77	11.77	11.77
Live Storage Capacity (MCM)	183.48	183.48	183.48	183.48
Upper Reservoir	**Proposed**			
Latitude/ Longitude	18°47'22.02"N 73°28'26.60"E	18°48'10.52"N 73°25'47.50"E	18°47'41.98"N 73°26'58.80"E	18°50'10.52"N 73°25'47.50"E
Type of Dam	GFRD	GFRD	GFRD	GFRD
FRL (m)	935	895	882	965
MDDL (m)	912	875	870	948
Avg. Dam Height (m)	33	28	20	21
Dam Length (km)	6.30	4.80	20.20	4.26
Live Storage (MCM)	12.84	10.96	2.10	15.15
Max Min Head ratio	1.17	1.19	1.15	1.12
Rated Capacity	1400	1020	180	1800
No. of Units	5	4	1	5+2
Unit Capacity Generation Mode (MW)	280.0	255.00	180.00	1800 (5x300) + (2x150)
Unit Discharge (c	118.86	126.91	97.17	111.10 (300 M

Description	Alternative-I (1400 MW)	Alternative-II (1020 MW)	Alternative-III (180 MW)	Alternative-IV (1800 MW)
umec)				W) 55.74 (150 M W)
No. of Main PS	5	4	1	6
Pressure Shaft Di scharge (Cumec)	118.86	126.91	97.17	112.06
Circular Diameter (m)	5.50	5.50	5.50	5.90 (main)
Velocity (m/s)	5.00	5.34	4.09	6.20
Water Conducto r System				
Pressure Shaft/Pe nstock	803	666	756	1126.984
Tail race Tunnel	690	1091	521	149.826
Length of WCS (m)	1493	1757	1277	1276.81
Upstream L/H Rat io	3.01	2.93	3.53	3.52
Surge Tank/shaft	Not Required	Not Required	Not Required	Not Required
Tailrace Surge Ch amber	Required	Required	Required	Not Required
Type of Powerho use	Underground	Underground	Underground	Surface (Pit Typ e)
Peaking Hours (h r)	6.0	6.0	6.0	6.0
Land Requireme nt (ha)	**139.70**	**123.80**	**45.00**	**197.79**
Forest Land	130.5	102.20	33.30	160.78
Forest land (ha./ MW)	0.093	0.100	0.185	0.089

Description	Alternative-I (1400 MW)	Alternative-II (1020 MW)	Alternative-III (180 MW)	Alternative-IV (1800 MW)
Non-Forest land	16.0	21.60	11.70	37.01
RECOMMENDATION	Ruled Out	Ruled Out	Ruled Out	**RECOMMENDED**

xvii. **Baseline Environmental Scenario:**

Period — **From April 2023 to December 2023**

AAQ parameters at 10 locations (min. & Max.)

Unit in microgram/m^3

Core	Min	Max	Average	Standards
PM 2.5	17.20	22.90	20.05	60
PM 10	40.50	54.60	47.55	100
SO2	4.90	6.40	5.65	80
NO2	6.50	8.50	7.50	80
Buffer	Min	Max	Average	Standards
PM 2.5	21.60	33.50	27.55	60
PM 10	43.80	68.60	56.20	100
SO2	6.80	10.40	8.60	80
NO2	9.10	13.90	11.50	80

Incremental GLC Level

Criteria Pollutant (PM10, PM2.5, SO2, NOx, Other parameters specific to the sector	Unit (microgram/m^3)	Baseline Concentration (A)	Predicted incremental value considering worst case stability class (B)	Total GLC (A + B)
PM10	microgram/m^3	49.6	12.4	62.0
PM2.5	microgram/m^3	20.80	5.2	26.0
SO2	microgram/m^3	5.8	4.35	10.15
NOx	microgram/m^3	7.8	5.85	13.65

River water samples (4 samples)

	Core Zone			
S. No	Parameters	Min	Max	
1	pH	6.9	7.1	A
2	Total Dissolved Solids, mg/L	112.3	117	A
3	Dissolved Oxygen (mg/l)	6.9	7.1	B
4	Chloride (as Cl), mg/L	22.9	23.4	-
5	Total Hardness (as CaCO3), mg/L	159.8	163.1	A
6	Biological Oxygen Demand (mg/l)	21	21	A
7	Chemical Oxygen Demand (mg/l)	7.1	7.1	B
8	Total Coliform (MPN/100 ml)	21	23	A
	Buffer Zone			
S. No	Parameters	Min	Max	
1	pH	6.8	7.7	A
2	Total Dissolved Solids, mg/L	89.9	156	-

3	Dissolved Oxygen (mg/l)	5.3	7.3	A	
4	Chloride (as Cl), mg/L	27.4	81	NA	
5	Total Hardness (as CaCO3), mg/L	117.5	286.2	A	
6	Biological Oxygen Demand (mg/l)	21	5.52	B	
7	Chemical Oxygen Demand (mg/l)	7.1	14.9	-	
8	Total Coliform (MPN/100 ml)	27	45	A	

Ground water samples (10 samples)

	Core Zone				
S. No.	**Parameters**	**Min**	**Max**		
1	pH	7	7.7	6.5	8.5
2	Total Dissolved Solids (mg/l)	187	332	500	2000
3	Chloride (as Cl) (mg/l)	37.2	61.2	250	1000
4	Total Hardness (as $CaCO_3$) (mg/l)	124.9	205.3	200	600
5	Fluoride (mg/l)	0.22	0.36	1.0	1.5
	Buffer Zone				
S. No.	**Parameters**	**Min**	**Max**		
1	pH	7.1	7.7	6.5	8.5
2	Total Dissolved Solids (mg/l)	135	384	500	2000
3	Chloride (as Cl) (mg/l)	26.8	70.8	250	1000
4	Total Hardness (as $CaCO_3$) (mg/l)	70.1	237.5	200	600
5	Fluoride (mg/l)	0.14	0.42	1.0	1.5

Noise levels Leq (Day & Night) at 10 locations

Noise Level	**Zone**	**Leq Day dB(A)**		**Leq Night dB(A)**		
		From	To	From	To	
Core	Residential	40.2	46.6	34.2	39.4	55
Buffer	Commercial	42.5	60.9	35.9	51.3	65

Soil Quality at 10 Locations

Monitoring Location (Core/B	**Criteria Parameter [Calcium, Carbon, Nitrogen, Phosphorus, Potassium, Magnesium, Sodium Absorption Ratio, Salinity]**	**Unit [gm/ mg/ Other (please specify)]**	**Observed Value**		**Permissible standard**
			From	To	

uffer)					
CoreZone	Calcium	(mg/kg)	357	814	500
	Magnesium	(mg/kg)	119	271	500
	Available Nitrogen	(kg/ha)	174.8	290	500
	Available Phosphorus	(kg/ha)	8.2	15.5	50
	Available Potassium	(kg/ha)	143.5	268	500
	Organic carbon	(%)	0.4	0.6	1
	Sodium Adsorption Ratio		2.1	3.2	10
	Salinity	(ppt)	0	0	0.01
BufferZone	Calcium	(mg/kg)	236	1068	500
	Magnesium	(mg/kg)	91	356	500
	Available Nitrogen	(kg/ha)	142	267	500
	Available Phosphorus	(kg/ha)	8.2	22.3	50
	Available Potassium	(kg/ha)	170	320	500
	Organic carbon	(%)	0.6	0.8	1
	Sodium Adsorption Ratio		2	3.6	10
	Salinity	(ppt)	0	0	0.01

	Particle Size Distribution						**Water Holding Capacity (%)**		**Porosity (%)**	
	Sand (%)		**Silt (%)**		**Clay (%)**					
	From	**To**	**From**	**To**	**From**	**To**	**From**	**To**	**From**	**To**
Core	35.8	54.2	16.4	31.6	25.5	40.3	32.2	38.4	19.8	23.7
Buffer	35.4	56	16.3	41.1	21.3	42	31.8	37.1	19.4	24.2

Flora & Fauna	Among the mammals, 10 species are categorised as schedule I species. Rest of the mammalian species are listed under schedule II category of WPAA, 2022. As per the IUCN Red List of Threatened Species, Version 2023-1, Leopard, Sloth Bear, Sambar Deer, Indian Bison and Bonnet Macaque under Vulnerable (VU) category and Striped Hyaena is listed under Near Threatened (NT) category. As per the IUCN Red List of Threatened Species version 2023-1, all birds have been listed under Least Concern (LC) category. As per the WPAA 2022, Indian Peafowl (*Pavo cristatus*) is listed as Schedule I species. All other bird species are listed as Schedule II category. In case of herpetofauna, all species are listed under Least Concern (LC) category as per the IUCN Red List of Threatened Species version 2023-1. As per the WPAA, 2022, Asian Chameleon, Indian rat Snake, Indian Cobra and Russel's Viper are categorised as schedule I species. Among the butterflies, Danaid Eggfly (*Hypolimnas misippus*) is listed under Least Concern (LC) category of IUCN Red List categories (Ver. 2023-1). No species of butterfly is categorised as a schedule species as per the WPAA 2022.

xviii. **Details of Solid waste/ Hazardous waste generation/ Muck and its management:** Generation of Municipal Solid Waste- Bio degradable (613.0 Tons in four years), Generation of Non degradable (263.0 Tons in four years).

Solid waste management shall involve Reuse/Recycling, Storage/Segregation, Collection and Transportation and Disposal of Degradable component, non-degradable component& bio-medical waste.

Total quantity of Muck to be dumped: 25.78 lakh cum. Excavated muck is to be dumped in a pre-identified site located at a relatively flat ground at North of upper reservoir with total area of about 20.246 ha and capacity has been worked as 32,00,000.00 cum. The disposal site was identified taking into consideration availability of suitable area, minimum distance from generation sites.

xix. Public Hearing for the proposed project has been conducted by the State Pollution Control Board on 29th, October 2024, near Shirawta Dam, Mouje - Khandshi, Tal. Maval, District Pune, Maharashtra. The public hearing meeting was chaired by Ms. Jyoti Kadam, ADM, Pune.

xx. Status of Litigation Pending against the proposal, if any: Not Applicable

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

· **EAC Meeting Details:**

EAC meeting/s	40th meeting
Date of Meeting/s	26.09.2025
Date of earlier EAC meetings	11.08.2023 (50th meeting for TOR) 29.04.2024 (10th meeting for Amendment in TOR)

Name	Shirawta

of the Proposal	Off-Stream Open Loop Pumped Storage Project (1800 MW)
Proposal No.	IA/MH/RIV/55047 6/2025
Location (Including Coor	Near existing Shirawta dam, Mawal Taluka,

dinates)	Pune district of Maharashtra Upper Reservoir- Lat: 18° 50' 26.26" N Long: 73° 27' 15.78" E
Company's Name	M/s The Tata Power Company

	Limited
CIN no. of Company/ user agency	L28920MH1919PLC000567
Accredited Consultant and certificate no.	RS Enviolink Technologies Pvt Ltd; NABET/EIA/25-28/RA

	04 15
Project location (Coordinates/River/Reservoir)	Near existing Shirawta dam, Mawal Taluka, Pune district of Maharashtra
Inter-state issue involved	No
Pro	Shira

posedonRiver/Reservoir	wtaDamacrossKundaliriver
TypeofHydro-electricproject	PumpedStorageProject
Seismiczone	SeismicZoneIII
Categ	A

ory of the project	
Capacity/ Cultural command area (CCA)	1800 MW
Attracts the General Con	No

ditions (Yes/No)	
Additional information (if any)	-
ToR Proposal No.	IA/MH/RIV/43842 3/2023
EAC meeting date	11.08.2023 (TOR) 2

	9.04.2024 (TOR amendment)
To R Letter No.	J-12011/38/2023-IA.I (R)
To R grant Date	23.09.2023 (TOR) 27.05.2024 (TOR amendm

	ent)
Cost of project	Rs 7285.0 crore
Total area of Project	197.797 ha
Height of Dam from River Bed (EL)	Upper Dam-33.0 m
Details of submergence area	130.67 ha
District to pr	NA

ovide irrigation facility (if applicable)	
Details of tunnels on upper level & lower level and length of canal (if applicable)	----------
No. of aff	No priva

ected Village	te land will be acquired for the proposed project; therefore, no family is affected due to the acquisition of land for the proposed pr

	oject.
No. of Affected Families	No private land will be acquired for the proposed project; therefore, no family is affected due to the acquisition of land f

	or the proposed project.
Project Benefits	The levelized cost of generation of the project has been found to be Rs 7.35/kWh considerin

	g cost of pumping @Rs 3/ kWh. Shirwata pumped storage hydro project is a technically feasible project and will be benefici

	al in meeting the peaking requirement of energy during evening/ night. The National Solar Mission would induct large quantum

	of renewable energy to the grid in the years to come and the Solar power would go off the grid by the end of the day. The

	pumped storage project (PSP) will be required for stabilizing the grid and in turn supporting the National Solar Mission and facilitat

	e induction of renewable energy into the grid.
R&R details	The required 37.014 ha of non-forest land is in the possession of Tata Power t

	hat will be utilized for various components of the proposed project. No private land will be acquired for the proposed project; t

	herefore, no family is affected due to the acquisition of land for the proposed project. Hence, requirement of preparation of Re

	settlement & Rehabilitation Plan is not envisaged in the present case.
Catchment area/ Command area	Since there is no landward catchment area of th

	e upper reservoir, no CAT plan can be prepared. Also, since lower reservoir is already existing hence CAT plan preparation is no

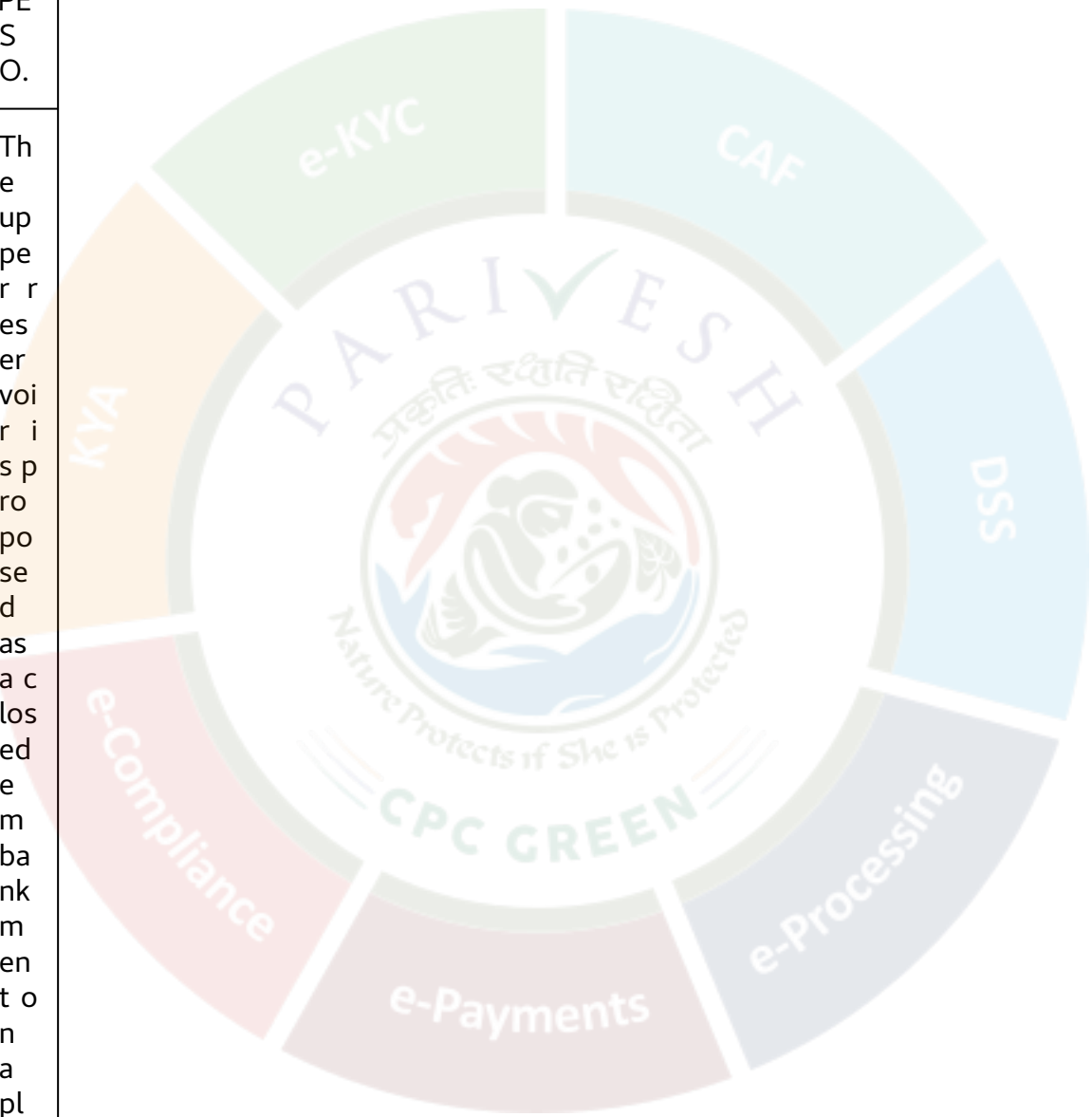
	t applicable. In view of above, CAT plan in proposed Shirawta PSP is not applicable and has not been prepared.
Types of Waste a	Municipal Solid

nd quantity of generation during construction/ Operation	Waste-Biodegradable (613.0 Tons in four years), Non degradable (263.0 Tons in four years)
Material used for blasting an	One magazine of 10 MT

d its composition as per DGMS standards.	capacities would be sufficient to meet the requirement of the project. A mobile explosive van shall be deployed to carry explosi

	ve at th e s ite of us e a t u pp er an d l o w er da m ar ea. M ov e m en t o f v an sh ou ld be do ne wi th ar m ed gu ar ds an d pr op er do cu m en tat

	ion recommended by PESO.
E-Flows for the Project	The upper reservoir is proposed as a closed embankment on a plateau and nonstream contr



	ib ut es to th e s up pl y of wa te r. Th e up pe r r es er voi r wil l r ec eiv e wa ter fro m rai nf all dir ec tly fal lin g i nt o t he pr op os ed re se rv oir an

	d pu m pi ng fro m th e l o w er re se rv oi r; t he inf lo w re cei pt fro m th e pr eci pit ati on sh all be rel ea se d t o do w ns tre a m sid e t hr ou gh

	the appropriate arrangement.
Is Projects earlier studied in Cumulative Impact assessment & Carrying Capacity Studies (CIA&CC) for	No

River in which project located. If yes then c) E-flow with TOR/ Recommendation by EAC as per CIA&CC study of River Basin. d) If not the	

E-Flows maintain criteria for sustaining river ecosystem.	
Details on provision of fish pass	The proposed Shirawta Pumped Storage Project is planned as an ‘open loop’ sc

	he m e. W ate r i n c irc ula tio n f ro m l ow er to up pe r r es erv oir an d v ice ver sa is sm all as co m pa re d t o t he tot al ca pa cit y o f t he Shi ra wt a r es erv

	oir (about 8% of the storage capacity) and will be limited to one part of the reservoir only wherever the component design of PSP shall take

	care of the aquatic life where intake will be through screens and barrier nets to segregate this area for fish entry.
Project benefit includ	The setting up of 18

ingemployment details (no of employee)	00 MW PSP project would provide employment for a hundred plus technical staff and provide job opportunities to thousa

	nds during the construction phase. About 1500 workers (labour and staff) would be engaged during the peak construction period,

	out of which 300 persons will be engaged permanently and about 1200 will be temporary labour for the construction wor

	k. It is expected that 70% of the total workforce shall be available from the State of Maharashtra. After completion of the pr

	oject only a staff of about 200 technical persons shall be required for the operation of the project.
Area of Compensatory Affo	CA land – 160.783 ha; Land

restation (CA) with tentative no of plantation.	is having tree cover with density of 0.4; Protection and conservation measures proposed.
Previous EC details	
EC Compli	

ance Report by R. O, MOEF& CC	
No. of trees/ saplings proposed in the view of ‘ Ek Ped Maa Ke Naam’ campaign	
Power ho	1800 MW

useInstalledCapacity	
GenerationofElectricityAnnually	3744.90MU
No.ofUnits	7;1800MW[5x3

	00+2x150]
No. of proposed disposal area/ (type of land-Forest/Pvt land)	The total quantity of muck to be disposed of works out to 25,78,463.00 cum. Excavated muc

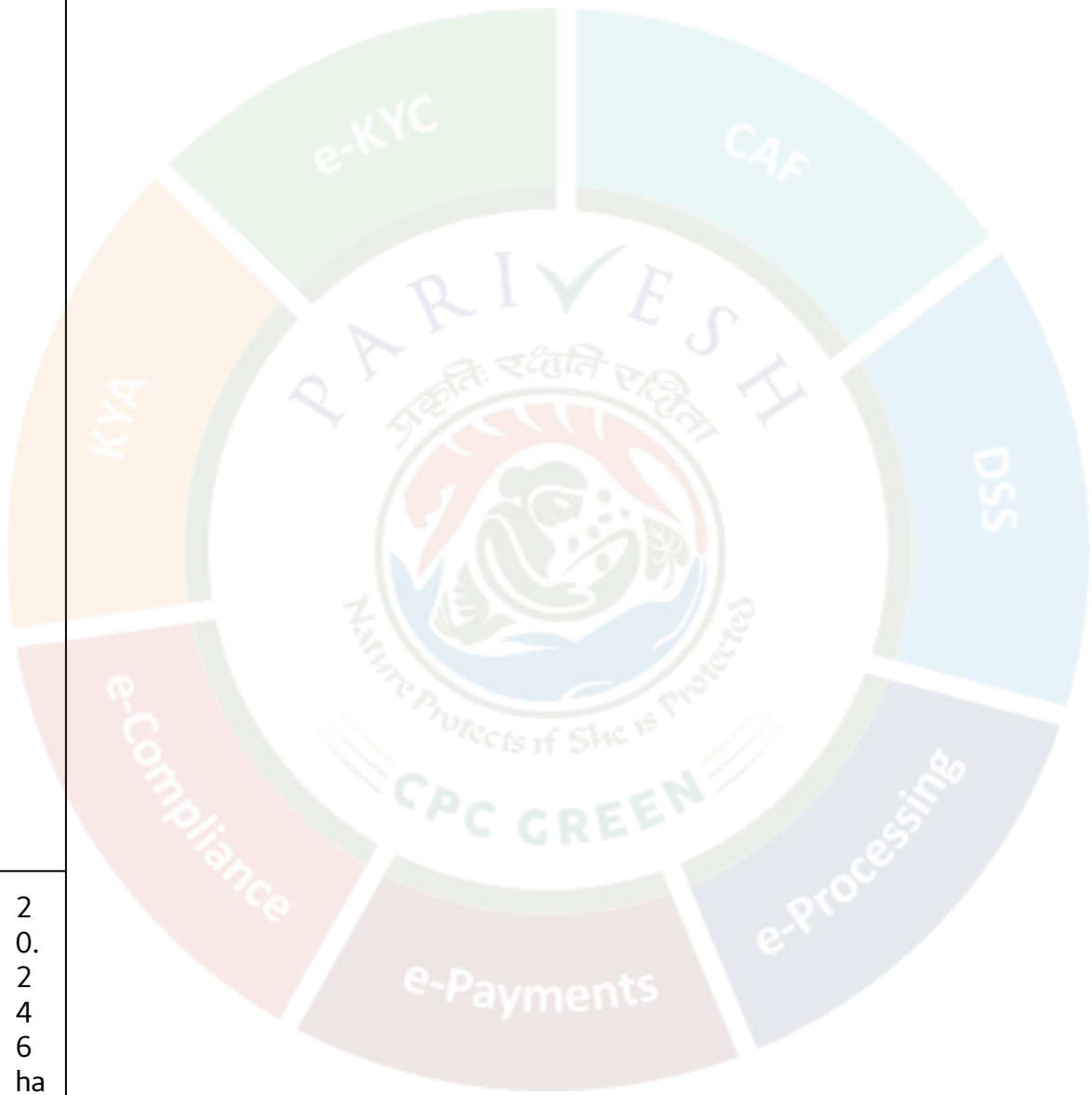
	k is to be dumped in a pre-identified site located at a relatively flat ground at North of upper reservoir with total

	area of about 20.246 ha and capacity has been worked as 32,000.000 cum. The disposal site was identifie

	dtaking into consideration availability of suitable area, minimum distance from generation sites.
Cross	**Encl**

ection of proposed muck area, Height of muck with slope.	**osed as Annexure-I**
Distance of muck disposal area(location), from mmuc	Dumping Area 1-North of Upper Reservoir

k generation sources (project area)/ River, HFL of proposed muck disposal area	
Total Muck Disposal Area	20.246 ha
Estimat	46,18,

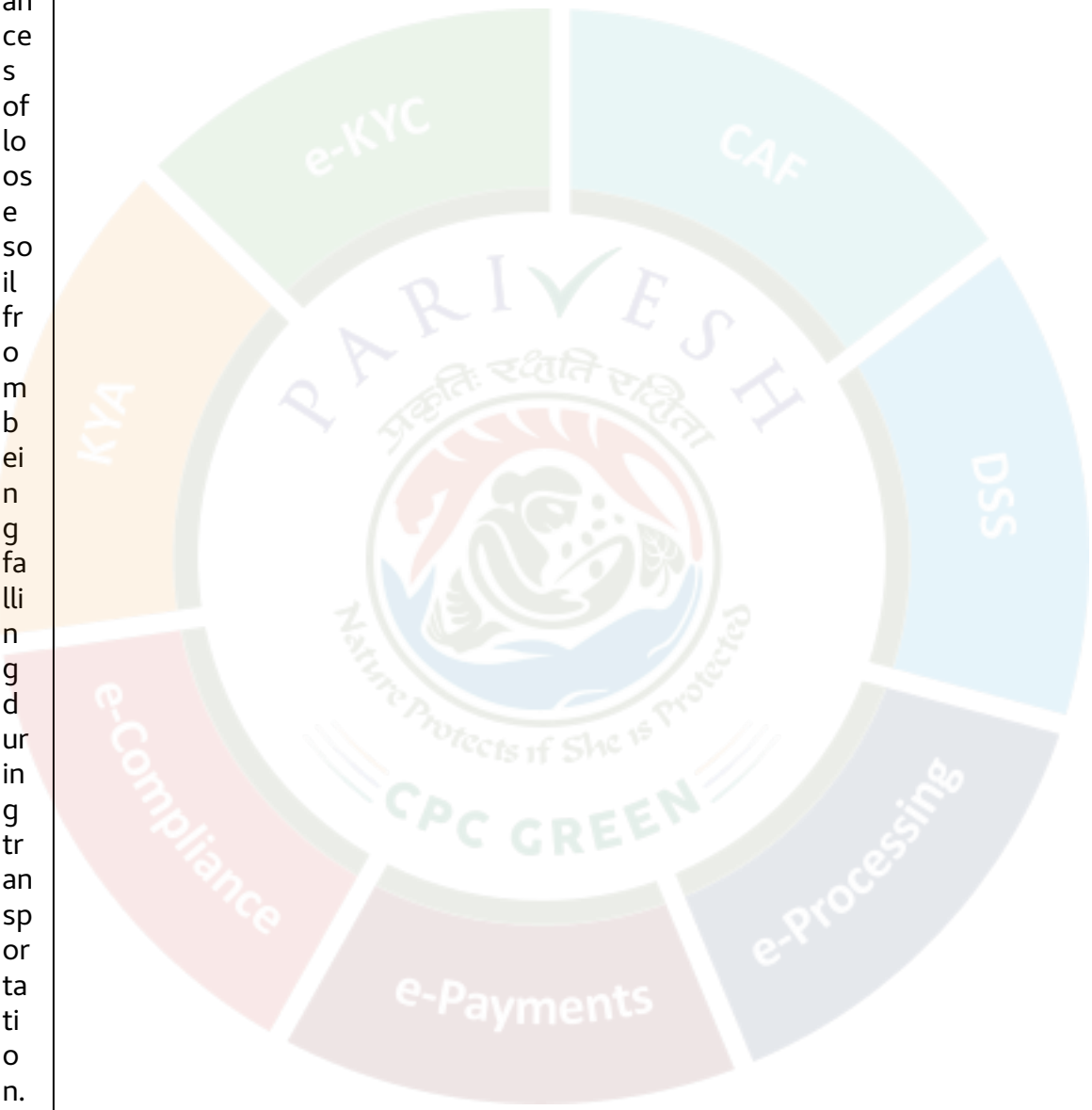


e Muck to be generated	699 cum
Transportation	The generated muck will be carried in dump ertrucks covered with heavy

	duty tarpaulin properly tied to the vehicle in accordance with best international practices. All precauti

	onary measures will be followed during the dumping of muck. All dumpers will be well maintai

	need to avoid any chances of loose soil from being falling during transportation. All routes will be p



	eriodically wetted with the help of sprinklers prior to the movement of dumper trucks.
Monitoring mec	The provisio

hanism for Muck Disposal Transportation	ns of Monitoring have been kept under proposed Environmental Monitoring Plan.
Private la	37.0144h

nd	aPrivateland
Governmentland	-
Forestland	160.7833.00
Totalland	197.7797ha
Submergen	130.667ha

clear area/ reserv oir area	
Additional information (if any)	

Forest Land/ Protected A	**Yes/ No**	**Details of Certificate/ lett**

rea/ Environmental Sensitivity Zone		**er/ Remarks**
Reserve Forest/ Protected Forest Land	**No**	No project component falls in any notified prote
National P	**No**	

ark		cted area. Nearest Protected Area to the Project Components is Bhimashankar Wildlife S
Wildlife Sanctuary	**No**	

		anctuarywhichisatadistanceofaround19.70kmfromproposedupperreservoir.
Arc	**No**	Th

haeological sites monuments/ historical temples etc		eproposed project will not affect any important cultural, historical or religious sites in the vici

		nity. However, there are many tourist, religious and historical sites near project area su

		chas Lonavala-Khandala Hill Station, Valvhan Lake, Uksan Lake, Karla Caves, Adishakthi

		Aai Ekavaira Templewhich haremorethan5kmawayfromtheprojectcomponents.
Addi	-	

tional information (if any)		
Advertisement for PH with date	Advertisements of the Public Hearing meetings were prepared by Maharashtra Pollution Control Board (MPC	

	B) and published in local newspaper Loksatta (in Marathi) and in national newspaper Indian Express (in English) on 25th September 2024.
Date of P	29th October 2024

H	
Venue	Near Shirawta Dam, Mouje - Khandshi, Tal. Maval, District Pune.
Chaired by	Meeting was chaired by Ms. Jyoti Kadam, ADM, Pune
Main issue	- Provision o

s ra is e d d u ri n g P H	f E m pl o y m e n t o f l o c al Y o u t h. - Fo r m a C o o r di n at io n C o m m it te e w it h M P C B, c o m p a

	ny officials, and government representatives to utilize the CSR budget effectiv

	ely. - Provide skill development courses for unemployed youth in the projec

	t-affected area with government support. - Urge the government to proceed

	only with full consent from all stakeholders and without harming the environ

	ment.
No of people attended	337

· **Court cases: Nil**

· **Status of other statutory clearances**

Particulars	**Letter no. and date**
Status of Stage-I FC	Forest proposal has been submitted vide proposal no. FP/MH/HYD/IRRIG/477051/2024 and pending at Technical Officer - MOEFCC,

	HQ
Approval of Central Water Commission	CEA/CWC accorded concurrence to Shirawta PSP (1800 MW) vide Office Memorandum dated 01.09.2025
Approval of Central Electricity Authority	CEA/CWC accorded concurrence to Shirawta PSP (1800 MW) vide Office Memorandum dated 01.09.2025
Is F	Under progress.

RA(2006)doneforFC-I	

· **Details of the EMP**

S.No	Component of EMP	Capital Cost (Rs. In lakh)	Recurring Cost (Rs. In			
			Year 1	Year 2	Year 3	Year 4
1	Catchment Area Treatment Plan	0.00	0.00	0.00	0.00	0.00
2	Biodiversity Conservation & Wildlife Management Plan	1410.00	0.00	0.00	0.00	0.00
3	Fisheries Conservation and Management Plan	50.00	16.00	16.00	16.00	16.00
4	Muck Dumping and Management Plan	943.90	84.12	140.18	88.33	11.00
5	Landscaping, Restoration of Quarry, and Construction Sites	96.25	68.21	27.40	14.94	1.50
6	Green Belt Development Plan	0.00	5.00	5.35	18.70	12.45
7	Sanitation and Solid Waste Management Plan	147.00	33.00	33.00	26.00	19.00
8	Public Health Delivery System	126.00	35.00	34.00	34.00	34.00
9	Energy Conservation Measures	56.00	72.50	72.50	72.50	72.50
10	Labour Management Plan	35.00	7.00	17.00	17.00	17.00
11	Disaster Management Plan	210.00	10.00	10.00	10.00	10.00

12	Control of Air, Noise and Water Pollution	0.00	15.00	15.00	15.00	15.00
13	Environmental Monitoring Programme	0.00	53.15	53.15	53.15	53.15
15	Rehabilitation and Resettlement Plan*	0.00	0.00	0.00	0.00	0.00
16	Local Area Development Plan	0.00	244.75	244.25	265.75	245.25
17	Watershed Development Plan	400.76	0.00	0.00	0.00	0.00
	Total	**3474.91**	**643.73**	**667.83**	**631.37**	**506.85**

* No acquisition/ procurement of private land involved.

3.1.3. Deliberations by the committee in previous meetings

N/A

3.1.4. Deliberations by the EAC in current meetings

40.1.3 The EAC during deliberations noted the following:

· The EAC deliberated on the information submitted and presented during the meeting, observing that the proposal is for the grant of Environmental Clearance (EC) to the project for Shirawta Open Loop Pumped Storage Project (1800 MW) in an area of 197.797 ha at Village Khandshi, Rakaswadi, Thoran etc, Sub-district Mawal, District Pune, Maharashtra by M/s The Tata Power Company Limited.

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

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

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

· The Terms of Reference issued by MoEF&CC, New Delhi vide letter no. F No. J-12011/38/2023-IA.I (R), dated: 23.09.2023 to Shirawta Off Stream Open Loop Pumped Storage Project. Subsequently, amendment in TOR granted by the MoEF&CC vide letter dated 27.05.2024 due to project optimization and changes in configuration of project components & land requirement; scoping clearance was amended for with 1800 MW installed capacity.

· The EAC observed that the total land requirement is about 197.797 ha for the construction of various project components, out of which 160.783 ha is forest land and 37.014 ha is non-forest land. It was noted that the Stage-I Forest Clearance is still pending for diversion of 197.797 ha of forest land, online application has been submitted to MoEF&CC vide proposal No.: FP/MH/HYD/IRRIG/477051/2024 dated 07.06.2024. The entire non-forest area of 37.014 ha is in possession of Tata Power.

· During the deliberations, the Committee observed that the proposed batching plant requires 0.402 ha of forest land. The Committee advised that the batching plant should preferably be located outside the forest area. However, the PP explained that the batching plant is a mandatory requirement and needs to be located close to the construction site, as the identified non-forest land is situated far from the reservoir area. It was further clarified by the PP that the batching plant would be a temporary facility required only during the construction phase. After detailed discussions, the Committee suggested that, in view of the unavoidable requirement, a comprehensive reclamation and restoration plan shall be prepared in consultation with the Forest Department. The Plan shall include measures for ecological restoration of the forest land and shall be fully implemented within five years of commissioning of the project.

· The EAC noted that the Public hearing was conducted on 29.10.2024 near Shirawta Dam, Mouje - Khandshi, Tal. Maval, District Pune and chaired by by Ms. Jyoti Kadam, ADM, Pune. Advertisements of the Public Hearing meetings were prepared by Maharashtra Pollution Control Board (MPCB) and published in local newspaper Loksatta (in Marathi) and in national newspaper Indian Express (in English) on 25th September 2024. The EAC discussed the concerns raised during the Public Hearing (PH) and reviewed the action plan submitted by the PP to address these issues. After detailed deliberation, the Committee found the action plan satisfactory, recognizing that the proposed mitigation measures adequately respond to stakeholder's concerns.

· The committee observed that EAC sub-committee had carried out a site visit to Shirawta PSP site on 23/02/2024. The sectoral EAC has discussed the site visit report in 9th meeting held on 20/03/2024 and made certain recommendations. It was noted that the PP has provided satisfactory information/response to the recommendations of the EAC (Sub -Committee).

· The EAC noted that as per the socio-economic baseline data, the study area has a Scheduled Caste (SC) population of 3,183 persons, constituting about 6.30% of the total population, and a Scheduled Tribe (ST) population of 11,207 persons, constituting about 22.20% of the total population. The Committee emphasized that, keeping in view the significant proportion of Tribal population, PP should prepare and implement a comprehensive Skill Development Plan in consultation with the local administration. The Plan shall focus on:

Ø Capacity building and skill enhancement programs tailored to local livelihood opportunities.
Ø Establishment of linkages with Industrial Training Institutes (ITIs) for technical training.
Ø Providing free or subsidized access to healthcare facilities in project-supported hospitals and health centres.
Ø Strengthening educational infrastructure by supporting schools in the study area with free services, scholarships, and vocational guidance.
Ø Ensuring special outreach programs for women, youth, and vulnerable groups within the SC/ST communities.

- The lower reservoir is existing one across stream named Indrayani, a tributary of Bhima River. The project proposes to utilize the water Approximately 15.15 MCM will suffice to meet generation of 1,800 MW for 6 hours of existing Shirawta reservoir. The gross storage of the existing lower reservoir is 195.25 MCM with live storage as 183.48 MCM at FRL of 656.84 m.

The Committee noted that the Layout Map and Power Potential Studies had been duly submitted

to the Central Electricity Authority (CEA). The Final Site Report (FSR) was submitted to the CEA vide email No. LNL/HWS/2023/66 dated 05.06.2023. The first consultation meeting was held on 16.06.2023, and the layout was subsequently approved in the second meeting conducted on 28.08.2023, as per reference letter No. CEA-HY-14-19/9/2023 dated 12.09.2023.

3.1.5. Recommendation of EAC

Recommended

3.1.6. Details of Environment Conditions

3.1.6.1. Specific

Miscellaneous:	
1.	After 5 years of the commissioning of the project, a study shall be undertaken regarding impact of the project on the environment. The study shall be undertaken by an independent agency.
2.	A dedicated team to oversee environmental management activities (at project site) shall be set up comprising Environment Manager having post graduate qualification in Environmental Sciences/ Environment Engineering along with other supporting staff. The Environment Manager Shall report to Project Head directly.
3.	PP shall procure construction material only from those Organizations having all valid legal/statutory clearances/permissions or necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and as amended thereof.
Socio-economic	
1.	Land acquired for the project shall be suitably compensated in accordance with the prevailing guidelines of the state government and provisions under Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
2.	RO plant shall be installed in the nearby 5 villages and the maintenance shall be done by the project Authorities.
3.	Solar panel be provided to the families living in rural areas within 10 km radius of project.
4.	School up to 12^{th} Standard shall be established and managed to provide free quality education for children from project affected villages/Tribal villages. Adequate transportation facilities shall also be provided to students to ensure connectivity and ease of access.
5.	50 bed multi-specialty hospital shall be established to cater the need of tribal population/locals. The tribal population within 10 km radius of the project shall be given free of cost medical facility.
6.	Skill development Centre shall be established within 10 km radius of the project and regular

	training programmes for development and promotion of traditional art/products of tribal/local population. The Skill Development Plan shall mandatorily include the following components: · Capacity building and skill enhancement programs aligned with local livelihood opportunities. · Establishment of linkages with Industrial Training Institutes (ITIs) and other recognized training centres for imparting technical skills. · Provision of free or subsidized access to healthcare facilities in project-supported hospitals and health centres. · Support to educational institutions in the study area through free services, scholarships, infrastructure strengthening, and vocational guidance programs. · Special outreach initiatives for women, youth, and vulnerable groups within the SC/ST communities to ensure inclusive participation and benefits. The Plan shall be implemented in a time-bound manner with clearly earmarked budgetary provisions, which shall not be diverted for any other purpose.
7.	The PP shall submit annual progress reports on the implementation of the Skill Development Plan and associated community welfare measures to the Regional Office of the Ministry.
8.	Bio-Gas plant shall be installed in the Project affected area for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.
9.	Preference in employment opportunities and admission to ITI institutions shall be given to Project Affected Families (PAFs).
10.	An institutional mechanism to be developed to ensure the preference of jobs to PAFs and SC/ST and also a policy for preferential treatment for award of sundry works to the PAFs and SC/ST and their dependents.
11.	The compliance of above conditions shall be monitored by IRO, MoEF&CC and regularly site visit once in year. The compliance report of IRO shall be regularly submitted to MoEF&CC.
Disaster Management	
1.	Disposal of the excavated muck and its filling on the low-lying area with proper measures for the stabilization and greenery to minimize the impacts of the generated construction muck shall be taken up pari passu with construction work.
2.	Stabilization of muck disposal sites using biological and engineering measures shall be taken up immediately to ensure that muck does not roll down the slopes and does not pollute the natural streams and water bodies in surrounding area. The plantation on muck disposal site with local species for restoration of ecology and environment of the project site area.
3.	Necessary control measures such as water sprinkling arrangements, and construction of paved roads leading to muck disposal sites etc. shall be taken up on priority to arrest fugitive dust at all the construction sites.
4.	Solid waste generated, especially plastic waste, etc. should not be disposed of as landfill material. It should be treated with scientific approach and recycled. Use of single-use plastics may be discouraged.

5.	Technical appraisal of project shall be obtained from CEA in terms of Office Memorandum no. 15-23/3/2021-Hydel-II dated 29.08.2025 issued by the Ministry of Power, before start of construction activities of the project.
Environmental management and Biodiversity conservation	
1.	Stage-I FC shall be obtained before grant of EC.
2.	The water of rainfall yield of self-catchment of the reservoir shall be released to downstream through body of dam/ barrage/ embankment etc.
3.	The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. The budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also be updated proportionately.
4.	The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.
5.	Ambient Air Quality Monitoring Stations for real time data to be installed at project site before commencement of the construction, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.
6.	No vehicle purchase shall be allowed from funds earmarked for implementation of Wildlife Conservation plan. Measures for minimizing the human-animal conflict specially for black bear and leopard be suitably incorporated in the wildlife conservation plan in consultation with State Forest Department.
7.	10000 plants shall be planted around the muck disposal area and the survival of plants shall be submitted with the 6 monthly compliance report.
8.	Plantation of saplings shall be carried out as a part of the tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the MeriLiFE Portal (https://merilife.nic.in).
9.	Watershed development plan prepared shall be implemented within 10 km radius of the project. Implementation status be submitted in the 6 monthly compliance report to the concerned regional office of the Ministry.
10.	PP shall prepare time bound reclamation and restoration plan for restoration of batching plant in consultation with the Forest Department and same shall be submitted to IRO, MoEF&CC and shall be fully implemented within five years of commissioning of the project.
11.	The reservoir sedimentation study shall be conducted periodically to determine the actual amount of water available in the reservoir.

3.1.6.2. Standard

1(c)	**River Valley/Irrigation projects**

Statutory compliance	
1.	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
2.	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
3.	The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of Schedule-I species in the study area).
4.	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
5.	NOC shall be obtained from National Commission of Seismic Design Parameters (NCSDS) of CWC.
6.	Necessary approval of CEA shall be obtained for those projects having the project cost more than Rs. 1,000 crores.
Air quality monitoring and preservation	
1.	Regular monitoring of various environmental parameters viz., Water Quality, Ambient Air Quality and Noise levels as per the CPCB guidelines at designated locations shall be carried out on monthly basis and a detailed database of the same shall be prepared and recorded. This shall be used as a baseline data for post construction EIA / Monitoring purposes.
2.	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed standards.
3.	Necessary control measures such as water sprinkling arrangements, etc. bet taken up to arrest fugitive dust at all the construction sites.
4.	Conjunctive use of surface water to be planned in the project to check water logging as well as to increase crops productivity. The field drains shall be connected with natural drainage system (if applicable).
5.	Remodelling of existing natural drains (link drains) and connecting them with irrigated land through constructed field drains, collector drains, etc. are to be ensured on priority basis (if applicable).
6.	Before impounding of the water, Cofferdams for both at the upstream and downstream are to be decommissioned as per EIA/EMP report so that once the project is commissioned; cofferdam should not create any adverse impact on water environment including the rock mass and muck used for the Cofferdam.
7.	As the reservoir will be acting as balancing reservoir and there would be fluctuation of water level during peaking period, efforts be made to reduce impact on aquatic life including impacts during spawning period both at the upstream and downstream of the project.
8.	Water depth sensors shall be installed at suitable locations to monitor e-flow. Hourly data to be collected and converted to discharge data. The Gauge and Discharge data in the form of Excel Sheet be submitted to the Regional Office, MoEF & CC and to the CWC on weekly basis.

9.	Mixed irrigation shall be practised and necessary awareness be given to all the farmers and trained in the use of such systems. Proper crops selection shall be carried out for making irrigation facility more effective (if applicable).
10.	On Farm Development (OFD) works like landscaping, land levelling, drainage facilities, field irrigation channels and farm roads, etc. should be taken up in phased manner prior to the start of irrigation in the entire command area. The Command Area Development Plan should be strictly implemented as proposed in the EIA/EMP report (if applicable).
Noise monitoring and prevention	
1.	All the equipment likely to generate high noise shall be appropriately enclosed or inbuilt noise enclosures be provided so as to meet the ambient noise standards as notified under the Noise Pollution (Regulation and Control) Rules, 2000, as amended in 2010 under the Environment Protection Act (EPA), 1986.
2.	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.
Catchment Area Treatment Plan	
1.	Catchment Area Treatment (CAT) Plan as proposed in the EIA/EMP report shall be implemented in consultation with the State Forest Department and shall be implemented in synchronization with the construction of the project.
Waste management	
1.	Muck disposal be carried out only in the approved and earmarked sites. The dumping sites shall be located sufficiently away from the HFL of the river. Efforts be made to reuse the muck for construction and other filling purposes and balanced be disposed of at the designated disposal sites. Once the muck disposal sites are inactive, proper treatment measures like both engineering and biological measures be carried out so that sites are stabilized quickly.
2.	Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead be used for various purposes as envisaged in the EIA/EMP reports. Efforts be made to avoid one time use of plastics.
Green Belt and Wildlife Management	
1.	Based on the recommendation of Cummulative Impact Assessment and Carrying capacity study of river basin or as per the ToR conditions or minimum 15% of the average flow of four consecutive leanest months, whichever value is higher, shall be released as environmental flow.
2.	Detailed information on species composition particular to fish species from previous study/literature be inventoried and proper management plan shall be prepared for insitu conservation in the streams, tributaries of river and the main river itself for which adequate budget provision be made and followed strictly.
3.	Wildlife Conservation Plan approved by the Chief Wildlife Warden shall be implemented in consultation with the local State Forest Department.
4.	To enrich the habitat of the project site, plantation shall be raised as envisaged in the EIA/EMP report. Plantation to be developed along the periphery of the reservoir in multi-layers with local indigenous species in consultation with the local State Forest Department.

5.	Compensatory afforestation programme shall be implemented as per the plan approved.
6.	Fish ladder/pass as envisaged in the EIA/EMP report shall be provided for migration of fishes. Regular monitoring of this facility be carried out to ensure it effectiveness.
Public hearing and Human health issues	
1.	Resettlement & Rehabilitation plan be implemented in consultation with the State Govt. as approved by the State Govt.
2.	Budget provisions made for the community and social development plan including community welfare schemes shall be implemented in toto.
3.	Preventive measures viz. fuming and spraying of mosquito control shall be done in and around the labour colonies, affected villages, stagnated pools, etc. Provisions be made to not to create any stagnated pools to avoid creation of breeding grounds of the vector borne diseases.
4.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
5.	Labour force to be engaged for construction works shall be examined thoroughly and adequately treated before issuing them work permit. Medical facilities shall be provided at the construction sites.
Risk Mitigation and Disaster Management	
1.	Early Warning Telemetric system shall be installed in the upper catchment area of the project for advance intimation of flood forecast.
2.	Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
3.	Emergency preparedness plan be made for any eventuality of the dam failure and shall be implemented as per the Disaster Management Plan.
4.	Stabilization of muck disposal sites using biological and engineering measures shall be taken up to ensure that muck does not roll down the slopes and shall be disposed safely and that it does not pollute the natural streams and water bodies in surrounding area. The engineering measures for the muck disposal arrangements be evolved after carrying out required slope stability analysis.
5.	Catchment area treatment plan shall be prepared and sufficient fund shall be provided for afforestation, rim plantation, pasture development, nursery development.
Corporate Environment Responsibility	
1.	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 30th September, 2020, as applicable, regarding Corporate Environment Responsibility.
2.	Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their long time livelihood generation

3.	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation/violation of the environmental / forest / wildlife norms/conditions and / or shareholders/ stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
4.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
5.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
6.	Post EIA and SIA be prepared for the project through a third party and evaluation report be submitted to the Ministry after five years of commissioning of the project.
7.	Multi Disciplinary Committee (MDC) be constituted with experts from Ecology. Forestry, Wildlife, Sociology. Soil Conservation, Fisheries, NGO, etc. to oversee implementation of various environmental safeguards proposed in EIA/EMP report during construction of the project. The monitoring report the Committee shall be uploaded in the website of the Company.
8.	Formation of Water User Association/Co-operative be made involment of the whole community be ensured for discipline use of available water for irrigation purposes
Miscellaneous	
1.	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
2.	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
3.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
4.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
5.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
6.	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land

	development work and start of production operation by the project.
7.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
8.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
9.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
10.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
11.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
12.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
13.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
14.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
15.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

3.2. Agenda Item No 2:

3.2.1. Details of the proposal

Sawalkot HE Project (1856 MW) by **NHPC LMITED** located at **,JAMMU AND KASHMIR**			
Proposal For		Fresh EC	
Proposal No	**File No**	**Submission Date**	**Activity (Schedule Item)**
IA/JK/RIV/551637/2025	J-12011/19/2011-IA-I	16/09/2025	River Valley/Irrigation projects (1(c))

3.2.2. Project Salient Features

40.2.1: The proposal is for grant of Environmental Clearance (EC) to the project for Sawalkote

Hydro Electric Project (1856 MW) on river Chenab in an area of 1401.35 Ha located at Village Bhajmasta, Sub-district Ramban, District Ramban, Jammu & Kashmir by M/s NHPC Limited.

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

i. Sawalkot HEP (6 X 225 MW & 1 X 56 MW for Stage 1 – 1406 MW and 2 X 225 MW for Stage 2 – 450MW) is a run-of-the-river project that will be using the water of Chenab River located Ramban, Reasi and Udhampur districts of UT of Jammu & Kashmir.

ii. It envisages construction of a 192.5 m high Roller Compacted concrete (RCC) gravity dam from the deepest foundation level, an upstream short water conductor system, an underground powerhouse in the left bank downstream of dam axis and a tail race system. For Stage- 1, the upstream water conductor system consists of two intake structures and two head race tunnels and associated pressure shafts/ penstocks. For Stage-2, an additional intake, an additional HRT and corresponding pressure shafts are envisaged besides extension of powerhouse complex and additional tailrace tunnel. The project also envisages construction of three diversion tunnels on the right bank and upstream & downstream cofferdams.

iii. **Project location:** The geographical co-ordinate of the project are Dam site & Power House site on Chenab River: 33°11'N, 75°06'E

iv. **Project Background:**

a. The project proposal was considered by the Expert Appraisal Committee (River Valley and Hydropower Projects) in its meetings held on 30.12.2016 and 30-31.01.2017 and was recommended for grant of Environmental Clearance (EC) for the project. The Terms of Reference (ToRs) for 1200 MW were earlier issued by Ministry vide letter No. J-12011/19/2011-IA-I dated 30.10.2011, amended for 1856 MW dated 12.06.2013 and further extended vide letter dated 01.10.2015.

b. Due to various reasons, further progress for project development was not carried out by JKSPDC. A Memorandum of Understanding (MOU) was signed on 03.01.2021 between JKSPDC and NHPC Limited for development, commissioning, implementation, operation and maintenance of Sawalkote H.E. Project on Build, Own, Operate and Transfer (BOOT) basis for a lease period of 40 (forty) years from the commercial operation date (COD).

c. ToR transferred from "M/s J&K Power Development Corporation" to "M/s NHPC Limited" vide ToR Identification No.: TO25A0501JK5254914T dated 20.08.2025. Stage-I Forest Clearance for 847.17 ha of forest land has been granted vide MoEF&CC letter dated 10.07.2025.

v. **Land requirement:** Total 1401.350 Ha land required for construction of the project in which Forest Land is 847.17 ha and Non Forest Land is 554.18 ha. There is no change in the overall land requirement for the proposed project. However, as per the forest proposal, for the diversion of forest land, the total forest area need to be diverted for Sawalkote HEP is 847.17 ha. In addition to 684.15 ha reserve forest, 162.02 ha revenue forest is also considered under forest diversion proposal of Sawalkote HEP. Forest Clearance Stage-I (in-principle) approval has been granted by MoEF&CC (Forest Conservation Division) on 10.07.2025.

Forest Land Requirement – Legal Status

S. No.	Legal Status	Forest Division	Forest Land (Ha)

1	Reserved Forest	Mahore Forest Division	39.60
2	Reserved Forest	Ramban Forest Division	289.58
3	Reserved Forest	Batote Forest Division	165.40
4	Reserved Forest	Udhampur Forest Division	189.75
5	**Revenue Forest**	**Ramban Forest Division**	**42.70**
6	**Jungle Jhari land**	**Batote Forest Division**	**120.14**
	Total		**847.17**

Land Requirement - Comparison

S. No.	Description	As per EIA 2016				Revised (2025)		
		Forest (Ha)	Private (Ha)	Govt. (Ha)	Total (Ha)	Forest (Ha)	Non-Forest (Ha)	Total (Ha)
1	Reservoir /Submergence area involving (Ramban , Udhampur & Reasi Districts)	499.55	136.65	522.55	1158.75	663.56	496.17	1159.73
2	Open works - Power Intake, dam, plunge pool, DT outlet, TRT outlet: 14 Ha x 1.3 (M.F) = 18.20 Ha (Udhampur)	18.20			18.20	18.21		18.21
3	Underground works – left bank (HRT, Power house, TRT and access tunnels) 78 Ha x 1.3 (M.F) = 101.40 Ha (Udhampur)	101.40			101.40	101.40		101.40
4	Underground works – right bank (Diversion tunnels and access tunnels) 32 Ha x 1.3 (M.F) = 41.60 Ha (Reasi)	41.60			41.60	39.60		39.60
5	Quarry (Plot No 12) (Udhampur)	12.00			12.00	12.00		12.00
6	Muck Disposal Area (Ramban)	8.00	18.00	15.00	41.00	9.00	33.00	42.00
7	Roads with in Project site	1.00	1.00		2.00	1.00	1.01	2.01
8	Explosive magazine (plot no. 15) (Udhampur)	2.40			2.40	2.40		2.40

9	Site Installation and facilities			2.00	2.00		2.00	2.00
10	Workers colony (at Pari village) Plot n o 6, 7 and 8 (Total Area) (Ramban)		7.00	2.00	9.00		9.00	9.00
11	Colony /offices/ fabrication yard At Ta nger village Plot no 1, 2, 3, 4 and 5 (R amban)		13.0 0		13.0 0		13.00	13.0 0
	Grand Total	**684. 15**	**175. 65**	**541. 55**	**140 1.3 5**	**847. 17**	**554.1 8**	**140 1.3 5**

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

The entire study area falls under 3 districts, i.e., Ramban, Udhampur, and Reasi. In the project, a total of 121 villages and 2 towns fall within the study area. Out of 121 villages, 89 are in Ramban district (12 villages in Banihal Tehsil and 77 villages in Ramban Tehsil), 23 are in Udhampur district (23 villages in Udhampur Tehsil), and 9 are in Reasi district (5 villages in Gool Gulabgarh Tehsil and 4 villages in Reasi Tehsil). Two towns fall in the Ramban tehsil of the Ramban district.

The total population of the study area is 217028 of which 114222 are males (52.63%) and102806 are females (47.36%). There are 41809 households. Sex ratio was found to be 900 females per 1000 males. The population of Scheduled Castes is 17091 which is 7.87% of the total population of which 8777 are Scheduled Caste males and 8314 are Scheduled Caste females. The population of Scheduled Tribes is 37776 which is 17.40% of the total population of which 19866 are Scheduled Tribe males and 17911 are Scheduled Tribe females.

About 35.44% of the population is engaged in different kinds of works. Of the total working population, 54.93% are Main Workers and the remaining 45.06% are Marginal Workers.

The majority of the working population (63.13%) is engaged in agricultural activities, out of which 57.17% are Cultivators and 5.96% are Agricultural Labours. 3.08% of the working population is engaged as Household Industrial Workers and about 33.77% are in miscellaneous services.

Demographic Profile

Table : **Comparison of Demographic Profile**

Village Name	Households	Households	Population (	Population (M

	(2011 Census)	(Mission Antyodaya 2020)	2011 Census)	ission Antyodaya 2020)
Pari	29	39	130	179
Tangar	82	305	343	1,622
Kundi	153	220	759	913
Sangaldan	161	130	876	604
Marog	238	90	1195	302

Famroot	259	300	15119	19000
Gandri	338	456	15911	20053
Harog	373	405	21139	18223
Seri	409	309	2023	21887
Kangga	488	560	24533	31155
Pernote	678	485	32600	20300
Metra	682	688	41108	42227
Rambban (M	729	–	3596	29888 (Project

C)				ed, 2021)
TOTAL			23992	23943

The comparative analysis of demographic data from Census 2011 and Mission Antyodaya 2020 provides a clear understanding of the household and population trends in the project affected villages. 12 villages have identified as affected villages along with one municipal corporation (Ramban). A comparison is made based on available census data of the population in the project affected villages. (Sources: Census of India 2011 & Mission Antyodaya 2020)

As can be seen from the above table, there is no change in the population of project affected villages. However, due to re-classification of census boundaries and internal migration, there is increase as well as decrease of population at village level. Tangar is a census village, which presently considered as semi-urban area has seen lot of migration and therefore, change in demography is observed. Between 2011 and 2020, the number of households has generally increased, suggesting fragmentation of families and rising housing demand. Ramban Municipal Council (MC) shows a slight projected decline in population, which may indicate migration to nearby urban centers or reclassification of census boundaries.

vii. **Water requirement:** Project has a gross storage capacity of 530 MCM with 23.84 MCM operational pondage. The design discharge is 159.73 m^3/s per 225 MW unit and 39.97 m^3/s for the 56 MW auxiliary unit, with total intakes handling up to 519.16 m^3/s in Stage-I and 319.46 m^3/s in Stage-II. For environmental flows, the project will release 39.97 m^3/s during lean season, 159.73 m^3/s in non-monsoon months, and about 571.89 m^3/s during monsoon.

viii. **Project Cost:** The estimated project cost is Rs **31380.61 Crore**. Total capital cost earmarked towards Environment Management Plan/environmental pollution control measures is Rs.**59400.77** lakhs (revised).

ix. **Project Benefit:** The project will give direct and indirect jobs to local people, with priority to affected families. A Rehabilitation & Resettlement Plan of ₹19,000 lakh and ₹3,000 lakh for CER has been proposed. The project will improve living standards by providing roads, health, education, and livelihood opportunities.

x. **Environmental Sensitive area:** No project component falls in any notified protected area. Nearest Protected Area to the Project Components is Kishtwar High Altitude National Park which is at a distance of around 62.8 km (with ESZ boundary 57.6 km away) from tip of proposed reservoir area. Proposed dam is proposed on Chenab River**.**

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

- A MOU was signed between JKSPDC and NHPC Limited for development, operation and maintenance of Sawalkot H.E. Project on BOOT basis for a lease period of 40 (forty)

years dated 03/01/2021.

· CEA-HY-12-20/1/2021-HPA DIVISION I/514774/2025 Dated: 14/07/2025

xii. **Resettlement and rehabilitation:**

A total of 13 villages from two tehsils viz. Ramban and Gool Sangaldan of Ramban district will be affected due to acquisition of land for the construction of components of the Sawalkot HEP. A total of 1477 PAFs belonging to 575 households with a total population of 3977 have been identified as affected families by the project authorities and same list have been used for socio-economic survey and preparation of R&R Plan. During the survey 28 persons have been identified as vulnerable persons i.e. widow and disabled. Keeping in view that displaced population is of the order of 3977 persons; an area of 50 hectares is suggested to be acquired for development of resettlement colony.

xiii. **Availability of Schedule-I species in study area:** As per the Wildlife (Protection) Amendment Act, 2022, 15 mammals (Common Leopard, Mainland Leopard Cat, Jungle Cat, Indian Grey Mongoose, Small Indian Mongoose, Golden Jackal, Red Fox, Bengal Fox, Wild Dog/Dhole, Asiatic Black Bear, Himalayan Weasel, Common Otter, Barking Deer/Northern Red Muntjac, Himalayan Goral and Indian Crested Porcupine); 5 birds (Egyptian Vulture, Himalayan Griffon, Golden Eagle, Himalayan Monal and Kaleej Pheasant); and 5 herpetofauna (Rat Snake, Red Sand Boa, Indian Cobra, Russell's Viper and Bengal Monitor Lizard) species are listed as Schedule I species.

xiv. **Chronology of Approvals/Clearances:**

S. No.	Activity	Date	Remarks
1	Scoping Clearance/ TOR	13/10/2011	For 1200 MW, in favour of JKSPDC Ltd.
2	Amendment of TOR	12/06/2013	For 1856 MW, in favour of JKSPDC Ltd. *(CEA approved an aggregate installed capacity o f 1,856 MW to be developed in two Stages, i.e. 1,406 MW in Stage-I (1,350 MW in the main an d 56 MW in auxiliary powerhouse) and 450 MW in Stage-II.)* TOR Valid for 2 years from the date of issue o f this letter for submission of EIA/EMP report along with public consultation.
3	Extension of TOR va lidity	01/10/2015	1856 MW TOR for further period of one more year in favour of JKSPDC Ltd.
4	Public Hearing	18/01/2016	District Udhampur
		21/01/2016	District Reasi
		28/01/2016	District Ramban
5	Appraisal by EAC	30/12/2016	***Deferred for the next EAC meeting*** Deferred for detailed deliberations on Hydro-geological aspects of the project, e-flow deter

S. No.	Activity	Date	Remarks
			mination and downstream free stretches, etc.
6	Appraisal by EAC	30-31/01/2017	***Recommended for EC***
7	ADS raised by MoEF&CC	07/03/2017	Request for submission of Stage-I Forest clearance
8	Delisted for MoEF&CC Portal	04/08/2017	
9	Techno-Economical Clearance	18/04/2018	CEA accorded appraisal to Sawalkot HEP (1856 MW) in favour of JKSPDC Lid.
10	Memorandum of Understanding (MOU) between JKSPDC & NHPC Ltd.	03/01/2021	A MOA was signed between JKSPDC and NHPC Limited for development, operation and maintenance of Sawalkot H.E. Project on BOOT basis for a lease period of 40 (forty) years.
11	Catchment Area Treatment Plan	01/04/2025	Revised CAT Plan in respect of Sawalkot HEP approved by PCCF & HoFF, Govt. of Jammu & Kashmir.
12	Stage I Forest Clearance	10/07/2025	For **847.17 ha** of forest land Stage I Forest Clearance was accorded by MoEF&CC in favour of NHPC Ltd. Compliance of the conditions in the Forest Clearance Stage I is under process.
13	Revalidation of TEC	14/07/2025	CEA extend the validity of appraisal to Sawalkot HEP (1856 MW) in favour of NHPC Lid. For further one more year, i.e. upto 17/04/2026 on the same terms and conditions as mentioned on OM dated 18/04/2018.
14	Transfer of TOR	20/08/2025	From “M/s J&K Power Development Corporation” to “M/s. NHPC Limited” All the points stipulated in the ToR letter no. J-12011/19/ 2011-IA-I dated 12/06/2013 shall remain unchanged.
15	Biodiversity & Wildlife Conservation and Management Plan	27/08/2025	Approved by Office of PCCF (Wildlife)/ Chief Wildlife Warden, Govt. of Jammu & Kashmir.

xv. **Baseline Environmental Scenario:**

The field surveys for the collection of primary data commenced from March 2012 and were completed in August 2012 covering winter, pre-monsoon /summer and monsoon to

collect data/ information on terrestrial ecology and physical environment parameters. Further, fresh baseline data has been collected for three seasons in July 2022 to May 2023 for monsoon, winter and pre-monsoon season to find out any Environmental base line data changes. The data has been compared with the data collected in 2012.

a. Additional Base line data collection: Ambient Air quality and noise monitoring was carried out at same 6 locations. Surface water quality was monitored at 9 locations during 2022-23 as compared to 8 locations during 2012. All the 8 locations of 2012 were covered in 2022-23 study with new location added is SW9 (Mandiyal Khad near Tangar Village), which is the left bank tributary of Chenab River and located on upstream of proposed dam site. Ground water samples were collected and analyzed from 3 locations. Comparison could not be made as there were no ground water samples in earlier EIA. Soil samples were collected at 9 locations and compared with 8 locations from earlier EIA. Vegetation sampling and transects were laid at 9 locations and compared with that of earlier EIA report.

b. Comparison of Baseline Data:

1. **Ambient Air quality**: In 2012, the maximum $PM_{2.5}$ levels ranged from 9.2 µg/m³ at AQ6 to 31.9 µg/m³. Whereas in 2022–23, significant increases were observed at most locations, with values ranging from 16.2 µg/m³ to 50.9 µg/m³. Similarly, PM_{10} concentrations showed a rise over the decade. In 2012, maximum PM_{10} ranged from 10.8 µg/m³ to 40.5 µg/m³. Whereas in 2022–23, maximum levels increased to 26.6 µg/m³ and 88.4 µg/m³, indicating higher dust and vehicular emissions. However, the concentration of Particulate matters are well within the permissible limits.

2. **Surface Water quality**: All the samples during 2012 baseline studies as well as during 2024-25 baseline studies fall under Class B as per "Water Quality Criteria of Central Pollution Control Board" i.e., Outdoor bathing (Organised), which shows the presence of anthropogenic pollution sources in the area.

   · **pH**: Across all sites and seasons, pH values remain within the permissible range (6.5–8.5). A marginal increase is observed in recent years (2022–23) during winter and pre-monsoon, indicating slightly more alkaline water.
   · **Dissolved Oxygen (DO):** DO levels have generally decreased over the past decade in all seasons, especially during winter and monsoon. Lower DO in 2022–23 suggests increased organic load or reduced self-aeration capacity of water bodies.
   · **Electrical Conductivity (EC) and Total Dissolved Solids (TDS**): A clear increase in EC and TDS values is observed in 2022–23 compared to 2012 across all seasons. The rise is most prominent during the monsoon, possibly due to runoff carrying dissolved solids and ions from surrounding areas.
   · **Hardness (Total, Calcium, Magnesium):** Total hardness, as well as calcium and magnesium concentrations, have increased significantly in 2022–23. The increase is more evident in winter and monsoon seasons, pointing towards higher leaching of minerals and anthropogenic inputs.
   · **Sodium and Potassium Ions:** Both sodium and potassium levels exhibit a rising trend across all sites and seasons. This indicates increasing contribution of domestic and agricultural activities (fertilizer use, detergents, sewage input).
   · **Biological Oxygen Demand (BOD):** BOD levels remain relatively low but show a slight increase in 2022–23 compared to 2012. The trend suggests gradual organic pollution, though still within acceptable limits.
   · **Conclusion:** These changes indicate growing influence of anthropogenic activities

(domestic wastewater, road construction, runoff from settlements and agriculture) on the water bodies. This shift can be attributed to ongoing infrastructure activities, including the widening and strengthening of National Highway-44 passing through the study area, along with developmental works linked to the expansion of Ramban Town.

3. **Soil quality:** In the present study (2022-23), the soil samples were collected on the same 6 locations as in the study conducted during 2012. However, a few parameters differ between the studies. For instance, Total Nitrogen (mg/kg) was quantified in 2012, whereas Available Nitrogen (kg/ha)was quantified in the 2022–23 study. In 2012, porosity was measured in g/cm², while in 2022–23 it was measured as a percentage (%).The analysis of the soil data reveals several significant changes between the years 2012 and 2022-23. Comparison of different year data shows that the Soil texture has shifted variably, with increases in sand or clay depending on site. Soil fertility has declined due to reduced organic matter, nitrogen, phosphorus, and potassium. Base cations (Ca, Mg, Na) show major depletion, indicating nutrient loss and possible leaching. Soil pH shifted towards neutral, which is favorable for crops.

   Conclusion: There has been a progressive decline in nutrient status and organic matter content over the past decade, indicating stress on soil fertility largely due to anthropogenic pressures and natural processes.

4. **Floristic Diversity**: In the present study, a list of 310 species of angiosperm has been compiled as compared to the list of 304 plant species reported in the previous study.

   As per data collected from July 2022 to May 2023, a total number of 112 plant species of angiosperm, belonging to 45 family, were sighted and recorded in the study area. The number of gymnosperms, pteridophytes, bryophytes and lichens remain unchanged. From 2012 to 2023, both trees and shrubs increased in number across all sites. The number of trees grew steadily, while shrubs showed a more pronounced rise. In comparison to the data from 2012, the diversity pattern of trees increased across all sites over the decade. Shrubs indicates a modest drop in diversity. The decline in shrub diversity may be due to an increase in species such as *Dodonaea viscosa, Artemisia nilagirica,* and *Nerium oleander,* which are better adapted to grow in degraded lands.

5. **Faunal Diversity:** The Wildlife (Protection) Amendment Act, 2022, amends the existing Wild Life (Protection) Act, 1972. After amendment, there are significant changes in the conservation status of faunal species.
   No additional mammalian species was reported in the present study. However, 15 species of avifauna, 12 species of herpetofauna (reptiles) and 1 species of butterflies have been added to the present study.
   As per WPAA 2022, 15 species of mammals, 05 species of avifauna and 05 species of herpetofauna reported from the study area are under Schedule-I.

6. **Fish diversity**: Experimental fishing in the Chenab River and its tributaries (2022–23 survey) confirmed the presence of *Schizothorax richardsonii*. No new species were recorded compared to the 2012 study.

c. **E flows: As per ToR conditions** "*the minimum environment flow shall be 20% of the flow of four consecutive lean months of 90% dependable year; 30% of average monsoon flow the flow for remaining months shall be in between 20-30% depending on the site-specific study*". Keeping the TOR condition, a scientific study has been undertaken to establish the flow requirement Following can be concluded from the hydrodynamic modeling exercise: The e-flows to be released by the project have been taken as per

recommendation of study. *No changes in e-flows* for the project are proposed to be made since the proposed e-flows are sufficient to maintain the required water depth as per the study for sustenance for aquatic ecology of Chenab River

d. The details base line data are as under:

Period — **From December 2012 to August 2012 and December 2024 to April 2025**

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

Core Zone

Parameter	Unit	Min	Max	Standards
$PM_{2.5}$	mg/m^3	15.10	53.30	34.20
PM_{10}	mg/m^3	25.00	90.70	57.85
SO_2	mg/m^3	4.30	13.30	8.80
NO_2	mg/m^3	5.10	22.00	13.55

Buffer Zone

Parameter	Unit	Min	Max	Standards
$PM_{2.5}$	mg/m^3	27.80	46.00	36.90
PM_{10}	mg/m^3	61.50	84.40	72.95
SO_2	mg/m^3	7.80	10.90	9.35
NO_2	mg/m^3	11.10	18.20	14.65

Incremental GLC Level

Criteria Pollutant	Unit	Baseline Concentration [A]	Predicted incremental value considering worst case stability class [B]	Total GLC [A]+[B]	
PM_{10}	mg/m^3	29.8	7.45	37.25	
$PM_{2.5}$	mg/m^3	18.2	4.55	22.75	
SO_2	mg/m^3	4.9	5.88	10.78	
NO_2	mg/m^3	5.9	7.08	12.98	

River water samples (09 samples)

Core Zone

S. No.	Parameters	Min	Max	Standards
1	pH	7.74	8.4	8.5
2	Total Dissolved Solids, mg/L	80.6	250	0
3	Dissolved Oxygen (mg/l)	8.8	12.2	6
4	Chloride (as Cl), mg/L	12.2	39.9	0
5	Total Hardness (as CaCO3), mg/L	69	118	0
6	Biological Oxygen Demand (mg/l)	0.9	1.3	2
7	Chemical Oxygen Demand (mg/l)	3.7	5.1	0
8	Total Coliform (MPN/100 ml)	110	220	50

Buffer Zone

S. No.	Parameters	Min	Max	Standards
1	pH	7.55	8.46	8.5
2	Total Dissolved Solids, mg/L	84.5	205	0
3	Dissolved Oxygen (mg/l)	6.3	12.3	6

4	Chloride (as Cl), mg/L	5.9	32.6	0
5	Total Hardness (as CaCO3), mg/L	44	95.8	0
6	Biological Oxygen Demand (mg/l)	0.7	1.3	2
7	Chemical Oxygen Demand (mg/l)	2.9	5	0
8	Total Coliform (MPN/100 ml)	50	140	50

Pond water samples quality at –locations

-

Ground Water samples at 3 locations

Core Zone

S. No.	Parameters	Min	Max	Desired Limits	Permissible Limits
1	pH	7.23	7.4	6.5	8.5
2	Total Dissolved Solids, mg/L	593	605	500	2000
3	Chloride (as Cl), mg/L	10.9	17.4	250	1000
4	Total Hardness (as CaCO3), mg/L	59.8	69.7	200	600
5	Fluoride (as F), mg/L	0	0	1.0	1.5

Buffer Zone

S. No.	Parameters	Min	Max	Desired Limits	Permissible Limits
1	pH	7.2	7.5	6.5	8.5
2	Total Dissolved Solids, mg/L	397	642	500	2000

3	Chloride (as Cl), mg/L	13.4	22.8	250	1000
4	Total Hardness (as CaCO3), mg/L	61.2	87.1	200	600
5	Fluoride (as F), mg/L	0	0	1	1.5

Noise levels Leq (Day & Night) at 6 Locations

Zone	Category	Leq Day dB(A)		Leq Night dB(A)		Prescribed Limits	
		From	To	From	To	Day	Night
Core	Residential	48.3	56.2	37.3	43.2	55	45
Buffer	Commercial	52.7	63.3	40.5	49.4	65	55

Soil Quality at 6 Locations

Core Zone

S. No.	Parameters	Min	Max	Prescribed Limits
1	Calcium (mg/kg)	2448	3125	500
2	Magnesium (mg/kg)	108	129	500
3	Nitrogen (kg/ha)	261	356	500
4	Phosphorus (kg/ha)	31.4	39.7	50
5	Potassium (kg/ha)	125.1	180	500
6	Carbon (%)	0.42	0.77	4
7	Sodium Absorption Ratio	0.18	0.85	10
8	Salinity (ppt)	0	0	0

Buffer Zone

S. No.	Parameters	Min	Max	Prescribed Limits
1	Calcium (mg/kg)	1094	2670	500
2	Magnesium (mg/kg)	95	162	500
3	Nitrogen (kg/ha)	261	356	500
4	Phosphorus (kg/ha)	18.9	32.3	50
5	Potassium (kg/ha)	81	210	500
6	Carbon (%)	0.24	0.98	4
7	Sodium Absorption Ratio	0.73	1.59	10
8	Salinity (ppt)	0	0	0

Flora& Fauna

Schedule-I species observed in the study area:
As per the Wildlife (Protection) Amendment Act, 2022, 15 mammals (Common Leopard, Mainland Leopard Cat, Jungle Cat, Indian Grey Mongoose, Small Indian Mongoose, Golden Jackal, Red Fox, Bengal Fox, Wild Dog/Dhole, Asiatic Black Bear, Himalayan Weasel, Common Otter, Barking Deer/Northern Red Muntjac, Himalayan Goral and Indian Crested Porcupine); 5 birds (Egyptian Vulture, Himalayan Griffon, Golden Eagle, Himalayan Monal and Kaleej Pheasant); and 5 herpetofauna (Rat Snake, Red Sand Boa, Indian Cobra, Russell's Viper and Bengal Monitor Lizard) species are listed as Schedule I species.

xvi. **Details of Solid waste/Hazardous waste generation**: Generation of Municipal Solid Waste- Bio degradable (5475.0 Tons in 7.5 years), Generation of Non degradable (5625.0 Tons in 7.5years). Solid waste management shall involve Reuse/Recycling, Storage/Segregation, Collection and Transportation and Disposal of Degradable

component, non-degradable component& bio-medical waste.

xvii. **Muck Disposal Plan**: Total quantity of Muck to be dumped: 77.30 lakh cum. Two muck disposal areas named as MDS-1 and MDS-2 have been identified located on the left bank of Chenab river upstream of Dam site, wherein one dumping siteMDS-1 is located near Pari village and other dumping site MDS-2 is located near Tangar village. Total capacity of these sites is about 48.2 lakh cum. Bothof the muck disposal sites have been identified in vicinity of the area where the muck is likely to be generated in order to minimize the cost of transport and mitigation of dust pollution which may occur during transportation.

xviii. **Public Hearing:** Public Hearing for the proposed Sawalkot Hydroelectric Project (1856 MW) was conducted by the J&K State Pollution Control Board in three districts of the project area, viz. Udhampur on 18.01.2016, Reasi on 21.01.2016, and Ramban on 28.01.2016.

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

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

1. EAC Meeting Details:

EAC meeting/s	40th Meeting
Date of Meeting/s	26.09.2025
Date of earlier EAC meetings	· 29-30/04/2011 & 2-3/06/2011 (Scoping Clearance/ TOR for 1200 MW) · 22-23/02/2013 (Amendment of TOR for 1856 MW) · 20-21/07/2015 (Extension of TOR validity for 1856 MW) · 30/12/2016 (Appraisal by EAC for Environmental Clearance) · 30–31/01/2017 (Recommended for Environmental Clearance) · 20/08/2025 (Transfer of TOR from JKSPDC Ltd. to NHPC Ltd.)

2. Project details:

Name of the Proposal	Sawalkot HE Project (1856 MW)
Proposal No.	IA/JK/RIV/551637/2025
Location (Including Coordinates)	State: Jammu & Kashmir District: Ramban, Udhampur and Reasi Location of dam & Power House Site: 33° 0′ 11″ N 75° 06′ E
Company's Name	M/s NHPC LMITED
CIN no. of Company/user agency	L40101HR1975GOI032564
Accredited Consultant and certificate no.	Name: R S Envirolink Technologies Pvt. Ltd. Certificate No.: NABET/EIA/25-28/RA 415

Project location (Coordinates /River/ Reservoir)	State: Jammu & Kashmir District: Ramban, Udhampur and Reasi Location of dam & Power House Site: 33° 0′ 11″ N 75° 06′ E River- Chenab River
Inter- state issue involved	No
Proposed on River/ Reservoir	Chenab River
Type of Hydro-electric project	Run-of-river
Seismic zone	V

3. Category details:

Category of the project	A
Capacity / Cultural command area (CCA)	1856 MW
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	-

4. ToR/EC Details:

ToR Proposal No.	· F. No. J-12011/19/2011-IA-I · IA/JK/RIV/9862/2012 (TOR amendment) · IA/JK/RIV/547496/2025 (Transfer of ToR)
EAC meeting date	· 29-30/04/2011 & 2-3/06/2011 (Scoping Clearance/ TOR for 1200 MW) · 22-23/02/2013 (Amendment of TOR for 1856 MW) · 20-21/07/2015 (Extension of TOR validity for 1856 MW) · 30/12/2016 (Appraisal by EAC for Environmental Clearance) · 30–31/01/2017 (Recommended for Environmental Clearance) · 20/08/2025 (Transfer of TOR from JKSPDC Ltd. to NHPC Ltd.)
ToR Letter No.	· J-12011/19/2011-IA-I
ToR grant Date	· 30.10.2011 (for 1200 MW) · 12.06.2013 (for 1856 MW) · 01.10.2015 (validity extension of TOR) · 20.08.2025 (Transfer of ToR)
Cost of project	Rs. 31380.61 Crore
Total area of Project	1401.35 Ha
Height of Dam from River Bed (EL)	192.5 m from deepest foundation level

Details of submergence a rea	1159.73 ha
District to provide irrigati on facility (if applicable)	NA
Details of tunnels on upp er level & lower level and length of canal (if applica ble)	HRT Number: 03 ; Length 200 m each TRT Number: 04 TRT-1=1743m; TRT-2=1720m; TRT-3=199m; TRT-4=1915m
No. of affected Village	112
No. of Affected Families	1477
Project Benefits	**Social Benefits** A number of marginal activities and jobs will be available to the l ocals during the construction phase. Local Area development fac ilities in education, medical, transportation, road network and ot her infrastructure. An opportunity for small- scale and cottage in dustries to develop in the area. **Financial Benefits** Total Design Energy is 7533.90 MU. An investment of Rs. 3138 0.61 cr will be made for the project.
R&R details	A total of 13 villages from two tehsils viz. Ramban and Gool San galdan of Ramban district will be affected due to acquisition of l and for the construction of components of the Sawalkote HEP. A total of 1477 PAFs belonging to 575 households with a total population of 3977 have been identified as affected families by the project authorities and same list have been used for socio-e conomic survey and preparation of R&R Plan. During the survey 28 persons have been identified as vulnerable persons i.e. wido w and disabled. There are 1477 displaced families requiring rese ttlement. Keeping in view that displaced population is of the ord er of 3977 persons; an area of 50 hectares is suggested to be a cquired for development of resettlement colony. A budgetary provision of Rs. 19000.00 lakh has been kept towa rds implementation of R&R plan.
Catchment area/ Comman d area	Catchment Area: 19,475 sq km
Types of Waste and quant ity of generation during c onstruction/Operation	Municipal Solid Waste during construction - Degradable (5475 T ons in 7.5 years), Non degradable (5625 Tons in 7.5 years)
Material used for blasting and its composition as pe r DGMS standards.	Explosives will be required to be stored at site during constructio n period. It is proposed to install a 50 T magazine to cater to requ irement of project works. Magazine structure means a building sp

<table>
<tr><td></td><td>ecially constructed in accordance with a design approved by the C hief Controller and intended for storage of more than 5 kg of expl osives. Distances between two magazines or between a magazine and other buildings, road, railway, etc. is governed by the Safety Distances given at Schedule VIII of the Explosives Rules, 1983 and are based on the category and quantity of explosive material stor ed.</td></tr>
<tr><td>E-Flows for the Project</td><td>
<table>
<tr><th></th><th>Season</th><th colspan="2">EAC recommendation 20 17*</th></tr>
<tr><th></th><th></th><th>Cumec</th><th>Per Cent</th></tr>
<tr><td rowspan="3">E-Flows (Cumec)</td><td>Lean</td><td>39.97</td><td>20.0</td></tr>
<tr><td>Monsoon</td><td>571.89</td><td>41.02</td></tr>
<tr><td>Non-monsoon/ Non-lean</td><td>159.73</td><td>25.0</td></tr>
</table>
</td></tr>
<tr><td>Is Projects earlier studied in Cumulative Impact asse ssment & Carrying Capaci ty studies(CIA&CC) for Ri ver in which project locat ed. If yes then
c) E-flow with TOR/Reco mmendation by EAC as p er CIA&CC study of River Basin.
d) If not the E-Flows mai ntain criteria for sustain ing river ecosystem.</td><td>No</td></tr>
<tr><td>Details on provision of fis h pass</td><td>Due to the height of the dam, it seems unrealistic to build functi onal fish ladders or fish lifts that can help the Mahseer to migrat e past the Sawalkote dam. In addition, it is unlikely that fry and y oung fish that drift or actively migrate downstream will survive p assing through the turbines or the overflow from the dam. The fi sh stocked upstream will therefore not contribute to the populat ion increase of Mahseer in the lower Chenab reaches. The biolog ically and economically best alternative to compensate for the o bstructed migration possibilities of the Mahseer is the option of artificial hatching and continuous restocking of the reservoir. It i s therefore recommended to build a new hatchery in the Sawalk ote Project area.</td></tr>
<tr><td>Project benefit including employment details (no o f employee)</td><td>It is expected that the impletion of 1856 MW Sawalkote will gen erate an employment for 6500 persons approximately in unskille d, semiskilled and skilled categories. The locals shall be given pr eference wherever they are suitable in a particular category.</td></tr>
<tr><td>Area of Compensatory Aff orestation (CA) with tenta</td><td>1951.878 ha; tentative no. of plantation - 1584959</td></tr>
</table>

tive no of plantation.	
Previous EC details	-
EC Compliance Report by R.O, MOEF&CC	-
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	1000

5. Electricity Generation Capacity:

Powerhouse Installed Capacity	1856 MW
Generation of Electricity Annually	7994.73 MU (95% Dependable Year)
No. of Units	8 x 225 MW & 1 x 56 MW

6. Muck Management Details:

No. of proposed disposal area/ (type of land- Forest/Pvt land)	2 nos. MDS 1 – 9 ha (forest land) MDS 2 – 33 ha (non-forest land)
Cross section of proposed muck area, Height of muck with slope.	Attached as Appendix I
Distance of muck disposal area (location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.	170 m from HFL.
Total Muck Disposal Area	42 ha
Estimate Muck to be generated	77.30 lakh Cum
Transportation	The generated muck will be carried in dumper trucks covered with heavy-duty tarpaulin properly tied to the vehicle in line with international best practices. All precautionary measures will be followed during the dumping of muck. Based upon the varying cycle time of 20T Rear Dumpers at different excavation sites and their distance from the disposal site appropriate pollution management will be devised. The Standard practices of pollution abatement and control will be enforced through the contractor.
Monitoring mechanism for Muck Disposal Transportation	The provisions of Monitoring have been kept under proposed Environmental Monitoring Plan.

7. Land Area Breakup:

Private land	175.65
Government land	378.53
Forest Land	847.17
Total Land	1401.35
Submergence area/Reservoir area	1159.73 ha
Additional information (if any)	-

8. Presence of Environmentally Sensitive areas in the study area

Forest Land/ Protected Area/ Environmental Sensitivity Zone	Yes/ No	Details of Certificate/ letter/ Remarks
Reserve Forest/ Protected Forest Land	No	No project component falls in any notified protected area. Nearest Protected Area to the Project Components is Kishtwar High Altitude National Park which is at a distance of around 62.8 km (with ESZ boundary 57.6 km away) from tip of proposed reservoir area.
National Park	No	
Wildlife Sanctuary	No	
Archaeological sites monuments/ historical temples etc.	No	
Additional information (if any)	-	

Availability of Schedule-I species in study area: As per the Wildlife (Protection) Amendment Act, 2022, 15 mammals (Common Leopard, Mainland Leopard Cat, Jungle Cat, Indian Grey Mongoose, Small Indian Mongoose, Golden Jackal, Red Fox, Bengal Fox, Wild Dog/Dhole, Asiatic Black Bear, Himalayan Weasel, Common Otter, Barking Deer/Northern Red Muntjac, Himalayan Goral and Indian Crested Porcupine); 5 birds (Egyptian Vulture, Himalayan Griffon, Golden Eagle, Himalayan Monal and Kaleej Pheasant); and 5 herpetofauna (Rat Snake, Red Sand Boa, Indian Cobra, Russell's Viper and Bengal Monitor Lizard) species are listed as Schedule I species.

9. Public Hearing (PH) Details

Advertisement for PH with date	12/12/2015 – Reasi district 14/12/15 – Ramban district 15/12/15 – Udhampur
Date of PH	21/01/2016 – Reasi district 28/01/2016 – Ramban district 18/01/2016 – Udhampur
Venue	**District** / **Date/Time** / **Venue** Udhampur / 18.01.2016/ 10:00 am / Forest Rest House, Chulna, Village-Pancheri Reasi / 21.01.2016/10:0 / SDM Office complex ,Village

	0 am | Mahore Ramban | 28.01.2016/10:00 am | Project Site, Village Tanger
Chaired by	Meeting at Pancheri was chaired by Additional Deputy Commissioner, Udhampur District Meeting at Mahore was chaired by Additional District Development Commissioner, Reasi District Meeting at Tanger was chaired by Additional Deputy Commissioner, Ramban District
Main issues raised during PH	i. Local Development Facilities – Demand for hospitals, schools, drinking water, roads, and other basic amenities. ii. Employment – Preference for local youth (affected families) in unskilled, semi-skilled, and skilled jobs, and maximum permanent jobs for locals. iii. Skill Development – Establishment of ITI/skill development centres locally (at Udhampur, Mahore, Sawalkote, Ramban), with special priority for local youth training. iv. Road Connectivity – Better road access to project sites, particularly extension from Dugga (Reasi) to Sarthalakote. v. Compensation – Demand for compensation at present/market rates for land, houses, trees, cattle sheds, etc., with revision of stamp duty (circle) rates. vi. Free Electricity – Request for free power supply to affected local areas under submergence. vii. Environmental Concerns – Proper mitigation and management of environmental impacts expected during construction and operation.
No. of people attended	426

10. Brief of base line Environment:

Particulars	**Details**
Period of baseline data collection/Sampling period. (Air, noise, water, land) flora and fauna of the project area, aquatic ecology, etc.	**Parameters** | **Monsoon** | **Winter** | **Pre-Monsoon/ Summer** Soil | August 2012 (Previous) July 2022 (current) | March 2012 (Previous) January 2023 (current) | June 2012 (Previous) May 2023 (current) Air Environment | August 2012 (Previous) July 2022 (current) | March 2012 (Previous) January 2023 (current) | June 2012 (Previous) May 2023 (current) Noise & Traffic | August 2012 (Previous) July 2022 (| March 2012 (Previous) January 2023 | June 2012 (Previous) May 2023

	<table><tr><th>Parameters</th><th>Monsoon</th><th>Winter</th><th>Pre-Monsoon/ Summer</th></tr><tr><td></td><td>current)</td><td>(current)</td><td>(current)</td></tr><tr><td>Water Quality</td><td>August 2012 (Previous) July 2022 (current)</td><td>March 2012 (Previous) January 2023 (current)</td><td>June 2012 (Previous) May 2023 (current)</td></tr><tr><td>Vegetation</td><td>August 2012 (Previous) July 2022 (current)</td><td>March 2012 (Previous) January 2023 (current)</td><td>June 2012 (Previous) May 2023 (current)</td></tr><tr><td>Fauna surveys</td><td>August 2012 (Previous) July 2022 (current)</td><td>March 2012 (Previous) January 2023 (current)</td><td>June 2012 (Previous) May 2023 (current)</td></tr><tr><td>Socio-economic survey</td><td colspan="3">March 2012 (Previous) January 2023 (current)</td></tr></table>
Brief description on hydrology and water assessment as per the approved Pre-DPR:	The proposed Sawalkote HEP is a run of river type development across river Chenab in UT of J&K. The Sawalkote H.E. Project is located on Chenab downstream of the Dharamkund G&D site and upstream of the Akhnoor. The water availability series for the Sawalkote H.E. Project for the period 1975-76 to 2008-09 has been worked out from the 10-daily flow observed at Dhamkund on catchment area proportion basis. Design flood (PMF) estimated at project site is 18711 cumecs. Design discharge of 519.16 m^3/s, 479.19 m^3/s and 319.46 m^3/s
Additional detail (If any)	-

11. Court case details: Nil

12. Status of other statutory clearances

Particulars	**Letter no. and date**
Status of Stage- I FC	Stage-I (in-principle) approval granted by MoEF&CC (Forest Conservation Division) on 10.07.2025. Online Proposal No. FP/JK/HYD/150591/2021
Approval of Central Water Commission	· CEA-HY-12-20/1/2021-HPA DIVISION I/514774/2025 Dated: 14/07/2025
Approval of Central Electricity Authority	· CEA-HY-12-20/1/2021-HPA DIVISION I/514774/2025 Dated: 14/07/2025
Additional detail (If any)	
Is FRA (2006) done for FC-I	Yes FRA Certificates issued by 3 No Districts 1. District Collector, Ramban vide No. DCR/HQ

	A/4146-50 dated 24.02.2023. 2. District Collector, Udhampur vide No. DCU/ SQ/6429-30-50 dated 28.11.2022. 3. District Collector, Reasi vide No. DC/RSI/S Q/22-23/7208 dated 05.12.2022.

3.2.3. Deliberations by the committee in previous meetings

N/A

3.2.4. Deliberations by the EAC in current meetings

40.2.3 The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted by the Project Proponent and the details presented during the meeting. The Committee observed that the proposal pertains to the grant of Environmental Clearance for Sawalkote H.E. Project (1856 MW) in an area of 1401.35Ha located at Village Bhajmasta, Sub-district Ramban, District Ramban, Jammu & Kashmir by M/s NHPC Limited.

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

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

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

· The Committee noted that the Terms of Reference (ToRs) for 1200 MW were earlier issued by Ministry vide letter No. J-12011/19/2011-IA-I dated 30.10.2011, amended for 1856 MW dated 12.06.2013 and further extended vide letter dated 01.10.2015.

· It has been noted by the EAC that the project [proposal number: IA/JK/RIV/53027/2015] was earlier considered by the EAC in its meetings held on 30.12.2016 and 30-31.01.2017 and was recommended for grant of Environmental Clearance (EC) for the project to M/s JKPDC in the EAC meeting held on 31.01.2017. However, the EC could not be issued by the Ministry due to involvement of forest land as the Stage-I forest clearance was not obtained by the PP. Meanwhile PP has been changed from M/s J&K Power Development Corporation (JKPDC) to M/s NHPC limited. Therefore, Terms of reference (ToR) was transferred in favour of M/s NHPC by MoEF&CC on 20.08.2025 from J&K Power Development Corporation (JKPDC).

· PP not submitted Stage-I FC within stipulated time frame, i.e. 18 months; therefore, the PP submitted the proposal on Parivesh-2 for consideration by the EAC in terms of the provisions of the MoEF&CC Office Memorandum dated 19.06.2014 along with Stage-I

Forest Clearance granted by the Ministry vide letter dated 10.07.2025 in favour of NHPC Ltd. The EAC noted that collection of primary data completed in 2012 more than 10 years and PP has collected a fresh baseline data for three seasons in July 2022 to May 2023 for monsoon, winter and pre-monsoon season. The data has been compared with the data collected in 2012. Additionally, PP has submitted additional EIA report along with fresh baseline data.

- The EAC noted that there have not been significant changes in the environmental baseline data from 2012 to May 2023. However, a comparison with the 2012 data indicates an increasing influence of anthropogenic activities such as domestic wastewater discharge, road construction, and runoff from settlements and agricultural areas on the water bodies.
- The EAC noted that the total land requirement for the project was earlier 1401.35 ha, and in the fresh proposal, the land requirement remains unchanged. However, as per the forest proposal, for the diversion of forest land, the total forest area need to be diverted for Sawalkote HEP is 847.17 ha. In addition to 684.15 ha reserve forest, 162.02 ha revenue forest is also considered under forest diversion proposal of Sawalkote HEP. The Stage-I (in-principle) Forest Clearance approval has been granted by MoEF&CC for 847.17 ha forest land on 10.07.2025. There is no national park, wildlife sanctuary, Biosphere Reserve, Tiger/Elephant Reserve, Wildlife Corridor etc. within 10 km distance from the project site. Nearest Protected Area to the Project Components is Kishtwar High Altitude National Park which is at a distance of around 62.8 km (with ESZ boundary 57.6 km away) from tip of proposed reservoir area.
- The EAC observed that the present estimated project cost is Rs. 31,380.61 crore, which has increased from the earlier estimated cost of Rs. 22,190.66 crore. Additionally, the total capital cost earmarked towards the Environmental Management Plan (EMP)/environmental pollution control measures was Rs. 56,249.95 lakh, as compared to the earlier allocation of 39285.18 Lakh (in 2016). The Committee noted that although the overall project cost has escalated over time, the EMP budget has not been increased proportionately. Accordingly, the Project Proponent (PP) has submitted the revised EMP budget of Rs. 59,400.77 lakh. The EMP cost is revised from Rs. 39285.18 Lakh (2016) to Rs. 59400.77 Lakh (2025). The details of cost of Environmental management Plan (EMP) are as under:

Project Revised EMP Budget in respect of Sawalkote HE project					
Management Plans	**Amount (Rs. in lakhs)**		**Percentage(%) on current price level**	**Remarks**	
	EIA Report, 2016	**Revised (2025)**			
Environment Management					
Biodiversity Conservation & Management Plan	340	708	108.24	Revised as per approved plan	
Catchment Area Tre	5929	22525.77	279.93	Revised as per ap	

atment Plan				proved plan	
Fishery Conservation & Management Plan	488	503	3.07	Revised based on current price	
Solid Waste Management Plan	1088	1360	25	Revised based on current price	
Public Health Delivery System	962	1202	24.95	Revised based on current price	
Energy Conservation Measures	870	1085	24.71	Revised based on current price	
Muck Disposal Plan	5128	6922	34.98	Revised based on current price	
Landscaping and Restoration Plan of Quarry & Working Areas	322.18	402	24.77	Revised based on current price	
Air & Water Management Plan	282.5	353	24.96	Revised based on current price	
Reservoir Rim Treatment	1234	1542	24.96	Revised based on current price	
Rehabilitation and Resettlement Plan (including Rs. 3000 lakh for Local Area Development Plan)	22000	22000	0.00	Under implementation, provisional cost. Final cost will be as per award issued by Collector	
Environmental Monitoring Programme	331	413	24.77	Revised based on current price	
Dam Break Modelling (including DMP)	310.5	385	23.99	Revised based on current price	
Total	**39285.18***	**59400.77**	**51.20**	**Increased by 51.20%**	

*EMP cost excluding CA&NPV

· It was observed that Public Hearing for the proposed Sawalkot Hydroelectric Project (1856 MW) was conducted by the J&K State Pollution Control Board in three districts of the project area, viz. Udhampur on 18.01.2016, Reasi on 21.01.2016, and Ramban on 28.01.2016. As informed by the PP had informed that there has been no change in the demographic profile of the region, primarily due to the continuing lack of the basic

infrastructure and development interventions. All the key features of the project namely its location, technical parameters, land requirement, project affected villages and families remain unchanged since the last public hearing. The EAC discussed the concerns raised during the Public Hearing (PH) After detailed deliberation, the Committee found the action plan satisfactory, recognizing that the proposed mitigation measures adequately respond to stakeholders' concerns. The EAC was of the view that there is no requirement of fresh public hearing. However, it was emphasized to fulfil the commitments made in time bound manner.

3.2.5. Recommendation of EAC

Recommended

3.2.6. Details of Environment Conditions

3.2.6.1. Specific

Miscellaneous:	
1.	After 5 years of the commissioning of the project, a study shall be undertaken regarding impact of the project on the environment. The study shall be undertaken by an independent agency.
2.	A dedicated team to oversee environmental management activities (at project site) shall be set up comprising Environment Manager having post graduate qualification in Environmental Sciences/ Environment Engineering along with other supporting staff. The Environment Manager Shall report to Project Head directly.
3.	PP shall procure construction material only from those Organizations having all valid legal/statutory clearances/permissions or necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and as amended thereof.
Socio-economic	
1.	Land acquired for the project shall be suitably compensated in accordance with the prevailing guidelines of the state government and provisions under Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
2.	Solar panel be provided to the families living in rural areas within 10 km radius of project with annual maintenance.
3.	School up to 12^{th} Standard with smart classes shall be established and managed to provide free quality education for children from project affected villages/Tribal villages.
4.	Scholarship programme shall be initiated for the youths in the project affected villages.

5.	50 bed multi-specialty hospital shall be established to cater the need of tribal population/locals. The tribal population within 10 km radius of the project/Project Affected Villages shall be given free of cost medical facility.
6.	Skill Development Centre shall be established within 10 km radius of the project and regular training programmes for development and promotion of traditional art/products of tribal/local population. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, the necessary training be provided to the youths for their appropriate engagements in the Project.
7.	Bio-Gas plant shall be installed in the villages in the Project affected area for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.
8.	An institutional mechanism to be developed to ensure the preference of jobs to PAFs and also a policy for preferential treatment for award of sundry works to the PAFs and their dependents.
9.	The compliance of above conditions shall be monitored by IRO, MoEF&CC and regularly site visit once in year. The compliance report of IRO shall be regularly submitted to MoEF&CC.
Disaster Management	
1.	Disposal of the excavated muck and its filling on the low-lying area with proper measures for the stabilization and greenery to minimize the impacts of the generated construction muck shall be taken up pari passu with construction work.
2.	Stabilization of muck disposal sites using biological and engineering measures shall be taken up immediately to ensure that muck does not roll down the slopes and does not pollute the natural streams and water bodies in surrounding area. The plantation on muck disposal site with local species for restoration of ecology and environment of the project site area shall be done as per instructions of the Forest Department.
3.	Necessary control measures such as water sprinkling arrangements, and construction of paved roads leading to muck disposal sites etc. shall be taken up on priority to arrest fugitive dust at all the construction sites.
4.	Solid waste generated, especially plastic waste, etc. should not be disposed of as landfill material. It should be treated with scientific approach and recycled. Use of single-use plastics may be discouraged.
Environmental management and Biodiversity conservation	
1.	On-line monitoring system for the e-flow releases to be installed.
2.	The plastic waste shall be disposed of by recycling and not by land filling.
3.	Local indigenous varieties of plants to be grown and maintained till their full growth including gap filling.
4.	Land acquired for the project shall be suitably compensated with the prevailing guidelines and all commitments made during the Public Hearing shall be fulfilled.

5.	The project-affected population should be resettled and rehabilitated as per the latest R & R Policy.
6.	Six monthly compliance reports shall be submitted by the PP to Regional Office, MoEF& CC, Jammu, J&K without fail until completion of the works.
7.	The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. The budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also be updated proportionately.
8.	The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.
9.	Ambient Air Quality Monitoring Stations for real time data to be installed at project site before commencement of the construction, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.
10.	The Project Proponent shall explore the possibility to undertake tree transplantation, wherever feasible, in consultation with the State Forest Department. Survival of at least 80% of transplanted trees shall be ensured, with monitoring for a minimum period of five years.
11.	Plantation of saplings shall be carried out as a part of the tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the https://merilife.nic.in/

3.2.6.2. Standard

1(c)	**River Valley/Irrigation projects**
Statutory compliance	
1.	The project proponent shall obtain forest clearance under the provisions of Forest (Conservation) Act, 1986, in case of the diversion of forest land for non-forest purpose involved in the project.
2.	The project proponent shall obtain clearance from the National Board for Wildlife, if applicable.
3.	The project proponent shall prepare a Site-Specific Conservation Plan & Wildlife Management Plan and approved by the Chief Wildlife Warden. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report. (in case of the presence of Schedule-I species in the study area).
4.	The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
5.	NOC shall be obtained from National Commission of Seismic Design Parameters (NCSDS) of CWC.
6.	Necessary approval of CEA shall be obtained for those projects having the project cost more than Rs. 1,000 crores.

Air quality monitoring and preservation	
1.	Regular monitoring of various environmental parameters viz., Water Quality, Ambient Air Quality and Noise levels as per the CPCB guidelines at designated locations shall be carried out on monthly basis and a detailed database of the same shall be prepared and recorded. This shall be used as a baseline data for post construction EIA / Monitoring purposes.
2.	Appropriate Air Pollution Control (APC) system shall be provided for all the dust generating points including fugitive dust from all vulnerable sources, so as to comply prescribed standards.
3.	Necessary control measures such as water sprinkling arrangements, etc. bet taken up to arrest fugitive dust at all the construction sites.
4.	Conjunctive use of surface water to be planned in the project to check water logging as well as to increase crops productivity. The field drains shall be connected with natural drainage system (if applicable).
5.	Remodelling of existing natural drains (link drains) and connecting them with irrigated land through constructed field drains, collector drains, etc. are to be ensured on priority basis (if applicable).
6.	Before impounding of the water, Cofferdams for both at the upstream and downstream are to be decommissioned as per EIA/EMP report so that once the project is commissioned; cofferdam should not create any adverse impact on water environment including the rock mass and muck used for the Cofferdam.
7.	As the reservoir will be acting as balancing reservoir and there would be fluctuation of water level during peaking period, efforts be made to reduce impact on aquatic life including impacts during spawning period both at the upstream and downstream of the project.
8.	Water depth sensors shall be installed at suitable locations to monitor e-flow. Hourly data to be collected and converted to discharge data. The Gauge and Discharge data in the form of Excel Sheet be submitted to the Regional Office, MoEF & CC and to the CWC on weekly basis.
9.	Mixed irrigation shall be practised and necessary awareness be given to all the farmers and trained in the use of such systems. Proper crops selection shall be carried out for making irrigation facility more effective (if applicable).
10.	On Farm Development (OFD) works like landscaping, land levelling, drainage facilities, field irrigation channels and farm roads, etc. should be taken up in phased manner prior to the start of irrigation in the entire command area. The Command Area Development Plan should be strictly implemented as proposed in the EIA/EMP report (if applicable).
Noise monitoring and prevention	
1.	All the equipment likely to generate high noise shall be appropriately enclosed or inbuilt noise enclosures be provided so as to meet the ambient noise standards as notified under the Noise Pollution (Regulation and Control) Rules, 2000, as amended in 2010 under the Environment Protection Act (EPA), 1986.
2.	The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.
Catchment Area Treatment Plan	
1.	Catchment Area Treatment (CAT) Plan as proposed in the EIA/EMP report shall be implemented in

	consultation with the State Forest Department and shall be implemented in synchronization with the construction of the project.
Waste management	
1.	Muck disposal be carried out only in the approved and earmarked sites. The dumping sites shall be located sufficiently away from the HFL of the river. Efforts be made to reuse the muck for construction and other filling purposes and balanced be disposed of at the designated disposal sites. Once the muck disposal sites are inactive, proper treatment measures like both engineering and biological measures be carried out so that sites are stabilized quickly.
2.	Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead be used for various purposes as envisaged in the EIA/EMP reports. Efforts be made to avoid one time use of plastics.
Green Belt and Wildlife Management	
1.	Based on the recommendation of Cummulative Impact Assessment and Carrying capacity study of river basin or as per the ToR conditions or minimum 15% of the average flow of four consecutive leanest months, whichever value is higher, shall be released as environmental flow.
2.	Detailed information on species composition particular to fish species from previous study/literature be inventoried and proper management plan shall be prepared for insitu conservation in the streams, tributaries of river and the main river itself for which adequate budget provision be made and followed strictly.
3.	Wildlife Conservation Plan approved by the Chief Wildlife Warden shall be implemented in consultation with the local State Forest Department.
4.	To enrich the habitat of the project site, plantation shall be raised as envisaged in the EIA/EMP report. Plantation to be developed along the periphery of the reservoir in multi-layers with local indigenous species in consultation with the local State Forest Department.
5.	Compensatory afforestation programme shall be implemented as per the plan approved.
6.	Fish ladder/pass as envisaged in the EIA/EMP report shall be provided for migration of fishes. Regular monitoring of this facility be carried out to ensure it effectiveness.
Public hearing and Human health issues	
1.	Resettlement & Rehabilitation plan be implemented in consultation with the State Govt. as approved by the State Govt.
2.	Budget provisions made for the community and social development plan including community welfare schemes shall be implemented in toto.
3.	Preventive measures viz. fuming and spraying of mosquito control shall be done in and around the labour colonies, affected villages, stagnated pools, etc. Provisions be made to not to create any stagnated pools to avoid creation of breeding grounds of the vector borne diseases.
4.	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

5.	Labour force to be engaged for construction works shall be examined thoroughly and adequately treated before issuing them work permit. Medical facilities shall be provided at the construction sites.
Risk Mitigation and Disaster Management	
1.	Early Warning Telemetric system shall be installed in the upper catchment area of the project for advance intimation of flood forecast.
2.	Drilling and blasting shall be done only either by licensed explosive agent or by the proponent after obtaining required approvals from Competent Authorities.
3.	Emergency preparedness plan be made for any eventuality of the dam failure and shall be implemented as per the Disaster Management Plan.
4.	Stabilization of muck disposal sites using biological and engineering measures shall be taken up to ensure that muck does not roll down the slopes and shall be disposed safely and that it does not pollute the natural streams and water bodies in surrounding area. The engineering measures for the muck disposal arrangements be evolved after carrying out required slope stability analysis.
5.	Catchment area treatment plan shall be prepared and sufficient fund shall be provided for afforestation, rim plantation, pasture development, nursery development.
Corporate Environment Responsibility	
1.	The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 30th September, 2020, as applicable, regarding Corporate Environment Responsibility.
2.	Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their long time livelihood generation
3.	The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation/violation of the environmental / forest / wildlife norms/conditions and / or shareholders/ stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
4.	A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
5.	Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
6.	Post EIA and SIA be prepared for the project through a third party and evaluation report be submitted to the Ministry after five years of commissioning of the project.
7.	Multi Disciplinary Committee (MDC) be constituted with experts from Ecology. Forestry, Wildlife, Sociology. Soil Conservation, Fisheries, NGO, etc. to oversee implementation of various environmental

	safeguards proposed in EIA/EMP report during construction of the project. The monitoring report the Committee shall be uploaded in the website of the Company.
8.	Formation of Water User Association/Co-operative be made involment of the whole community be ensured for discipline use of available water for irrigation purposes
Miscellaneous	
1.	The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
2.	The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
3.	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
4.	The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
5.	The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
6.	The project proponent shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities, commencing the land development work and start of production operation by the project.
7.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
8.	The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
9.	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
10.	Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
11.	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
12.	The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
13.	The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the

	requisite data / information/monitoring reports.
14.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
15.	Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

4. Any Other Item(s)

N/A

5. List of Attendees

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

MINUTES OF THE 40TH MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 26TH SEPTEMBER 2025 THROUGH VIDEO CONFERENCE

The 40th 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 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 39th EAC meeting:

The Minutes of the Meeting held on 39th EAC meeting on 12th September, 2025 were confirmed.

Agenda Item No. 40.1

Shirawta Open Loop Pumped Storage Project (1800 MW) in an area of 197.797 ha at Village Khandshi, Rakaswadi, Thoran etc, Sub-district Mawal, District Pune, Maharashtra by M/s The Tata Power Company Limited – Environmental Clearance - reg.

[Proposal No. IA/MH/RIV/550476/2025; F. No. J-12011/38/2023-IA.I (R)]

40.1.1: The proposal is for grant of Environmental Clearance (EC) to the project for Shirawta Open Loop Pumped Storage Project (1800 MW) in an area of 197.797 ha at Village Khandshi, Rakaswadi, Thoran etc, Sub-district Mawal, District Pune, Maharashtra by M/s The Tata Power Company Limited.

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

i. Shirawta Off-stream Open Loop Pumped Storage Project (PSP) with a proposed installed capacity of 1800 MW is located near the Khopoli Hydro Power Plant and Shirawta Dam, Mawal (Maval) Taluka in Pune District of Maharashtra.

ii. The total installed capacity of proposed PSP is 1800 MW (5 x 300 MW + 2 x 150 MW) and envisaged non-consumptive reutilization of 15.15 MCM (Maximum requirement) of water per day for recirculation among two reservoirs upper reservoir & lower reservoir (Shirawta reservoir).

iii. The lower reservoir is existing one across stream named Indrayani, a tributary of Bhima River in Krishna Basin & upper reservoir is proposed to be constructed at top of Jambhavli-Thoran hillock ranges. Both reservoirs will be used cyclically for water

storage & energy generation. The initial filling and the annual make up water towards the tank losses shall be sourced from the existing Shirawta reservoir.

iv. The project proposes to utilize the water of existing Shirawta reservoir serving as the lower reservoir (existing). The gross storage of the existing lower reservoir is 195.25 MCM with live storage as 183.48 MCM at FRL of 656.84 m which is much more than the water requirement for reutilization between the two reservoirs for power generation purposes. The reservoir belongs to Tata Power and the water in this reservoir has been protected under the Krishna Water Disputes Tribunal (KWDT) allocation. The water use for the proposed alternative shall be within the KWDT entitlement and hence no additional State water resource shall be required to be allocated.

v. **Project location:** The geographical co-ordinate of the project are Latitude: 18° 50' 26.26" N Longitude: 73° 27' 15.78" E.

vi. Scoping clearance of Shirawta Off Stream Open Loop Pumped Storage Project (1800 MW) project was accorded by Ministry of Environment Forest and Climate Change (MoEF& CC), Government of India vide letter no. J-12011/38/2023-IA.I (R), dated: 23.09.2023. However, due to project optimization and changes in configuration of project components & land requirement; scoping clearance was amended for Shirawta Off Stream Open Loop Pumped Storage Project with 1800 MW installed capacity by MoEF&CC vide letter dated 27.05.2024.

vii. **Land requirement:** Total land requirement is about 197.797 ha for the construction of various project components, out of which 160.783 ha is forest land and 37.014 ha is non-forest land. The forest land required for the project falls in Pune Forest Division. For diversion of 197.797 ha of forest land, online application has been submitted to MoEF&CC vide proposal No.: FP/MH/HYD/IRRIG/477051/2024 dated 07.06.2024. While in case of non-forest land, the entire 37.014 ha is in possession of Tata Power. The land under possession of Tata Power was acquired around 100 years back for a specific purpose of 'generation of electricity & associated activities' and is under right, title, interest & possession of Tata Power till today for the same purpose.

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

The entire study area falls under two districts, namely Pune and Raigad. The project covers a total of 69 villages in the study area, including 3 villages identified as uninhabited. Out of the 69 villages, 50 are located in Mawal (Maval) tehsil of Pune district, and the remaining 19 are in Raigad district (16 villages in Karjat tehsil and 3 villages in Khalapur tehsil).

The total population of the study area is 50461, of which 26306 (52.13%) are males and 24155 (47.86%) are females. The number of households is 10085, with an average of 5-6 persons living in each house. The number of children below 6 years of age was found

to be 6614, which is 13.10% of the total population. Sex ratio was found to be 918 females per 1000 males.

There are 3183 Scheduled Castes in the study area, which is 6.30% of the total population, of which 1597 are Scheduled Caste males and 1586 are Scheduled Caste females. There are 11207 Scheduled Tribes, which is 22.20% of the total population, of which 5739 are Scheduled Tribe males and 5468 are Scheduled Tribe females.

The literacy rate in the villages is 75.28% (population above 6 years), with the rates for males and females being 84.23% and 65.46% respectively, creating a gender gap of 18.77%.

There are a total of 22,315 workers in the study area, and 48.07% of them are involved in agriculture and allied activities. Out of this group, 32.01% are cultivators, and 16.06% are agricultural labourers. Only 2.92% of the population is engaged in household industries, while 48.99% are engaged in various other services like trade, commerce, business, and transport, government and private jobs. This indicates that a significant portion of the working population in the area is involved in non-agricultural activities.

ix. **Water requirement**: Approximately 15.15 MCM will suffice to meet generation of 1,800 MW for 6 hours.

x. **Project Cost:** The estimated project cost is Rs 7285.0 crore. Total capital cost earmarked towards Environment Management Plan/environmental pollution control measures is Rs. 3474.91 lakh and the Recurring cost (operation and maintenance) will be about Rs. 2474.28 lakh about i.e. Rs 354.47 lakh per annum.

xi. **Project Benefit:** Total Employment will be 1500 persons during construction phase and 200 during operational phase of the project. Rs. 1000.0 lakh has been allocated under CER and Local Area Development Plan for strengthening and development of basic infrastructural facilities with a view to improve the quality of life of residents in the project vicinity.

xii. **Environmental Sensitive area:** No project component falls in any notified protected area. Nearest Protected Area to the Project Components is Bhimashankar Wildlife Sanctuary which is at a distance of around 19.70 km from proposed upper reservoir. The lower reservoir named Shirawta Dam is existing one across Kundali river, a tributary of Bhima River in Krishna Basin.

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

a) MoU: MoU signed with GoM on 12th Aug 2024 (WRD as per PSP policy dated 20.12.2023)

b) Water Allocation: Approval from Krishna valley Development Corporation (MKVDC) dated 26.03.2024.
c) CEA/CWC accorded concurrence to Shirawta PSP (1800 MW) vide Office Memorandum dated 01.09.2025.

xiv. **Resettlement and rehabilitation:** The required 37.014 ha of non-forest land is in the possession of Tata Power that will be utilized for various components of the proposed project. No private land will be acquired for the proposed project; therefore, no family is affected due to the acquisition of land for the proposed project. Hence, requirement of preparation of Resettlement & Rehabilitation Plan is not envisaged in the present case.

xv. **Scheduled – I species:** Among the mammals, 10 species are categorised as schedule I species. Rest of the mammalian species are listed under schedule II category of WPAA, 2022. As per the IUCN Red List of Threatened Species, Version 2023-1, Leopard, Sloth Bear, Sambar Deer, Indian Bison and Bonnet Macaque under Vulnerable (VU) category and Striped Hyaena is listed under Near Threatened (NT) category.

As per the IUCN Red List of Threatened Species version 2023-1, all birds have been listed under Least Concern (LC) category. As per the WPAA 2022, Indian Peafowl (*Pavo cristatus*) is listed as Schedule I species. All other bird species are listed as Schedule II category.

In case of herpetofauna, all species are listed under Least Concern (LC) category as per the IUCN Red List of Threatened Species version 2023-1. As per the WPAA, 2022, Asian Chameleon, Indian rat Snake, Indian Cobra and Russel's Viper are categorized as schedule I species.

Among the butterflies, Danaid Eggfly (*Hypolimnas misippus*) is listed under Least Concern (LC) category of IUCN Red List categories (Ver. 2023-1). No species of butterfly is categorized as a schedule species as per the WPAA 2022

xvi. **Alternative Studies:** Alternative studies were carried out amongst all the four proposed 'upper reservoirs' with common existing Shirawta reservoirs as 'lower reservoir'. The project components such as approach channel, intake/outlet structure, water conductor system, powerhouse, tail race tunnels, surge chamber, construction adit's, etc. were proposed for the respective alternatives keeping in view the all the technical and construction requirements.

- Alternative – 1: Layout with Site – 1 Upper Reservoir, Underground Powerhouse and other project components like Intake structure, Penstock / Pressure Shaft, Tail Race Tunnel, Tail Race Outlet, Tail Surge tank and Existing Lower reservoir.
- Alternative -2: Layout with Site – 2 Upper Reservoir, Underground Powerhouse and other project components like Intake structure, Penstock / Pressure Shaft, Tail Race Tunnel, Tail Race Outlet, Tail Surge Tank and Existing Lower reservoir.
- Alternative – 3: Layout with Site – 3 Upper Reservoir, Underground Powerhouse and

other project components like Intake structure, Penstock / Pressure Shaft, Tail Race Tunnel, Tail Race Outlet, Tail Surge Tank and Existing Lower reservoir.

- Alternative – 4: Layout with Site – 4 Upper Reservoir, Surface Powerhouse and other components project components like Intake structure, Penstock/ Pressure Shaft, Tail Race Tunnel, Tail Race Outlet, and Existing Lower reservoir.

In view of the advantages and optimum utilization/availability of precious water and land resources; and attractive techno-economic parameters, Alternative 4 has been recommended.

Description	**Alternative-I (1400 MW)**	**Alternative-II (1020 MW)**	**Alternative-III (180 MW)**	**Alternative-IV (1800 MW)**
Source of Water	**Existing Shirawta Reservoir**			
Location Village	Maval	Maval	Maval	Maval
District	Pune	Pune	Pune	Pune
State	Maharashtra	Maharashtra	Maharashtra	Maharashtra
Lower Reservoir	**Existing Shirawta Reservoir**			
Latitude/ Longitude	18° 50' 26.26" N 73° 27' 15.78" E	18° 50' 26.26" N 73° 27' 15.78" E	18° 50' 26.26" N 73° 27' 15.78" E	18° 50' 26.26" N 73° 27' 15.78" E
FRL (m)	657.76	657.76	657.76	657.76
MDDL (m)	638.00	638.00	638.00	638.00
Capacity at FRL (MCM)	195.25	195.25	195.25	195.25
Capacity at MDDL (MCM)	11.77	11.77	11.77	11.77
Live Storage Capacity (MCM)	183.48	183.48	183.48	183.48
Upper Reservoir	**Proposed**			
Latitude/ Longitude	18°47'22.02" N 73°28'26.60" E	18°48'10.52" N 73°25'47.50" E	18°47'41.98" N 73°26'58.80" E	18°50'10.52"N 73°25'47.50"E
Type of Dam	GFRD	GFRD	GFRD	GFRD
FRL (m)	935	895	882	965
MDDL (m)	912	875	870	948
Avg. Dam Height (m)	33	28	20	21
Dam Length (km)	6.30	4.80	20.20	4.26
Live Storage (MCM)	12.84	10.96	2.10	15.15
Max Min Head ratio	1.17	1.19	1.15	1.12
Rated Capacity	1400	1020	180	1800

Description	Alternative-I (1400 MW)	Alternative-II (1020 MW)	Alternative-III (180 MW)	Alternative-IV (1800 MW)
No. of Units	5	4	1	5+2
Unit Capacity Generation Mode (MW)	280.0	255.00	180.00	1800 (5x300) + (2x150)
Unit Discharge (cumec)	118.86	126.91	97.17	111.10 (300 MW) 55.74 (150 MW)
No. of Main PS	5	4	1	6
Pressure Shaft Discharge (Cumec)	118.86	126.91	97.17	112.06
Circular Diameter (m)	5.50	5.50	5.50	5.90 (main)
Velocity (m/s)	5.00	5.34	4.09	6.20
Water Conductor System				
Pressure Shaft/Penstock	803	666	756	1126.984
Tail race Tunnel	690	1091	521	149.826
Length of WCS (m)	1493	1757	1277	1276.81
Upstream L/H Ratio	3.01	2.93	3.53	3.52
Surge Tank/shaft	Not Required	Not Required	Not Required	Not Required
Tailrace Surge Chamber	Required	Required	Required	Not Required
Type of Powerhouse	Underground	Underground	Underground	Surface (Pit Type)
Peaking Hours (hr)	6.0	6.0	6.0	6.0
Land Requirement (ha)	**139.70**	**123.80**	**45.00**	**197.79**
Forest Land	130.5	102.20	33.30	160.78
Forest land (ha./ MW)	0.093	0.100	0.185	0.089
Non-Forest land	16.0	21.60	11.70	37.01
RECOMMENDATION	Ruled Out	Ruled Out	Ruled Out	**RECOMMENDED**

xvii. **Baseline Environmental Scenario:**

Period	From April 2023 to December 2023

AAQ parameters at 10 locations (min. & Max.)

Unit in microgram/m^3

Core	Min	Max	Average	Standards
PM 2.5	17.20	22.90	20.05	60
PM 10	40.50	54.60	47.55	100
SO2	4.90	6.40	5.65	80
NO2	6.50	8.50	7.50	80
Buffer	Min	Max	Average	Standards
PM 2.5	21.60	33.50	27.55	60
PM 10	43.80	68.60	56.20	100
SO2	6.80	10.40	8.60	80
NO2	9.10	13.90	11.50	80

Incremental GLC Level

Criteria Pollutant (PM10, PM2.5, SO2, NOx, Other parameters specific to the sector	Unit (microgram/m^3)	Baseline Concentration (A)	Predicted incremental value considering worst case stability class (B)	Total GLC (A + B)
PM10	microgram/m^3	49.6	12.4	62.0
PM2.5	microgram/m^3	20.80	5.2	26.0
SO2	microgram/m^3	5.8	4.35	10.15
NOx	microgram/m^3	7.8	5.85	13.65

River water samples (4 samples)

	Core Zone			
S. No	Parameters	Min	Max	
1	pH	6.9	7.1	A
2	Total Dissolved Solids, mg/L	112.3	117	A
3	Dissolved Oxygen (mg/l)	6.9	7.1	B
4	Chloride (as Cl), mg/L	22.9	23.4	-
5	Total Hardness (as CaCO3), mg/L	159.8	163.1	A
6	Biological Oxygen Demand (mg/l)	21	21	A
7	Chemical Oxygen Demand (mg/l)	7.1	7.1	B
8	Total Coliform (MPN/100 ml)	21	23	A

	Buffer Zone			
S. No	Parameters	Min	Max	
1	pH	6.8	7.7	A
2	Total Dissolved Solids, mg/L	89.9	156	-
3	Dissolved Oxygen (mg/l)	5.3	7.3	A
4	Chloride (as Cl), mg/L	27.4	81	NA
5	Total Hardness (as CaCO3), mg/L	117.5	286.2	A
6	Biological Oxygen Demand (mg/l)	21	5.52	B
7	Chemical Oxygen Demand (mg/l)	7.1	14.9	-
8	Total Coliform (MPN/100 ml)	27	45	A

Ground water samples (10 samples)

	Core Zone				
S. No.	**Parameters**	**Min**	**Max**		
1	pH	7	7.7	6.5	8.5
2	Total Dissolved Solids (mg/l)	187	332	500	2000
3	Chloride (as Cl) (mg/l)	37.2	61.2	250	1000
4	Total Hardness (as $CaCO_3$) (mg/l)	124.9	205.3	200	600
5	Fluoride (mg/l)	0.22	0.36	1.0	1.5

	Buffer Zone				
S. No.	**Parameters**	**Min**	**Max**		
1	pH	7.1	7.7	6.5	8.5
2	Total Dissolved Solids (mg/l)	135	384	500	2000
3	Chloride (as Cl) (mg/l)	26.8	70.8	250	1000
4	Total Hardness (as $CaCO_3$) (mg/l)	70.1	237.5	200	600
5	Fluoride (mg/l)	0.14	0.42	1.0	1.5

Noise levels Leq (Day & Night) at 10 locations

Noise Level	**Zone**	**Leq Day dB(A)**		**Leq Night dB(A)**		
		From	To	From	To	
Core	Residential	40.2	46.6	34.2	39.4	55
Buffer	Commercial	42.5	60.9	35.9	51.3	65

Soil Quality at 10 Locations

Monitoring Location	**Criteria Parameter [Calcium,**	**Unit [gm/mg/ Other**	**Observed Value**	**Permissible standard**

(Core /Buffer)	Carbon, Nitrogen, Phosphorus, Potassium, Magnesium, Sodium Absorption Ratio, Salinity]	(please specify)]			
			From	To	
Core Zone	Calcium	(mg/kg)	357	814	500
	Magnesium	(mg/kg)	119	271	500
	Available Nitrogen	(kg/ha)	174.8	290	500
	Available Phosphorus	(kg/ha)	8.2	15.5	50
	Available Potassium	(kg/ha)	143.5	268	500
	Organic carbon	(%)	0.4	0.6	1
	Sodium Adsorption Ratio		2.1	3.2	10
	Salinity	(ppt)	0	0	0.01
Buffer Zone	Calcium	(mg/kg)	236	1068	500
	Magnesium	(mg/kg)	91	356	500
	Available Nitrogen	(kg/ha)	142	267	500
	Available Phosphorus	(kg/ha)	8.2	22.3	50
	Available Potassium	(kg/ha)	170	320	500
	Organic carbon	(%)	0.6	0.8	1
	Sodium Adsorption Ratio		2	3.6	10
	Salinity	(ppt)	0	0	0.01

	Particle Size Distribution						**Water Holding Capacity (%)**		**Porosity (%)**	
	Sand (%)		**Silt (%)**		**Clay (%)**					
	From	**To**	**From**	**To**	**From**	**To**	**From**	**To**	**From**	**To**
Core	35.8	54.2	16.4	31.6	25.5	40.3	32.2	38.4	19.8	23.7
Buffer	35.4	56	16.3	41.1	21.3	42	31.8	37.1	19.4	24.2

Flora & Fauna	Among the mammals, 10 species are categorised as schedule I species. Rest of the mammalian species are listed under schedule II category of WPAA, 2022. As per the IUCN Red List of Threatened Species, Version 2023-1, Leopard, Sloth Bear, Sambar Deer, Indian Bison and Bonnet Macaque under Vulnerable (VU) category and Striped Hyaena is listed under Near Threatened (NT) category. As per the IUCN Red List of Threatened Species version 2023-1, all birds have been listed under Least Concern (LC) category. As per the WPAA 2022, Indian Peafowl (*Pavo cristatus*) is listed as Schedule I species. All other bird species are listed as Schedule II category. In case of herpetofauna, all species are listed under Least Concern (LC) category as per the IUCN Red List of Threatened Species version 2023-1. As per the WPAA, 2022, Asian Chameleon, Indian rat Snake, Indian Cobra and Russel's Viper are categorised as schedule I species. Among the butterflies, Danaid Eggfly (*Hypolimnas misippus*) is listed under Least Concern (LC) category of IUCN Red List categories (Ver. 2023-1). No species of butterfly is categorised as a schedule species as per the WPAA 2022.

xviii. **Details of Solid waste/ Hazardous waste generation/ Muck and its management:** Generation of Municipal Solid Waste- Bio degradable (613.0 Tons in four years), Generation of Non degradable (263.0 Tons in four years).

Solid waste management shall involve Reuse/Recycling, Storage/Segregation, Collection and Transportation and Disposal of Degradable component, non-degradable component& bio-medical waste.

Total quantity of Muck to be dumped: 25.78 lakh cum. Excavated muck is to be dumped in a pre-identified site located at a relatively flat ground at North of upper reservoir with total area of about 20.246 ha and capacity has been worked as 32,00,000.00 cum. The disposal site was identified taking into consideration availability of suitable area, minimum distance from generation sites.

xix. Public Hearing for the proposed project has been conducted by the State Pollution Control Board on 29th, October 2024, near Shirawta Dam, Mouje - Khandshi, Tal. Maval, District Pune, Maharashtra. The public hearing meeting was chaired by Ms. Jyoti Kadam, ADM, Pune.

xx. Status of Litigation Pending against the proposal, if any: Not Applicable

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

- **EAC Meeting Details:**

EAC meeting/s	40th meeting
Date of Meeting/s	26.09.2025
Date of earlier EAC meetings	11.08.2023 (50th meeting for TOR) 29.04.2024 (10th meeting for Amendment in TOR)

- **Project details:**

Name of the Proposal	Shirawta Off-Stream Open Loop Pumped Storage Project (1800 MW)
Proposal No.	IA/MH/RIV/550476/2025
Location (Including Coordinates)	Near existing Shirawta dam, Mawal Taluka, Pune district of Maharashtra Upper Reservoir- Lat: 18° 50' 26.26" N Long: 73° 27' 15.78" E
Company's Name	M/s The Tata Power Company Limited
CIN no. of Company/user agency	L28920MH1919PLC000567
Accredited Consultant and certificate no.	R S Envirolink Technologies Pvt Ltd; NABET/EIA/25-28/RA 0415
Project location (Coordinates /River/ Reservoir)	Near existing Shirawta dam, Mawal Taluka, Pune district of Maharashtra
Inter- state issue involved	No
Proposed on River/ Reservoir	Shirawta Dam across Kundali river
Type of Hydro-electric project	Pumped Storage Project
Seismic zone	Seismic Zone III

- **Category details:**

Category of the project	A
Capacity / Cultural command area (CCA)	1800 MW
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	-

- **TOR/EC details:**

ToR Proposal No.	IA/MH/RIV/438423/2023
EAC meeting date	11.08.2023 (TOR) 29.04.2024 (TOR amendment)
ToR Letter No.	J-12011/38/2023-IA.I (R)
ToR grant Date	23.09.2023 (TOR) 27.05.2024 (TOR amendment)

Cost of project	Rs 7285.0 crore
Total area of Project	197.797 ha
Height of Dam from River Bed (EL)	Upper Dam-33.0 m
Details of submergence area	130.67 ha
District to provide irrigation facility (if applicable)	NA
Details of tunnels on upper level & lower level and length of canal (if applicable)	--------
No. of affected Village	No private land will be acquired for the proposed project; therefore, no family is affected due to the acquisition of land for the proposed project.
No. of Affected Families	No private land will be acquired for the proposed project; therefore, no family is affected due to the acquisition of land for the proposed project.
Project Benefits	The levelized cost of generation of the project has been found to be Rs 7.35/kWh considering cost of pumping @ Rs 3/kWh. Shirwata pumped storage hydro project is a technically feasible project and will be beneficial in meeting the peaking requirement of energy during evening/night. The National Solar Mission would induct large quantum of renewable energy to the grid in the years to come and the Solar power would go off the grid by the end of the day. The pumped storage project (PSP) will be required for stabilizing the grid and in turn supporting the National Solar Mission and facilitate induction of renewable energy into the grid.
R&R details	The required 37.014 ha of non-forest land is in the possession of Tata Power that will be utilized for various components of the proposed project. No private land will be acquired for the proposed project; therefore, no family is affected due to the acquisition of land for the proposed project. Hence, requirement of preparation of Resettlement & Rehabilitation Plan is not envisaged in the present case.
Catchment area/ Command area	Since there is no landward catchment area of the upper reservoir, no CAT plan can be prepared.

	Also, since lower reservoir is already existing hence CAT plan preparation is not applicable. In view of above, CAT plan in proposed Shirawta PSP is not applicable and has not been prepared.
Types of Waste and quantity of generation during construction/Operation	Municipal Solid Waste- Bio degradable (613.0 Tons in four years), Non degradable (263.0 Tons in four years)
Material used for blasting and its composition as per DGMS standards.	One magazine of 10 MT capacities would be sufficient to meet the requirement of the project. A mobile explosive van shall be deployed to carry explosive at the site of use at upper and lower dam area. Movement of van should be done with armed guards and proper documentation recommended by PESO.
E-Flows for the Project	The upper reservoir is proposed as a closed embankment on a plateau and no stream contributes to the supply of water. The upper reservoir will receive water from rainfall directly falling into the proposed reservoir and pumping from the lower reservoir; the inflow receipt from the precipitation shall be released to downstream side through the appropriate arrangement.
Is Projects earlier studied in Cumulative Impact assessment & Carrying Capacity Studies (CIA&CC) for River in which project located. If yes then c) E-flow with TOR/Recommendation by EAC as per CIA&CC study of River Basin. d) If not the E-Flows maintain criteria for sustaining river ecosystem.	No
Details on provision of fish pass	The proposed Shirawta Pumped Storage Project is planned as an 'open loop' scheme. Water in circulation from lower to upper reservoir and vice versa is small as compared to the total capacity of the Shirawta reservoir (about 8% of the storage capacity) and will be limited to one part of the reservoir only where the component design of PSP shall take care of the aquatic life where intake will be through screens and barrier nets to segregate this area for fish entry.

Project benefit including employment details (no of employee)	The setting up of 1800 MW PSP project would provide employment for a hundred plus technical staff and provide job opportunities to thousands during the construction phase. About 1500 workers (labour and staff) would be engaged during the peak construction period, out of which 300 persons will be engaged permanently and about 1200 will be temporary labour for the construction work. It is expected that 70% of the total workforce shall be available from the State of Maharashtra. After completion of the project only a staff of about 200 technical persons shall be required for the operation of the project.
Area of Compensatory Afforestation (CA) with tentative no of plantation.	CA land – 160.783 ha; Land is having tree cover with density of 0.4; Protection and conservation measures proposed.
Previous EC details	-
EC Compliance Report by R.O, MOEF&CC	-
No. of trees/saplings proposed in the view of 'Ek Ped Maa Ke Naam' campaign	)0

- **Electricity generation capacity:**

Powerhouse Installed Capacity	1800 MW
Generation of Electricity Annually	3744.90 MU
No. of Units	7; 1800 MW [5 x 300 + 2 x 150]

- **Muck Management Details:**

No. of proposed disposal area/ (type of land- Forest/Pvt land)	The total quantity of muck to be disposed of works out to 25,78,463.00 cum. Excavated muck is to be dumped in a pre-identified site located at a relatively flat ground at North of upper reservoir with total area of about 20.246 ha and capacity has been worked as 32,00,000.00 cum. The disposal site was identified taking into consideration availability of suitable area, minimum distance from generation sites.
Cross section of proposed muck area, Height of muck with slope.	**Enclosed as Annexure-I**
Distance of muck disposal area(location), from muck generation sources (project	Dumping Area 1-North of Upper Reservoir

area)/River, HFL of proposed muck disposal area	
Total Muck Disposal Area	20.246 ha
Estimate Muck to be generated	46,18,699 cum
Transportation	The generated muck will be carried in dumper trucks covered with heavy duty tarpaulin properly tied to the vehicle in accordance with best international practices. All precautionary measures will be followed during the dumping of muck. All dumpers will be well maintained to avoid any chances of loose soil from being falling during transportation. All routes will be periodically wetted with the help of sprinklers prior to the movement of dumper trucks.
Monitoring mechanism for Muck Disposal Transportation	The provisions of Monitoring have been kept under proposed Environmental Monitoring Plan.

- **Land Area Breakup:**

Private land	37.014 ha Private land
Government land	-
Forest land	160.783.00
Total land	197.797 ha
Submergence area/reservoir area	130.67 ha
Additional information (if any)	

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

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate/ letter/Remarks**
Reserve Forest/Protected Forest Land	**No**	No project component falls in any notified protected area. Nearest Protected Area to the Project Components is Bhimashankar Wildlife Sanctuary which is at a distance of around 19.70 km from proposed upper reservoir.
National Park	**No**	
Wildlife Sanctuary	**No**	
Archaeological sites monuments/historical temples etc	**No**	The proposed project will not affect any important cultural, historical or religious sites in the vicinity. However, there are many tourist, religious and historical sites near project area such as Lonavala-Khandala Hill Station, Valvhan Lake, Uksan Lake, Karla Caves, Adishakthi Aai Ekavaira

		Temple which are more than 5 km away from the project components.
Additional information (if any)	-	

- **Public Hearing (PH) Details**

Advertisement for PH with date	Advertisements of the Public Hearing meetings were prepared by Maharashtra Pollution Control Board (MPCB) and published in local newspaper Loksatta (in Marathi) and in national newspaper Indian Express (in English) on 25th September 2024.
Date of PH	29th October 2024
Venue	Near Shirawta Dam, Mouje - Khandshi, Tal. Maval, District Pune.
Chaired by	Meeting was chaired by Ms. Jyoti Kadam, ADM, Pune
Main issues raised during PH	- Provision of Employment of local Youth. - Form a Coordination Committee with MPCB, company officials, and government representatives to utilize the CSR budget effectively. - Provide skill development courses for unemployed youth in the project-affected area with government support. - Urge the government to proceed only with full consent from all stakeholders and without harming the environment.
No of people attended	337

- **Court cases: Nil**

- **Status of other statutory clearances**

Particulars	**Letter no. and date**
Status of Stage- I FC	Forest proposal has been submitted vide proposal no. FP/MH/HYD/IRRIG/477051/2024 and pending at Technical Officer - MOEFCC, HQ
Approval of Central Water Commission	CEA/CWC accorded concurrence to Shirawta PSP (1800 MW) vide Office Memorandum dated 01.09.2025

Approval of Central Electricity Authority	CEA/CWC accorded concurrence to Shirawta PSP (1800 MW) vide Office Memorandum dated 01.09.2025
Is FRA (2006) done for FC-I	Under progress.

- **Details of the EMP**

S. No	Component of EMP	Capital Cost (Rs. In lakh)	Recurring Cost (Rs. In lakh)							Total Cost
			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	(Rs. Lakh)
1	Catchment Area Treatment Plan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	Biodiversity Conservation & Wildlife Management Plan	1410.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1410.00
3	Fisheries Conservation and Management Plan	50.00	16.00	16.00	16.00	16.00	0.00	0.00	0.00	114.00
4	Muck Dumping and Management Plan	943.90	84.12	140.18	88.33	11.00	5.00	5.00	4.00	1281.53
5	Landscaping, Restoration of Quarry, and Construction Sites	96.25	68.21	27.40	14.94	1.50	0.50	0.50	0.50	209.80
6	Green Belt Development Plan	0.00	5.00	5.35	18.70	12.45	4.00	2.00	3.00	50.50
7	Sanitation and Solid Waste Management Plan	147.00	33.00	33.00	26.00	19.00	0.00	0.00	0.00	258.00
8	Public Health Delivery System	126.00	35.00	34.00	34.00	34.00	0.00	0.00	0.00	263.00
9	Energy Conservation Measures	56.00	72.50	72.50	72.50	72.50	0.00	0.00	0.00	346.00
10	Labour Management Plan	35.00	7.00	17.00	17.00	17.00	0.00	0.00	0.00	93.00

11	Disaster Management Plan	210.00	10.00	10.00	10.00	10.00	0.00	0.00	0.00	250.00
12	Control of Air, Noise and Water Pollution	0.00	15.00	15.00	15.00	15.00	0.00	0.00	0.00	60.00
13	Environmental Monitoring Programme	0.00	53.15	53.15	53.15	53.15	0.00	0.00	0.00	212.60
15	Rehabilitation and Resettlement Plan*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	Local Area Development Plan	0.00	244.75	244.25	265.75	245.25	0.00	0.00	0.00	1000.00
17	Watershed Development Plan	400.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	400.76
	Total	**3474.91**	**643.73**	**667.83**	**631.37**	**506.85**	**9.50**	**7.50**	**7.50**	**5949.19**

* No acquisition/ procurement of private land involved.

40.1.3 The EAC during deliberations noted the following:

- The EAC deliberated on the information submitted and presented during the meeting, observing that the proposal is for the grant of Environmental Clearance (EC) to the project for Shirawta Open Loop Pumped Storage Project (1800 MW) in an area of 197.797 ha at Village Khandshi, Rakaswadi, Thoran etc, Sub-district Mawal, District Pune, Maharashtra by M/s The Tata Power Company Limited.

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

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

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

- The Terms of Reference issued by MoEF&CC, New Delhi vide letter no. F No. J-12011/38/2023-IA.I (R), dated: 23.09.2023 to Shirawta Off Stream Open Loop Pumped Storage Project. Subsequently, amendment in TOR granted by the MoEF&CC vide letter dated 27.05.2024 due to project optimization and changes in configuration of project components & land requirement; scoping clearance was amended for with 1800 MW installed capacity.

- The EAC observed that the total land requirement is about 197.797 ha for the construction of various project components, out of which 160.783 ha is forest land and 37.014 ha is non-forest land. It was noted that the Stage-I Forest Clearance is still pending for diversion of 197.797 ha of forest land, online application has been submitted to MoEF&CC vide proposal No.: FP/MH/HYD/IRRIG/477051/2024 dated 07.06.2024. The entire non-forest area of 37.014 ha is in possession of Tata Power.

- During the deliberations, the Committee observed that the proposed batching plant requires 0.402 ha of forest land. The Committee advised that the batching plant should preferably be located outside the forest area. However, the PP explained that the batching plant is a mandatory requirement and needs to be located close to the construction site, as the identified non-forest land is situated far from the reservoir area. It was further clarified by the PP that the batching plant would be a temporary facility required only during the construction phase. After detailed discussions, the Committee suggested that, in view of the unavoidable requirement, a comprehensive reclamation and restoration plan shall be prepared in consultation with the Forest Department. The Plan shall include measures for ecological restoration of the forest land and shall be fully implemented within five years of commissioning of the project.

- The EAC noted that the Public hearing was conducted on 29.10.2024 near Shirawta Dam, Mouje - Khandshi, Tal. Maval, District Pune and chaired by by Ms. Jyoti Kadam, ADM, Pune. Advertisements of the Public Hearing meetings were prepared by Maharashtra Pollution Control Board (MPCB) and published in local newspaper Loksatta (in Marathi) and in national newspaper Indian Express (in English) on 25th September 2024. The EAC discussed the concerns raised during the Public Hearing (PH) and reviewed the action plan submitted by the PP to address these issues. After detailed deliberation, the Committee found the action plan satisfactory, recognizing that the proposed mitigation measures adequately respond to stakeholder's concerns.

- The committee observed that EAC sub-committee had carried out a site visit to Shirawta PSP site on 23/02/2024. The sectoral EAC has discussed the site visit report in 9th meeting held on 20/03/2024 and made certain recommendations. It was noted that the PP has provided satisfactory information/response to the recommendations of the EAC (Sub - Committee).
- The EAC noted that as per the socio-economic baseline data, the study area has a Scheduled

Caste (SC) population of 3,183 persons, constituting about 6.30% of the total population, and a Scheduled Tribe (ST) population of 11,207 persons, constituting about 22.20% of the total population. The Committee emphasized that, keeping in view the significant proportion of Tribal population, PP should prepare and implement a comprehensive Skill Development Plan in consultation with the local administration. The Plan shall focus on:

- Capacity building and skill enhancement programs tailored to local livelihood opportunities.
- Establishment of linkages with Industrial Training Institutes (ITIs) for technical training.
- Providing free or subsidized access to healthcare facilities in project-supported hospitals and health centres.
- Strengthening educational infrastructure by supporting schools in the study area with free services, scholarships, and vocational guidance.
- Ensuring special outreach programs for women, youth, and vulnerable groups within the SC/ST communities.

- The lower reservoir is existing one across stream named Indrayani, a tributary of Bhima River. The project proposes to utilize the water Approximately 15.15 MCM will suffice to meet generation of 1,800 MW for 6 hours of existing Shirawta reservoir. The gross storage of the existing lower reservoir is 195.25 MCM with live storage as 183.48 MCM at FRL of 656.84 m.

- The Committee noted that the Layout Map and Power Potential Studies had been duly submitted to the Central Electricity Authority (CEA). The Final Site Report (FSR) was submitted to the CEA vide email No. LNL/HWS/2023/66 dated 05.06.2023. The first consultation meeting was held on 16.06.2023, and the layout was subsequently approved in the second meeting conducted on 28.08.2023, as per reference letter No. CEA-HY-14-19/9/2023 dated 12.09.2023.

40.1.4 The EAC after examining the information submitted and detailed deliberations recommended the proposal for grant of prior Environmental Clearance by the Ministry to Shirawta Open Loop Pumped Storage Project (1800 MW) in an area of 197.797 ha at Village Khandshi, Rakaswadi, Thoran etc, Sub-district Mawal, District Pune, Maharashtra by M/s The Tata Power Company Limited, under the provisions of EIA Notification, 2006 and as amended with subject to compliance of applicable Standard EC conditions with the following specific environmental safeguard conditions:

[A] Environmental management and Biodiversity conservation:

i. Stage-I FC shall be obtained before grant of EC.
ii. The water of rainfall yield of self-catchment of the reservoir shall be released to downstream through body of dam/ barrage/ embankment etc.

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

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

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

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

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

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

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

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

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

[B] Disaster Management:

i. Disposal of the excavated muck and its filling on the low-lying area with proper measures for the stabilization and greenery to minimize the impacts of the generated construction muck shall be taken up pari passu with construction work.

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

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

iv. Solid waste generated, especially plastic waste, etc. should not be disposed of as landfill

material. It should be treated with scientific approach and recycled. Use of single-use plastics may be discouraged.

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

[C] Socio-economic:

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

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

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

iv. School up to 12th Standard shall be established and managed to provide free quality education for children from project affected villages/Tribal villages. Adequate transportation facilities shall also be provided to students to ensure connectivity and ease of access.

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

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

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

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

of the Ministry.

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

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

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

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

[D] Miscellaneous:

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

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

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

Agenda Item No. 40.2

Sawalkote Hydro Electric Project (1856 MW) on river Chenab in an area of 1401.35 Ha located at Village Bhajmasta, Sub-district Ramban, District Ramban, Jammu & Kashmir by M/s NHPC Limited- Environmental Clearance - reg.

[Proposal No. IA/JK/RIV/551637/2025; F. No. J-12011/19/2011-IA-I]

40.2.1: The proposal is for grant of Environmental Clearance (EC) to the project for Sawalkote Hydro Electric Project (1856 MW) on river Chenab in an area of 1401.35 Ha located at Village Bhajmasta, Sub-district Ramban, District Ramban, Jammu & Kashmir by M/s NHPC Limited.

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

i. Sawalkot HEP (6 X 225 MW & 1 X 56 MW for Stage 1 – 1406 MW and 2 X 225 MW for Stage 2 – 450MW) is a run-of-the-river project that will be using the water of Chenab River located Ramban, Reasi and Udhampur districts of UT of Jammu & Kashmir.

ii. It envisages construction of a 192.5 m high Roller Compacted concrete (RCC) gravity dam from the deepest foundation level, an upstream short water conductor system, an underground powerhouse in the left bank downstream of dam axis and a tail race system. For Stage- 1, the upstream water conductor system consists of two intake structures and two head race tunnels and associated pressure shafts/ penstocks. For Stage-2, an additional intake, an additional HRT and corresponding pressure shafts are envisaged besides extension of powerhouse complex and additional tailrace tunnel. The project also envisages construction of three diversion tunnels on the right bank and upstream & downstream cofferdams.

iii. **Project location:** The geographical co-ordinate of the project are Dam site & Power House site on Chenab River: 33°11′N, 75°06′E

iv. **Project Background:**

a. The project proposal was considered by the Expert Appraisal Committee (River Valley and Hydropower Projects) in its meetings held on 30.12.2016 and 30-31.01.2017 and was recommended for grant of Environmental Clearance (EC) for the project. The Terms of Reference (ToRs) for 1200 MW were earlier issued by Ministry vide letter No. J-12011/19/2011-IA-I dated 30.10.2011, amended for 1856 MW dated 12.06.2013 and further extended vide letter dated 01.10.2015.

b. Due to various reasons, further progress for project development was not carried out by JKSPDC. A Memorandum of Understanding (MOU) was signed on 03.01.2021 between JKSPDC and NHPC Limited for development, commissioning, implementation, operation and maintenance of Sawalkote H.E. Project on Build, Own, Operate and Transfer (BOOT) basis for a lease period of 40 (forty) years from the commercial operation date (COD).

c. ToR transferred from "M/s J&K Power Development Corporation" to "M/s NHPC Limited" vide ToR Identification No.: TO25A0501JK5254914T dated 20.08.2025. Stage-I Forest Clearance for 847.17 ha of forest land has been granted vide MoEF&CC letter dated 10.07.2025.

v. **Land requirement:** Total 1401.350 Ha land required for construction of the project in which Forest Land is 847.17 ha and Non Forest Land is 554.18 ha. There is no change in the overall land requirement for the proposed project. However, as per the forest proposal, for the diversion of forest land, the total forest area need to be diverted for Sawalkote HEP is 847.17 ha. In addition to 684.15 ha reserve forest, 162.02 ha revenue forest is also considered under forest diversion proposal of Sawalkote HEP. Forest

Clearance Stage-I (in-principle) approval has been granted by MoEF&CC (Forest Conservation Division) on 10.07.2025.

Forest Land Requirement – Legal Status

S. No.	Legal Status	Forest Division	Forest Land (Ha)
1	Reserved Forest	Mahore Forest Division	39.60
2	Reserved Forest	Ramban Forest Division	289.58
3	Reserved Forest	Batote Forest Division	165.40
4	Reserved Forest	Udhampur Forest Division	189.75
5	**Revenue Forest**	**Ramban Forest Division**	**42.70**
6	**Jungle Jhari land**	**Batote Forest Division**	**120.14**
	Total		**847.17**

Land Requirement - Comparison

S. No.	Description	As per EIA 2016				Revised (2025)		
		Forest (Ha)	Private (Ha)	Govt. (Ha)	Total (Ha)	Forest (Ha)	Non-Forest (Ha)	Total (Ha)
1	Reservoir /Submergence area involving (Ramban , Udhampur & Reasi Districts)	499.55	136.65	522.55	1158.75	663.56	496.17	1159.73
2	Open works - Power Intake, dam, plunge pool, DT outlet, TRT outlet: 14 Ha x 1.3 (M.F) = 18.20 Ha (Udhampur)	18.20			18.20	18.21		18.21
3	Underground works – left bank (HRT, Power house, TRT and access tunnels) 78 Ha x 1.3 (M.F) = 101.40 Ha (Udhampur)	101.40			101.40	101.40		101.40

4	Underground works – right bank (Diversion tunnels and access tunnels) 32 Ha x 1.3 (M.F) = 41.60 Ha (Reasi)	41.60			41.60	39.60		39.60
5	Quarry (Plot No 12) (Udhampur)	12.00			12.00	12.00		12.00
6	Muck Disposal Area (Ramban)	8.00	18.00	15.00	41.00	9.00	33.00	42.00
7	Roads with in Project site	1.00	1.00		2.00	1.00	1.01	2.01
8	Explosive magazine (plot no. 15) (Udhampur)	2.40			2.40	2.40		2.40
9	Site Installation and facilities			2.00	2.00		2.00	2.00
10	Workers colony (at Pari village) Plot no 6, 7 and 8 (Total Area) (Ramban)		7.00	2.00	9.00		9.00	9.00
11	Colony /offices/ fabrication yard At Tanger village Plot no 1, 2, 3, 4 and 5 (Ramban)		13.00		13.00		13.00	13.00
	Grand Total	**684.15**	**175.65**	**541.55**	**1401.35**	**847.17**	**554.18**	**1401.35**

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

The entire study area falls under 3 districts, i.e., Ramban, Udhampur, and Reasi. In the project, a total of 121 villages and 2 towns fall within the study area. Out of 121 villages, 89 are in Ramban district (12 villages in Banihal Tehsil and 77 villages in Ramban Tehsil), 23 are in Udhampur district (23 villages in Udhampur Tehsil), and 9 are in Reasi district (5 villages in Gool Gulabgarh Tehsil and 4 villages in Reasi Tehsil). Two towns fall in the Ramban tehsil of the Ramban district.

The total population of the study area is 217028 of which 114222 are males (52.63%) and102806 are females (47.36%). There are 41809 households. Sex ratio was found to be 900 females per 1000 males. The population of Scheduled Castes is 17091 which is 7.87% of the total population of which 8777 are Scheduled Caste males and 8314 are Scheduled Caste females. The population of Scheduled Tribes is 37776 which is 17.40% of the total population of which 19866 are Scheduled Tribe males and 17911 are Scheduled Tribe females.

About 35.44% of the population is engaged in different kinds of works. Of the total working population, 54.93% are Main Workers and the remaining 45.06% are Marginal Workers.

The majority of the working population (63.13%) is engaged in agricultural activities, out of which 57.17% are Cultivators and 5.96% are Agricultural Labours. 3.08% of the working population is engaged as Household Industrial Workers and about 33.77% are in miscellaneous services.

Demographic Profile

Table : **Comparison of Demographic Profile**

Village Name	Households (2011 Census)	Households (Mission Antyodaya 2020)	Population (2011 Census)	Population (Mission Antyodaya 2020)
Pari	29	39	130	179
Tangar	82	305	343	1,622
Kundi	153	220	759	913
Sangaldan	161	130	876	604
Marog	238	90	1195	302
Famroot	259	300	1519	1900
Gandri	338	456	1591	2053
Harog	373	405	2139	1823
Seri	409	309	2023	2187
Kanga	488	560	2453	3115
Pernote	678	485	3260	2030
Metra	682	688	4108	4227
Ramban (MC)	729	–	3596	2988 (Projected, 2021)

TOTAL			23992	23943

The comparative analysis of demographic data from Census 2011 and Mission Antyodaya 2020 provides a clear understanding of the household and population trends in the project affected villages. 12 villages have identified as affected villages along with one municipal corporation (Ramban). A comparison is made based on available census data of the population in the project affected villages. (Sources: Census of India 2011 & Mission Antyodaya 2020)

As can be seen from the above table, there is no change in the population of project affected villages. However, due to re-classification of census boundaries and internal migration, there is increase as well as decrease of population at village level. Tangar is a census village, which presently considered as semi-urban area has seen lot of migration and therefore, change in demography is observed. Between 2011 and 2020, the number of households has generally increased, suggesting fragmentation of families and rising housing demand. Ramban Municipal Council (MC) shows a slight projected decline in population, which may indicate migration to nearby urban centers or reclassification of census boundaries.

vii. **Water requirement:** Project has a gross storage capacity of 530 MCM with 23.84 MCM operational pondage. The design discharge is 159.73 m^3/s per 225 MW unit and 39.97 m^3/s for the 56 MW auxiliary unit, with total intakes handling up to 519.16 m^3/s in Stage-I and 319.46 m^3/s in Stage-II. For environmental flows, the project will release 39.97 m^3/s during lean season, 159.73 m^3/s in non-monsoon months, and about 571.89 m^3/s during monsoon.

viii. **Project Cost:** The estimated project cost is Rs **31380.61 Crore**. Total capital cost earmarked towards Environment Management Plan/environmental pollution control measures is Rs.**59400.77** lakhs (revised).

ix. **Project Benefit:** The project will give direct and indirect jobs to local people, with priority to affected families. A Rehabilitation & Resettlement Plan of ₹19,000 lakh and ₹3,000 lakh for CER has been proposed. The project will improve living standards by providing roads, health, education, and livelihood opportunities.

x. **Environmental Sensitive area:** No project component falls in any notified protected area. Nearest Protected Area to the Project Components is Kishtwar High Altitude National Park which is at a distance of around 62.8 km (with ESZ boundary 57.6 km away) from tip of proposed reservoir area. Proposed dam is proposed on Chenab River**.**

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

- A MOU was signed between JKSPDC and NHPC Limited for development, operation and maintenance of Sawalkot H.E. Project on BOOT basis for a lease period of 40 (forty) years dated 03/01/2021.
- CEA-HY-12-20/1/2021-HPA DIVISION I/514774/2025 Dated: 14/07/2025

xii. **Resettlement and rehabilitation:**

A total of 13 villages from two tehsils viz. Ramban and Gool Sangaldan of Ramban district will be affected due to acquisition of land for the construction of components of the Sawalkot HEP. A total of 1477 PAFs belonging to 575 households with a total population of 3977 have been identified as affected families by the project authorities and same list have been used for socio-economic survey and preparation of R&R Plan. During the survey 28 persons have been identified as vulnerable persons i.e. widow and disabled. Keeping in view that displaced population is of the order of 3977 persons; an area of 50 hectares is suggested to be acquired for development of resettlement colony.

xiii. **Availability of Schedule-I species in study area:** As per the Wildlife (Protection) Amendment Act, 2022, 15 mammals (Common Leopard, Mainland Leopard Cat, Jungle Cat, Indian Grey Mongoose, Small Indian Mongoose, Golden Jackal, Red Fox, Bengal Fox, Wild Dog/Dhole, Asiatic Black Bear, Himalayan Weasel, Common Otter, Barking Deer/Northern Red Muntjac, Himalayan Goral and Indian Crested Porcupine); 5 birds (Egyptian Vulture, Himalayan Griffon, Golden Eagle, Himalayan Monal and Kaleej Pheasant); and 5 herpetofauna (Rat Snake, Red Sand Boa, Indian Cobra, Russell's Viper and Bengal Monitor Lizard) species are listed as Schedule I species.

xiv. **Chronology of Approvals/Clearances:**

S. No.	Activity	Date	Remarks
1	Scoping Clearance/ TOR	13/10/2011	For 1200 MW, in favour of JKSPDC Ltd.
2	Amendment of TOR	12/06/2013	For 1856 MW, in favour of JKSPDC Ltd. (*CEA approved an aggregate installed capacity of 1,856 MW to be developed in two Stages, i.e. 1,406 MW in Stage-I (1,350 MW in the main and 56 MW in auxiliary powerhouse) and 450 MW in Stage-II.)* TOR Valid for 2 years from the date of issue of this letter for submission of EIA/EMP report along with public consultation.
3	Extension of TOR validity	01/10/2015	1856 MW TOR for further period of one more year in favour of JKSPDC Ltd.
4	Public Hearing	18/01/2016	District Udhampur
		21/01/2016	District Reasi
		28/01/2016	District Ramban
5	Appraisal by EAC	30/12/2016	***Deferred for the next EAC meeting*** Deferred for detailed deliberations on Hydro-geological aspects of the project, e-flow determination and downstream free stretches, etc.

S. No.	Activity	Date	Remarks
6	Appraisal by EAC	30-31/01/2017	***Recommended for EC***
7	ADS raised by MoEF&CC	07/03/2017	Request for submission of Stage-I Forest clearance
8	Delisted for MoEF&CC Portal	04/08/2017	
9	Techno-Economical Clearance	18/04/2018	CEA accorded appraisal to Sawalkot HEP (1856 MW) in favour of JKSPDC Lid.
10	Memorandum of Understanding (MOU) between JKSPDC & NHPC Ltd.	03/01/2021	A MOA was signed between JKSPDC and NHPC Limited for development, operation and maintenance of Sawalkot H.E. Project on BOOT basis for a lease period of 40 (forty) years.
11	Catchment Area Treatment Plan	01/04/2025	Revised CAT Plan in respect of Sawalkot HEP approved by PCCF & HoFF, Govt. of Jammu & Kashmir.
12	Stage I Forest Clearance	10/07/2025	For **847.17 ha** of forest land Stage I Forest Clearance was accorded by MoEF&CC in favour of NHPC Ltd. Compliance of the conditions in the Forest Clearance Stage I is under process.
13	Revalidation of TEC	14/07/2025	CEA extend the validity of appraisal to Sawalkot HEP (1856 MW) in favour of NHPC Lid. For further one more year, i.e. upto 17/04/2026 on the same terms and conditions as mentioned on OM dated 18/04/2018.
14	Transfer of TOR	20/08/2025	From "M/s J&K Power Development Corporation" to "M/s. NHPC Limited" All the points stipulated in the ToR letter no. J-12011/19/ 2011-IA-I dated 12/06/2013 shall remain unchanged.
15	Biodiversity & Wildlife Conservation and Management Plan	27/08/2025	Approved by Office of PCCF (Wildlife)/ Chief Wildlife Warden, Govt. of Jammu & Kashmir.

xv. **Baseline Environmental Scenario:**

The field surveys for the collection of primary data commenced from March 2012 and were completed in August 2012 covering winter, pre-monsoon /summer and monsoon

to collect data/ information on terrestrial ecology and physical environment parameters. Further, fresh baseline data has been collected for three seasons in July 2022 to May 2023 for monsoon, winter and pre-monsoon season to find out any Environmental base line data changes. The data has been compared with the data collected in 2012.

a. **Additional Base line data collection:** Ambient Air quality and noise monitoring was carried out at same 6 locations. Surface water quality was monitored at 9 locations during 2022-23 as compared to 8 locations during 2012. All the 8 locations of 2012 were covered in 2022-23 study with new location added is SW9 (Mandiyal Khad near Tangar Village), which is the left bank tributary of Chenab River and located on upstream of proposed dam site. Ground water samples were collected and analyzed from 3 locations. Comparison could not be made as there were no ground water samples in earlier EIA. Soil samples were collected at 9 locations and compared with 8 locations from earlier EIA. Vegetation sampling and transects were laid at 9 locations and compared with that of earlier EIA report.

b. **Comparison of Baseline Data:**

1. **Ambient Air quality**: In 2012, the maximum $PM_{2.5}$ levels ranged from 9.2 µg/m³ at AQ6 to 31.9 µg/m³. Whereas in 2022–23, significant increases were observed at most locations, with values ranging from 16.2 µg/m³ to 50.9 µg/m³. Similarly, PM_{10} concentrations showed a rise over the decade. In 2012, maximum PM_{10} ranged from 10.8 µg/m³ to 40.5 µg/m³. Whereas in 2022–23, maximum levels increased to 26.6 µg/m³ and 88.4 µg/m³, indicating higher dust and vehicular emissions. However, the concentration of Particulate matters are well within the permissible limits.

2. **Surface Water quality**: All the samples during 2012 baseline studies as well as during 2024-25 baseline studies fall under Class B as per "Water Quality Criteria of Central Pollution Control Board" i.e., Outdoor bathing (Organised), which shows the presence of anthropogenic pollution sources in the area.

- **pH**: Across all sites and seasons, pH values remain within the permissible range (6.5–8.5). A marginal increase is observed in recent years (2022–23) during winter and pre-monsoon, indicating slightly more alkaline water.

- **Dissolved Oxygen (DO):** DO levels have generally decreased over the past decade in all seasons, especially during winter and monsoon. Lower DO in 2022–23 suggests increased organic load or reduced self-aeration capacity of water bodies.

- **Electrical Conductivity (EC) and Total Dissolved Solids (TDS**): A clear increase in EC and TDS values is observed in 2022–23 compared to 2012

across all seasons. The rise is most prominent during the monsoon, possibly due to runoff carrying dissolved solids and ions from surrounding areas.

- **Hardness (Total, Calcium, Magnesium):** Total hardness, as well as calcium and magnesium concentrations, have increased significantly in 2022–23. The increase is more evident in winter and monsoon seasons, pointing towards higher leaching of minerals and anthropogenic inputs.

- **Sodium and Potassium Ions:** Both sodium and potassium levels exhibit a rising trend across all sites and seasons. This indicates increasing contribution of domestic and agricultural activities (fertilizer use, detergents, sewage input).

- **Biological Oxygen Demand (BOD):** BOD levels remain relatively low but show a slight increase in 2022–23 compared to 2012. The trend suggests gradual organic pollution, though still within acceptable limits.

- **Conclusion:** These changes indicate growing influence of anthropogenic activities (domestic wastewater, road construction, runoff from settlements and agriculture) on the water bodies. This shift can be attributed to ongoing infrastructure activities, including the widening and strengthening of National Highway-44 passing through the study area, along with developmental works linked to the expansion of Ramban Town.

3. **Soil quality:** In the present study (2022-23), the soil samples were collected on the same 6 locations as in the study conducted during 2012. However, a few parameters differ between the studies. For instance, Total Nitrogen (mg/kg) was quantified in 2012, whereas Available Nitrogen (kg/ha)was quantified in the 2022–23 study. In 2012, porosity was measured in g/cm², while in 2022–23 it was measured as a percentage (%).The analysis of the soil data reveals several significant changes between the years 2012 and 2022-23. Comparison of different year data shows that the Soil texture has shifted variably, with increases in sand or clay depending on site. Soil fertility has declined due to reduced organic matter, nitrogen, phosphorus, and potassium. Base cations (Ca, Mg, Na) show major depletion, indicating nutrient loss and possible leaching. Soil pH shifted towards neutral, which is favorable for crops.

Conclusion: There has been a progressive decline in nutrient status and organic matter content over the past decade, indicating stress on soil fertility largely due to anthropogenic pressures and natural processes.

4. **Floristic Diversity**: In the present study, a list of 310 species of angiosperm has been compiled as compared to the list of 304 plant species reported in the previous study.

   As per data collected from July 2022 to May 2023, a total number of 112 plant species of angiosperm, belonging to 45 family, were sighted and recorded in the study area. The number of gymnosperms, pteridophytes, bryophytes and lichens remain unchanged. From 2012 to 2023, both trees and shrubs increased in number across all sites. The number of trees grew steadily, while shrubs showed a more pronounced rise. In comparison to the data from 2012, the diversity pattern of trees increased across all sites over the decade. Shrubs indicates a modest drop in diversity. The decline in shrub diversity may be due to an increase in species such as *Dodonaea viscosa, Artemisia nilagirica,* and *Nerium oleander,* which are better adapted to grow in degraded lands.

5. **Faunal Diversity:** The Wildlife (Protection) Amendment Act, 2022, amends the existing Wild Life (Protection) Act, 1972. After amendment, there are significant changes in the conservation status of faunal species.

   No additional mammalian species was reported in the present study. However, 15 species of avifauna, 12 species of herpetofauna (reptiles) and 1 species of butterflies have been added to the present study.

   As per WPAA 2022, 15 species of mammals, 05 species of avifauna and 05 species of herpetofauna reported from the study area are under Schedule-I.

6. **Fish diversity**: Experimental fishing in the Chenab River and its tributaries (2022–23 survey) confirmed the presence of *Schizothorax richardsonii*. No new species were recorded compared to the 2012 study.

c. E flows: As per ToR conditions "*the minimum environment flow shall be 20% of the flow of four consecutive lean months of 90% dependable year; 30% of average monsoon flow the flow for remaining months shall be in between 20-30% depending on the site-specific study*". Keeping the TOR condition, a scientific study has been undertaken to establish the flow requirement Following can be concluded from the hydrodynamic modeling exercise: The e-flows to be released by the project have been taken as per recommendation of study. *No changes in e-flows* for the project are proposed to be made since the proposed e-flows are sufficient to maintain the required water depth as per the study for sustenance for aquatic ecology of Chenab River

d. The details base line data are as under:

Period | **From December 2012 to August 2012 and December 2024 to April 2025**

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

Core Zone

Parameter	Unit	Min	Max	Standards
$PM_{2.5}$	$\mu g/m^3$	15.10	53.30	34.20
PM_{10}	$\mu g/m^3$	25.00	90.70	57.85
SO_2	$\mu g/m^3$	4.30	13.30	8.80
NO_2	$\mu g/m^3$	5.10	22.00	13.55

Buffer Zone

Parameter	Unit	Min	Max	Standards
$PM_{2.5}$	$\mu g/m^3$	27.80	46.00	36.90
PM_{10}	$\mu g/m^3$	61.50	84.40	72.95
SO_2	$\mu g/m^3$	7.80	10.90	9.35
NO_2	$\mu g/m^3$	11.10	18.20	14.65

Incremental GLC Level

Criteria Pollutant	Unit	Baseline Concentration [A]	Predicted incremental value considering worst case stability class [B]	Total GLC [A]+[B]
PM_{10}	$\mu g/m^3$	29.8	7.45	37.25
$PM_{2.5}$	$\mu g/m^3$	18.2	4.55	22.75
SO_2	$\mu g/m^3$	4.9	5.88	10.78
NO_2	$\mu g/m^3$	5.9	7.08	12.98

River water samples (09 samples)

Core Zone

S. No.	Parameters	Min	Max	Standards
1	pH	7.74	8.4	8.5
2	Total Dissolved Solids, mg/L	80.6	250	0
3	Dissolved Oxygen (mg/l)	8.8	12.2	6
4	Chloride (as Cl), mg/L	12.2	39.9	0
5	Total Hardness (as CaCO3), mg/L	69	118	0
6	Biological Oxygen Demand (mg/l)	0.9	1.3	2
7	Chemical Oxygen Demand (mg/l)	3.7	5.1	0
8	Total Coliform (MPN/100 ml)	110	220	50

Buffer Zone

S. No.	Parameters	Min	Max	Standards
1	pH	7.55	8.46	8.5
2	Total Dissolved Solids, mg/L	84.5	205	0
3	Dissolved Oxygen (mg/l)	6.3	12.3	6
4	Chloride (as Cl), mg/L	5.9	32.6	0

5	Total Hardness (as CaCO3), mg/L	44	95.8	0
6	Biological Oxygen Demand (mg/l)	0.7	1.3	2
7	Chemical Oxygen Demand (mg/l)	2.9	5	0
8	Total Coliform (MPN/100 ml)	50	140	50

Pond water samples quality at –locations

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Ground Water samples at 3 locations

Core Zone

S. No.	Parameters	Min	Max	Desired Limits	Permissible Limits
1	pH	7.23	7.4	6.5	8.5
2	Total Dissolved Solids, mg/L	593	605	500	2000
3	Chloride (as Cl), mg/L	10.9	17.4	250	1000
4	Total Hardness (as CaCO3), mg/L	59.8	69.7	200	600
5	Fluoride (as F), mg/L	0	0	1.0	1.5

Buffer Zone

S. No.	Parameters	Min	Max	Desired Limits	Permissible Limits
1	pH	7.2	7.5	6.5	8.5
2	Total Dissolved Solids, mg/L	397	642	500	2000
3	Chloride (as Cl), mg/L	13.4	22.8	250	1000
4	Total Hardness (as CaCO3), mg/L	61.2	87.1	200	600
5	Fluoride (as F), mg/L	0	0	1	1.5

Noise levels Leq (Day & Night) at 6 Locations

Zone	Category	Leq Day dB(A)		Leq Night dB(A)		Prescribed Limits	
		From	To	From	To	Day	Night
Core	Residential	48.3	56.2	37.3	43.2	55	45
Buffer	Commercial	52.7	63.3	40.5	49.4	65	55

Soil Quality at 6 Locations

Core Zone

S. No.	Parameters	Min	Max	Prescribed Limits
1	Calcium (mg/kg)	2448	3125	500
2	Magnesium (mg/kg)	108	129	500
3	Nitrogen (kg/ha)	261	356	500

4	Phosphorus (kg/ha)	31.4	39.7	50
5	Potassium (kg/ha)	125.1	180	500
6	Carbon (%)	0.42	0.77	4
7	Sodium Absorption Ratio	0.18	0.85	10
8	Salinity (ppt)	0	0	0

Buffer Zone

S. No.	Parameters	Min	Max	Prescribed Limits
1	Calcium (mg/kg)	1094	2670	500
2	Magnesium (mg/kg)	95	162	500
3	Nitrogen (kg/ha)	261	356	500
4	Phosphorus (kg/ha)	18.9	32.3	50
5	Potassium (kg/ha)	81	210	500
6	Carbon (%)	0.24	0.98	4
7	Sodium Absorption Ratio	0.73	1.59	10
8	Salinity (ppt)	0	0	0

Flora& Fauna

Schedule-I species observed in the study area:

As per the Wildlife (Protection) Amendment Act, 2022, 15 mammals (Common Leopard, Mainland Leopard Cat, Jungle Cat, Indian Grey Mongoose, Small Indian Mongoose, Golden Jackal, Red Fox, Bengal Fox, Wild Dog/Dhole, Asiatic Black Bear, Himalayan Weasel, Common Otter, Barking Deer/Northern Red Muntjac, Himalayan Goral and Indian Crested Porcupine); 5 birds (Egyptian Vulture, Himalayan Griffon, Golden Eagle, Himalayan Monal and Kaleej Pheasant); and 5 herpetofauna (Rat Snake, Red Sand Boa, Indian Cobra, Russell's Viper and Bengal Monitor Lizard) species are listed as Schedule I species.

xvi. **Details of Solid waste/Hazardous waste generation**: Generation of Municipal Solid Waste- Bio degradable (5475.0 Tons in 7.5 years), Generation of Non degradable (5625.0 Tons in 7.5years). Solid waste management shall involve Reuse/Recycling, Storage/Segregation, Collection and Transportation and Disposal of Degradable component, non-degradable component& bio-medical waste.

xvii. **Muck Disposal Plan**: Total quantity of Muck to be dumped: 77.30 lakh cum. Two muck disposal areas named as MDS-1 and MDS-2 have been identified located on the left bank of Chenab river upstream of Dam site, wherein one dumping siteMDS-1 is located near Pari village and other dumping site MDS-2 is located near Tangar village. Total capacity of these sites is about 48.2 lakh cum. Bothof the muck disposal sites have been identified in vicinity of the area where the muck is likely to be generated in order to minimize the cost of transport and mitigation of dust pollution which may occur during transportation.

xviii. **Public Hearing:** Public Hearing for the proposed Sawalkot Hydroelectric Project (1856 MW) was conducted by the J&K State Pollution Control Board in three districts of the project area, viz. Udhampur on 18.01.2016, Reasi on 21.01.2016, and Ramban on 28.01.2016.

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

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

1. EAC Meeting Details:

EAC meeting/s	40th Meeting
Date of Meeting/s	26.09.2025
Date of earlier EAC meetings	• 29-30/04/2011 & 2-3/06/2011 (Scoping Clearance/ TOR for 1200 MW) • 22-23/02/2013 (Amendment of TOR for 1856 MW) • 20-21/07/2015 (Extension of TOR validity for 1856 MW) • 30/12/2016 (Appraisal by EAC for Environmental Clearance) • 30–31/01/2017 (Recommended for Environmental Clearance) • 20/08/2025 (Transfer of TOR from JKSPDC Ltd. to NHPC Ltd.)

2. Project details:

Name of the Proposal	Sawalkot HE Project (1856 MW)
Proposal No.	IA/JK/RIV/551637/2025
Location (Including Coordinates)	State: Jammu & Kashmir District: Ramban, Udhampur and Reasi Location of dam & Power House Site: 33° 0′ 11″ N 75° 06′ E
Company's Name	M/s NHPC LMITED
CIN no. of Company/user agency	L40101HR1975GOI032564
Accredited Consultant and certificate no.	Name: R S Envirolink Technologies Pvt. Ltd. Certificate No.: NABET/EIA/25-28/RA 415
Project location (Coordinates /River/ Reservoir)	State: Jammu & Kashmir District: Ramban, Udhampur and Reasi Location of dam & Power House Site: 33° 0′ 11″ N 75° 06′ E River- Chenab River

Inter- state issue involved	No
Proposed on River/ Reservoir	Chenab River
Type of Hydro-electric project	Run-of-river
Seismic zone	V

3. Category details:

Category of the project	A
Capacity / Cultural command area (CCA)	1856 MW
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	-

4. ToR/EC Details:

ToR Proposal No.	• F. No. J-12011/19/2011-IA-I • IA/JK/RIV/9862/2012 (TOR amendment) • IA/JK/RIV/547496/2025 (Transfer of ToR)
EAC meeting date	• 29-30/04/2011 & 2-3/06/2011 (Scoping Clearance/ TOR for 1200 MW) • 22-23/02/2013 (Amendment of TOR for 1856 MW) • 20-21/07/2015 (Extension of TOR validity for 1856 MW) • 30/12/2016 (Appraisal by EAC for Environmental Clearance) • 30–31/01/2017 (Recommended for Environmental Clearance) • 20/08/2025 (Transfer of TOR from JKSPDC Ltd. to NHPC Ltd.)
ToR Letter No.	• J-12011/19/2011-IA-I
ToR grant Date	• 30.10.2011 (for 1200 MW) • 12.06.2013 (for 1856 MW) • 01.10.2015 (validity extension of TOR) • 20.08.2025 (Transfer of ToR)
Cost of project	Rs. 31380.61 Crore
Total area of Project	1401.35 Ha
Height of Dam from River Bed (EL)	192.5 m from deepest foundation level
Details of submergence area	1159.73 ha
District to provide irrigation facility (if applicable)	NA

Details of tunnels on upper level & lower level and length of canal (if applicable)	HRT Number: 03 ; Length 200 m each TRT Number: 04 TRT-1=1743m; TRT-2=1720m; TRT-3=199m; TRT-4=1915m
No. of affected Village	112
No. of Affected Families	1477
Project Benefits	**Social Benefits** A number of marginal activities and jobs will be available to the locals during the construction phase. Local Area development facilities in education, medical, transportation, road network and other infrastructure. An opportunity for small- scale and cottage industries to develop in the area. **Financial Benefits** Total Design Energy is 7533.90 MU. An investment of Rs. 31380.61 cr will be made for the project.
R&R details	A total of 13 villages from two tehsils viz. Ramban and Gool Sangaldan of Ramban district will be affected due to acquisition of land for the construction of components of the Sawalkote HEP. A total of 1477 PAFs belonging to 575 households with a total population of 3977 have been identified as affected families by the project authorities and same list have been used for socio-economic survey and preparation of R&R Plan. During the survey 28 persons have been identified as vulnerable persons i.e. widow and disabled. There are 1477 displaced families requiring resettlement. Keeping in view that displaced population is of the order of 3977 persons; an area of 50 hectares is suggested to be acquired for development of resettlement colony. A budgetary provision of Rs. 19000.00 lakh has been kept towards implementation of R&R plan.
Catchment area/ Command area	Catchment Area: 19,475 sq km
Types of Waste and quantity of generation during construction/Operation	Municipal Solid Waste during construction - Degradable (5475 Tons in 7.5 years), Non degradable (5625 Tons in 7.5 years)
Material used for blasting and its composition as per DGMS standards.	Explosives will be required to be stored at site during construction period. It is proposed to install a 50 T magazine to cater to requirement of project works. Magazine structure means a building specially constructed in accordance with a design approved by the Chief Controller and intended for storage of

<table>
<tr><td></td><td>more than 5 kg of explosives. Distances between two magazines or between a magazine and other buildings, road, railway, etc. is governed by the Safety Distances given at Schedule VIII of the Explosives Rules, 1983 and are based on the category and quantity of explosive material stored.</td></tr>
<tr><td>E-Flows for the Project</td><td>
<table>
<tr><th></th><th rowspan="2">Season</th><th colspan="2">EAC recommendation 2017*</th></tr>
<tr><th>Cumec</th><th>Per Cent</th></tr>
<tr><td rowspan="3">E-Flows (Cumec)</td><td>Lean</td><td>39.97</td><td>20.0</td></tr>
<tr><td>Monsoon</td><td>571.89</td><td>41.02</td></tr>
<tr><td>Non-monsoon/ Non-lean</td><td>159.73</td><td>25.0</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>Is Projects earlier studied in Cumulative Impact assessment & Carrying Capacity studies(CIA&CC) for River in which project located. If yes then
c) E-flow with TOR/Recommendation by EAC as per CIA&CC study of River Basin.
d) If not the E-Flows maintain criteria for sustaining river ecosystem.</td><td>No</td></tr>
<tr><td>Details on provision of fish pass</td><td>Due to the height of the dam, it seems unrealistic to build functional fish ladders or fish lifts that can help the Mahseer to migrate past the Sawalkote dam. In addition, it is unlikely that fry and young fish that drift or actively migrate downstream will survive passing through the turbines or the overflow from the dam. The fish stocked upstream will therefore not contribute to the population increase of Mahseer in the lower Chenab reaches. The biologically and economically best alternative to compensate for the obstructed migration possibilities of the Mahseer is the option of artificial hatching and continuous restocking of the reservoir. It is therefore</td></tr>
</table>

	recommended to build a new hatchery in the Sawalkote Project area.
Project benefit including employment details (no of employee)	It is expected that the impletion of 1856 MW Sawalkote will generate an employment for 6500 persons approximately in unskilled, semiskilled and skilled categories. The locals shall be given preference wherever they are suitable in a particular category.
Area of Compensatory Afforestation (CA) with tentative no of plantation.	1951.878 ha; tentative no. of plantation - 1584959
Previous EC details	-
EC Compliance Report by R.O, MOEF&CC	-
No. of trees/saplings proposed in view of 'Ek Ped Maa Ke Naam' campaign	1000

5. Electricity Generation Capacity:

Powerhouse Installed Capacity	1856 MW
Generation of Electricity Annually	7994.73 MU (95% Dependable Year)
No. of Units	8 x 225 MW & 1 x 56 MW

6. Muck Management Details:

No. of proposed disposal area/ (type of land- Forest/Pvt land)	2 nos. MDS 1 – 9 ha (forest land) MDS 2 – 33 ha (non-forest land)
Cross section of proposed muck area, Height of muck with slope.	Attached as Appendix I
Distance of muck disposal area (location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.	170 m from HFL.
Total Muck Disposal Area	42 ha
Estimate Muck to be generated	77.30 lakh Cum
Transportation	The generated muck will be carried in dumper trucks covered with heavy-duty tarpaulin properly tied to the vehicle in line with

	international best practices. All precautionary measures will be followed during the dumping of muck. Based upon the varying cycle time of 20T Rear Dumpers at different excavation sites and their distance from the disposal site appropriate pollution management will be devised. The Standard practices of pollution abatement and control will be enforced through the contractor.
Monitoring mechanism for Muck Disposal Transportation	The provisions of Monitoring have been kept under proposed Environmental Monitoring Plan.

7. Land Area Breakup:

Private land	175.65
Government land	378.53
Forest Land	847.17
Total Land	1401.35
Submergence area/Reservoir area	1159.73 ha
Additional information (if any)	-

8. Presence of Environmentally Sensitive areas in the study area

Forest Land/ Protected Area/ Environmental Sensitivity Zone	Yes/ No	Details of Certificate/ letter/ Remarks
Reserve Forest/ Protected Forest Land	No	No project component falls in any notified protected area. Nearest Protected Area to the Project Components is Kishtwar High Altitude National Park which is at a distance of around 62.8 km (with ESZ boundary 57.6 km away) from tip of proposed reservoir area.
National Park	No	
Wildlife Sanctuary	No	
Archaeological sites monuments/ historical temples etc.	No	
Additional information (if any)	-	

Availability of Schedule-I species in study area: As per the Wildlife (Protection) Amendment Act, 2022, 15 mammals (Common Leopard, Mainland Leopard Cat, Jungle Cat, Indian Grey Mongoose, Small Indian Mongoose, Golden Jackal, Red Fox, Bengal Fox, Wild Dog/Dhole, Asiatic Black Bear, Himalayan Weasel, Common Otter, Barking Deer/Northern Red Muntjac, Himalayan Goral and Indian Crested Porcupine); 5 birds (Egyptian Vulture, Himalayan Griffon, Golden Eagle, Himalayan Monal and Kaleej Pheasant); and 5 herpetofauna (Rat Snake, Red Sand Boa, Indian Cobra, Russell's Viper and Bengal Monitor Lizard) species are listed as Schedule I species.

9. Public Hearing (PH) Details

<table>
<tr><td>Advertisement for PH with date</td><td>12/12/2015 – Reasi district
14/12/15 – Ramban district
15/12/15 – Udhampur</td></tr>
<tr><td>Date of PH</td><td>21/01/2016 – Reasi district
28/01/2016 – Ramban district
18/01/2016 – Udhampur</td></tr>
<tr><td>Venue</td><td>
<table>
<tr><th>District</th><th>Date/Time</th><th>Venue</th></tr>
<tr><td>Udhampur</td><td>18.01.2016/</td><td>Forest Rest House, Chulna,</td></tr>
<tr><td>Reasi</td><td>21.01.2016/10:00</td><td>SDM Office complex</td></tr>
<tr><td>Ramban</td><td>28.01.2016/10:00</td><td>Project Site, Village</td></tr>
</table>
</td></tr>
<tr><td>Chaired by</td><td>Meeting at Pancheri was chaired by Additional Deputy Commissioner, Udhampur District
Meeting at Mahore was chaired by Additional District Development Commissioner, Reasi District
Meeting at Tanger was chaired by Additional Deputy Commissioner, Ramban District</td></tr>
<tr><td>Main issues raised during PH</td><td>i. Local Development Facilities – Demand for hospitals, schools, drinking water, roads, and other basic amenities.
ii. Employment – Preference for local youth (affected families) in unskilled, semi-skilled, and skilled jobs, and maximum permanent jobs for locals.
iii. Skill Development – Establishment of ITI/skill development centres locally (at Udhampur, Mahore, Sawalkote, Ramban), with special priority for local youth training.
iv. Road Connectivity – Better road access to project sites, particularly extension from Dugga (Reasi) to Sarthalakote.
v. Compensation – Demand for compensation at present/market rates for land, houses, trees, cattle sheds, etc., with revision of stamp duty (circle) rates.
vi. Free Electricity – Request for free power supply to affected local areas under submergence.
vii. Environmental Concerns – Proper mitigation and management of environmental impacts expected during construction and operation.</td></tr>
<tr><td>No. of people attended</td><td>426</td></tr>
</table>

10. Brief of base line Environment:

<table>
<tr><td>Particulars</td><td colspan="4">Details</td></tr>
<tr><td rowspan="8">Period of baseline data collection/Sampling period.
(Air, noise, water, land)
flora and fauna of the project area,
aquatic ecology, etc.</td><td>Parameters</td><td>Monsoon</td><td>Winter</td><td>Pre-Monsoon/ Summer</td></tr>
<tr><td>Soil</td><td>August 2012 (Previous)
July 2022 (current)</td><td>March 2012 (Previous)
January 2023 (current)</td><td>June 2012 (Previous)
May 2023 (current)</td></tr>
<tr><td>Air Environment</td><td>August 2012 (Previous)
July 2022 (current)</td><td>March 2012 (Previous)
January 2023 (current)</td><td>June 2012 (Previous)
May 2023 (current)</td></tr>
<tr><td>Noise & Traffic</td><td>August 2012 (Previous)
July 2022 (current)</td><td>March 2012 (Previous)
January 2023 (current)</td><td>June 2012 (Previous)
May 2023 (current)</td></tr>
<tr><td>Water Quality</td><td>August 2012 (Previous)
July 2022 (current)</td><td>March 2012 (Previous)
January 2023 (current)</td><td>June 2012 (Previous)
May 2023 (current)</td></tr>
<tr><td>Vegetation</td><td>August 2012 (Previous)
July 2022 (current)</td><td>March 2012 (Previous)
January 2023 (current)</td><td>June 2012 (Previous)
May 2023 (current)</td></tr>
<tr><td>Fauna surveys</td><td>August 2012 (Previous)
July 2022 (current)</td><td>March 2012 (Previous)
January 2023 (current)</td><td>June 2012 (Previous)
May 2023 (current)</td></tr>
<tr><td>Socio-economic survey</td><td colspan="3">March 2012 (Previous)
January 2023 (current)</td></tr>
<tr><td>Brief description on hydrology and water assessment as per the</td><td colspan="4">The proposed Sawalkote HEP is a run of river type development across river Chenab in UT of J&K. The Sawalkote H.E. Project is located on Chenab downstream of the Dharamkund G&D site</td></tr>
</table>

approved Pre-DPR:	and upstream of the Akhnoor. The water availability series for the Sawalkote H.E. Project for the period 1975-76 to 2008-09 has been worked out from the 10-daily flow observed at Dhamkund on catchment area proportion basis. Design flood (PMF) estimated at project site is 18711 cumecs. Design discharge of 519.16 m^3/s, 479.19 m^3/s and 319.46 m^3/s
Additional detail (If any)	-

11. Court case details: Nil

12. Status of other statutory clearances

Particulars	**Letter no. and date**
Status of Stage- I FC	Stage-I (in-principle) approval granted by MoEF&CC (Forest Conservation Division) on 10.07.2025. Online Proposal No. FP/JK/HYD/150591/2021
Approval of Central Water Commission	• CEA-HY-12-20/1/2021-HPA DIVISION I/514774/2025 Dated: 14/07/2025
Approval of Central Electricity Authority	• CEA-HY-12-20/1/2021-HPA DIVISION I/514774/2025 Dated: 14/07/2025
Additional detail (If any)	
Is FRA (2006) done for FC-I	Yes FRA Certificates issued by 3 No Districts 1. District Collector, Ramban vide No. DCR/HQA/4146-50 dated 24.02.2023. 2. District Collector, Udhampur vide No. DCU/SQ/6429-30-50 dated 28.11.2022. 3. District Collector, Reasi vide No. DC/RSI/SQ/22-23/7208 dated 05.12.2022.

40.2.3 The EAC during deliberations noted the following:

- The Expert Appraisal Committee (EAC) deliberated on the information submitted by the Project Proponent and the details presented during the meeting. The Committee observed that the proposal pertains to the grant of Environmental Clearance for Sawalkote H.E. Project (1856 MW) in an area of 1401.35Ha located at Village Bhajmasta, Sub-district Ramban, District Ramban, Jammu & Kashmir by M/s NHPC

Limited.

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

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

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

- The Committee noted that the Terms of Reference (ToRs) for 1200 MW were earlier issued by Ministry vide letter No. J-12011/19/2011-IA-I dated 30.10.2011, amended for 1856 MW dated 12.06.2013 and further extended vide letter dated 01.10.2015.

- It has been noted by the EAC that the project [proposal number: IA/JK/RIV/53027/2015] was earlier considered by the EAC in its meetings held on 30.12.2016 and 30-31.01.2017 and was recommended for grant of Environmental Clearance (EC) for the project to M/s JKPDC in the EAC meeting held on 31.01.2017. However, the EC could not be issued by the Ministry due to involvement of forest land as the Stage-I forest clearance was not obtained by the PP. Meanwhile PP has been changed from M/s J&K Power Development Corporation (JKPDC) to M/s NHPC limited. Therefore, Terms of reference (ToR) was transferred in favour of M/s NHPC by MoEF&CC on 20.08.2025 from J&K Power Development Corporation (JKPDC).

- PP not submitted Stage-I FC within stipulated time frame, i.e. 18 months; therefore, the PP submitted the proposal on Parivesh-2 for consideration by the EAC in terms of the provisions of the MoEF&CC Office Memorandum dated 19.06.2014 along with Stage-I Forest Clearance granted by the Ministry vide letter dated 10.07.2025 in favour of NHPC Ltd. The EAC noted that collection of primary data completed in 2012 more than 10 years and PP has collected a fresh baseline data for three seasons in July 2022 to May 2023 for monsoon, winter and pre-monsoon season. The data has been compared with the data collected in 2012. Additionally, PP has submitted additional EIA report along with fresh baseline data.

- The EAC noted that there have not been significant changes in the environmental baseline data from 2012 to May 2023. However, a comparison with the 2012 data indicates an increasing influence of anthropogenic activities such as domestic wastewater discharge, road construction, and runoff from settlements and agricultural areas on the water bodies.

- The EAC noted that the total land requirement for the project was earlier 1401.35 ha, and in the fresh proposal, the land requirement remains unchanged. However, as per the forest proposal, for the diversion of forest land, the total forest area need to be diverted for Sawalkote HEP is 847.17 ha. In addition to 684.15 ha reserve forest, 162.02 ha revenue forest is also considered under forest diversion proposal of Sawalkote HEP. The Stage-I (in-principle) Forest Clearance approval has been granted by MoEF&CC for 847.17 ha forest land on 10.07.2025. There is no national park, wildlife sanctuary, Biosphere Reserve, Tiger/Elephant Reserve, Wildlife Corridor etc. within 10 km distance from the project site. Nearest Protected Area to the Project Components is Kishtwar High Altitude National Park which is at a distance of around 62.8 km (with ESZ boundary 57.6 km away) from tip of proposed reservoir area.

- The EAC observed that the present estimated project cost is Rs. 31,380.61 crore, which has increased from the earlier estimated cost of Rs. 22,190.66 crore. Additionally, the total capital cost earmarked towards the Environmental Management Plan (EMP)/environmental pollution control measures was Rs. 56,249.95 lakh, as compared to the earlier allocation of 39285.18 Lakh (in 2016). The Committee noted that although the overall project cost has escalated over time, the EMP budget has not been increased proportionately. Accordingly, the Project Proponent (PP) has submitted the revised EMP budget of Rs. 59,400.77 lakh. The EMP cost is revised from Rs. 39285.18 Lakh (2016) to Rs. 59400.77 Lakh (2025). The details of cost of Environmental management Plan (EMP) are as under:

Project Revised EMP Budget in respect of Sawalkote HE project

Management Plans	**Amount (Rs. in lakhs)**		**Percentage(%) on current price level**	**Remarks**
	EIA Report, 2016	**Revised (2025)**		
Environment Management				
Biodiversity Conservation & Management Plan	340	708	108.24	Revised as per approved plan

Catchment Area Treatment Plan	5929	22525.77	279.93	Revised as per approved plan
Fishery Conservation & Management Plan	488	503	3.07	Revised based on current price
Solid Waste Management Plan	1088	1360	25	Revised based on current price
Public Health Delivery System	962	1202	24.95	Revised based on current price
Energy Conservation Measures	870	1085	24.71	Revised based on current price
Muck Disposal Plan	5128	6922	34.98	Revised based on current price
Landscaping and Restoration Plan of Quarry & Working Areas	322.18	402	24.77	Revised based on current price
Air & Water Management Plan	282.5	353	24.96	Revised based on current price
Reservoir Rim Treatment	1234	1542	24.96	Revised based on current price
Rehabilitation and Resettlement Plan (including Rs. 3000 lakh for Local Area Development Plan)	22000	22000	0.00	Under implementation, provisional cost. Final cost will be as per award issued by Collector
Environmental Monitoring Programme	331	413	24.77	Revised based on current price
Dam Break Modelling (including DMP)	310.5	385	23.99	Revised based on current price
Total	**39285.18***	**59400.77**	**51.20**	**Increased by 51.20%**

*EMP cost excluding CA&NPV

- It was observed that Public Hearing for the proposed Sawalkot Hydroelectric Project (1856 MW) was conducted by the J&K State Pollution Control Board in three districts of the project area, viz. Udhampur on 18.01.2016, Reasi on 21.01.2016, and Ramban on 28.01.2016. As informed by the PP had informed that there has been no change in the demographic profile of the region, primarily due to the continuing lack of the basic infrastructure and development interventions. All the key features of the project namely its location, technical parameters, land requirement, project affected villages and families remain unchanged since the last public hearing.

- The EAC discussed the concerns raised during the Public Hearing (PH) After detailed deliberation, the Committee found the action plan satisfactory, recognizing that the

proposed mitigation measures adequately respond to stakeholders' concerns. The EAC was of the view that there is no requirement of fresh public hearing. However, it was emphasized to fulfil the commitments made in time bound manner.

40.2.4: The EAC after examining the information submitted and detailed deliberations reiterated its earlier recommendation on the project and recommended the proposal for grant of prior Environmental Clearance to Sawalkote H.E. Project (1856 MW)in an area of 1401.35 Ha located at Village Bhajmasta, Sub-district Ramban, District Ramban, Jammu & Kashmir by M/s NHPC Limited under the provisions of EIA Notification, 2006 and as amended with subject to compliance of applicable Standard EC conditions with the following additional specific environmental safeguard conditions**:**

[A] Environmental management and Biodiversity conservation:

i. On-line monitoring system for the e-flow releases to be installed.
ii. The plastic waste shall be disposed of by recycling and not by land filling.
iii. Local indigenous varieties of plants to be grown and maintained till their full growth including gap filling.
iv. Land acquired for the project shall be suitably compensated with the prevailing guidelines and all commitments made during the Public Hearing shall be fulfilled.
v. The project-affected population should be resettled and rehabilitated as per the latest R & R Policy.
vi. Six monthly compliance reports shall be submitted by the PP to Regional Office, MoEF& CC, Jammu, J&K without fail until completion of the works.
vii. The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. The budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also be updated proportionately.
viii. The contract clause limiting the No. of vehicles used during excavation and transportation shall followed scrupulously and the same shall informed to the ministry.
ix. Ambient Air Quality Monitoring Stations for real time data to be installed at project site before commencement of the construction, shall be displayed at project site and its report to be submitted to IRO, MoEF&CC.
x. The Project Proponent shall explore the possibility to undertake tree transplantation, wherever feasible, in consultation with the State Forest Department. Survival of at least 80% of transplanted trees shall be ensured, with monitoring for a minimum period of five years.
xi. Plantation of saplings shall be carried out as a part of the tree plantation campaign "Ek Ped Ma Ke Naam" and the details of the same shall be uploaded in the https://merilife.nic.in/

[B] Disaster Management:

i. Disposal of the excavated muck and its filling on the low-lying area with proper measures for the stabilization and greenery to minimize the impacts of the generated construction muck shall be taken up pari passu with construction work.
ii. Stabilization of muck disposal sites using biological and engineering measures shall be taken up immediately to ensure that muck does not roll down the slopes and does not pollute the natural streams and water bodies in surrounding area. The plantation on muck disposal site with local species for restoration of ecology and environment of the project site area shall be done as per instructions of the Forest Department.
iii. Necessary control measures such as water sprinkling arrangements, and construction of paved roads leading to muck disposal sites etc. shall be taken up on priority to arrest fugitive dust at all the construction sites**.**
iv. Solid waste generated, especially plastic waste, etc. should not be disposed of as landfill material. It should be treated with scientific approach and recycled. Use of single-use plastics may be discouraged.

[C] Socio-economic:

i. Land acquired for the project shall be suitably compensated in accordance with the prevailing guidelines of the state government and provisions under Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.
ii. Solar panel be provided to the families living in rural areas within 10 km radius of project with annual maintenance.
iii. School up to 12th Standard with smart classes shall be established and managed to provide free quality education for children from project affected villages/Tribal villages.
iv. Scholarship programme shall be initiated for the youths in the project affected villages.
v. 50 bed multi-specialty hospital shall be established to cater the need of tribal population/locals. The tribal population within 10 km radius of the project/Project Affected Villages shall be given free of cost medical facility.
vi. Skill Development Centre shall be established within 10 km radius of the project and regular training programmes for development and promotion of traditional art/products of tribal/local population. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, the necessary training be provided to the youths for their appropriate engagements in the Project.
vii. Bio-Gas plant shall be installed in the villages in the Project affected area for Utilizing Cattle waste (Cow Dung) into renewable source of fuel.
viii. An institutional mechanism to be developed to ensure the preference of jobs to PAFs and also a policy for preferential treatment for award of sundry works to the PAFs and their dependents**.**
ix. The compliance of above conditions shall be monitored by IRO, MoEF&CC and regularly site visit once in year. The compliance report of IRO shall be regularly submitted to MoEF&CC.

[D] Miscellaneous:

i. After 5 years of the commissioning of the project, a study shall be undertaken regarding impact of the project on the environment. The study shall be undertaken by an independent agency.
ii. A dedicated team to oversee environmental management activities (at project site) shall be set up comprising Environment Manager having post graduate qualification in Environmental Sciences/ Environment Engineering along with other supporting staff. The Environment Manager Shall report to Project Head directly.
iii. PP shall procure construction material only from those Organizations having all valid legal/statutory clearances/permissions or necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and as amended thereof.

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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.	Shri Rakesh Goyal	Member Representative of Central Electricity Authority (CEA)
7.	Shri Balram Kumar	Member Representative of Central Water Commission (CWC)
8.	Shri Yogendra Pal Singh	Member Secretary

APPROVAL OF THE CHAIRMAN

========== Forwarded message ==========
From: chakrapani govind <chakrapani.govind@gmail.com>
To: "Yogendra Pal Singh"<ypsinghmoef@gmail.com>, "Dr Krishnendu Mondal"<krishnendu.mondal@gov.in>
Date: Thu, 09 Oct 2025 12:48:20 +0530
Subject: Approval of MoM of 40th Meeting
========== Forwarded message ==========

Dear Dr. YP Singh Ji/Dr. Krishnendu Mondal ji,
The draft MoM of 40th Meeting is approved.
Regards,
Govind Chakrapani