

MINUTES OF THE 43rd MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 7TH MARCH, 2023 FROM 10.30 AM – 02:30 PM THROUGH VIRTUAL MODE.

The 43rd meeting of the re-constituted EAC for River Valley & Hydroelectric Projects organized by the Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi, was held on 7th March, 2023 through virtual mode, under the Chairmanship of Dr. K. Gopakumar. The list of Members present in the meeting is at **Annexure**.

Agenda item No.1

Confirmation of the minutes of 42nd EAC meeting held on 23rd February, 2023

Agenda item No. 43.2

Completion of Balance Works of Two Units (2x115 MW) at Lower Sileru Hydro Power House and Improvement of Power Canal Works at Mothugudem (v), Chintoor (m) of Alluri Sita Rama Raju District, Andhra Pradesh by M/s Andhra Pradesh Power Generation Corporation Limited – Environmental Clearance (EC) – reg.

Proposal No. IA/AP/RIV/417724/2023; F. No. J-12011/15/2020- IA.I (R)]

43.2.1: The proposal is for grant of Environmental Clearance (EC) for Completion of Balance Works of Two Units (2x115 MW) At Lower Sileru Hydro Power House and Improvement of Power Canal Works at Mothugudem (v), Chintoor (m) of Alluri Sita Rama Raju District, Andhra Pradesh by M/s Andhra Pradesh Power Generation Corporation Limited

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

- i. Lower Sileru Hydro Electric Project is an operational project located on Sileru river, which is a tributary of Sabari river. The project is located in Alluri Sitarama Raju district in Andhra Pradesh. Lower Sileru project was planned for the installation of 6 units of 115 MW each; out of which 4 units were installed and commissioned in 1978.
- ii. **Project Description:**

The project involves storage of water in the existing Donkarayi reservoir located on Sileru River at Donkarayi Village in the newly formed Alluri Sitarama Raju District, a new district carved out on 4th April, 2022 from Vishakhapatnam and East Godavari Districts. Prior to this, project was located in East Godavari District in Andhra Pradesh. Further, the project comprises of intake on the left bank of Donkarayi reservoir connected with about 15.5 km long power canal to discharge the flow into Forebay of existing Lower Sileru Hydro Electric Project Power House. All these components are already existing.
- iii. **Major project components of existing project:**
 - a) Donkarayi dam, a masonry dam of 71.32 m height with FRL at +316.08 m, and an earthen dam of 37.2 m high on the left bank with intake regulator
 - b) A 15.60 Km long power canal up to Forebay earth dam with discharge capacity of 123.1 cumec
 - c) A Forebay earthen dam of 67.06 m high with FRL at + 283.46 m.
 - d) Head race tunnel of 3.23 km long; horse shoe shaped with discharge capacity of 430.75 cumec for six units;

- e) A surge shaft of 24.4 m dia to take care of instantaneous surge of water. Steel penstocks of 5.5 m dia (2 existing + 1 proposed).
- f) A surface power house of size 144 m x 25 m with 4x115MW commissioned'. A 585 m long tail race channel to let in the water from the machines to the river.

iv. **Balance works of the project as under:**

- a) Installation of 2 units of 115 MW each in the existing power house out of which the following items are already completed.
 - b) Draft tubes with gates are erected for these two units
 - c) Concreting completed up to EL 70M for these two units
 - d) **Installation of a penstock (1 No):** Both underground and Surface excavation already completed for this penstock
- v. APGENCO proposed for completion of balance works of two units (2x115 MW) at Lower Sileru Hydro Electric Project and improvement of power canal works and requested for scoping clearance as per EIA notification, 2006.
- vi. **Fisheries Management Plan:** Lower Sileru project is an operational project located on Sileru River, which is a tributary of Sabari River. Project became operational in 1978 when Donkarayi dam was built as a masonry dam of 71.32 m height with FRL at +316.08 m. Construction of dam has created a reservoir of 28.06 sq. Km having gross storage of 470 MCM and live storage of 380 MCM at FRL. Fishes have been observed in the reservoir, however, no formal fisheries management plan has been implemented. Therefore, as recommended by EAC, a Fisheries Management Plan has been prepared for stocking of Lower Sileru reservoir, upgradation of existing government fish farms, and development of fresh water aquaculture. Fisheries Conservation Plan has been proposed at a total budget outlay of Rs. 49.00 lakh and has been submitted to State Fisheries Department on 22/12/2022 for vetting and implementation.
- vii. **Land requirement and Status:** There is no requirement of land acquisition for construction of various components, including infrastructure facilities as except for installation of two units of 115 MW each and a penstock, all other required infrastructure is already existing.
- viii. **Protected Area:** Project site is not in proximity to any protected area (National Park, Wildlife Sanctuary or Conservation Reserve) as declared under Wildlife Protection Act, 1972. **Nearest protected area is Papikonda National Park which is more than 20 km away from** project site location. Also, there is no wildlife corridor or migratory route of faunal species in the project area.
- ix. **Muck Management Plan:** As the entire power house was excavated earlier and thus there is no scope of muck generation during the installation of 2 units of turbines in the power house.
- x. The costs involved for implementation of **Environmental Management Plan will be about Rs. 1111.50 lakh.**
- xi. **Environmental Base line data:** a) **Conservation Status-** Conservation status is as per IUCN ver. 2021-3, BSI published RED data book of Indian Plants has been consulted. None of the plant species found in the study area falls under any of the IUCN Red List of Threatened Species Version 2021-3. Similarly, no species is listed as RET or endemic by RED data book of Indian Plants. The majority of the species have not been evaluated or assessed yet by IUCN (2021-3). Out of 210 species, 63 species that have been assessed are under the 'Least Concern' category (LC) category by IUCN (2021-3)

b) Plant Density: The density of tree species varied from 290 trees/ha to a maximum of 390 trees/ha and shrub density varied from 3200 plants/ha to 3520 plants/ ha. The density of the herbs varied seasonally. In the study area, total density for herb species was maximum during the monsoon season ranging from 38100 plants/ha to 39800 plants/ha.

c) Diversity: Amongst the trees the diversity Index ranged from low of 2.15 to highest of 2.54 at different sampling locations. For shrubs diversity value varied from lowest 2.54 to highest 2.62.

d) Conservation Status of Faunal Species: Among mammals, no Schedule I species was sighted in the study area. According to WPA (1972) eight species of mammals are Schedule-II, and two species are Schedule III, and three species are listed under Schedule-IV. As per IUCN Redlist of Threatened species 2021-3, One species Smooth-coated Otter (*Lutrogale perspicillata*) is listed under vulnerable category. None of the avifaunal species is under any category of the IUCN Red List of Threatened Species version 2020.3. As per the Wildlife (Protection) Act 1972 all species are Schedule IV and Schedule V.

xii. **Background of Statutory Clearances: Previous EC-** Project was commissioned in 1978, there was no EC requirement. **Scoping clearance** was issued by MoEF&CC on 14th January 2020 for Completion of balance works of two units (2x115 MW) at Lower Sileru Hydro Power House and improvement of power canal works. EIA study carried out as per Standard TOR and in compliance with additional conditions as specified in the TOR covering collection of baseline data for 3 seasons covered during 2020 and 2021.

xiii. EIA report has been prepared in compliance with the TOR and Public Consultation process completed. Public hearing meeting was held on 27/07/2022 at Mothugudem, Alluri Sita Rama Raju District, Andhra Pradesh (near project site).

43.2.3: The proposal was earlier considered by the EAC in its 36th meeting held on 15.11.2022. Wherein, the EAC after detailed deliberation observed that the information submitted by PP lacks certain information which are required for further consideration of the project. EAC after detailed deliberation as presented during the meeting expressed that following are the deficiencies which required for further consideration of the project. It was desired that PP may submit the revised EIA/EMP report with below mentioned information.

a) Impact on the fish habitat downstream of the tailrace discharge need to be assessed by the way of hydro-dynamic modelling simulating the present scenario when 4 turbines are running as well as when 6 turbines would be running after expansion to carry out the damage assessment due to increase in water afflux and altered flow regime.

Reply by PP: i) The impact has been assessed by the way of hydro-dynamic modelling simulating the present scenario when 4 turbines are running as well as when 6 turbines would be running after expansion to carry out the damage assessment due to increase in water afflux and altered flow regime ii) A hydro-dynamic modelling study has been carried out using one dimensional hydraulic flow modelling on Mike 11, a river model of Danish Hydraulic Institute (DHI) to model flow, water levels, flow velocity and flow width. **Average increase in depth, flow width and velocity is 35.20 cm (22%), 12.38 m (7.7%) and 0.23 m/sec (15.75%) respectively only.**

b) Presence of Schedule I faunal species in the study area need to be re-assessed with the help of forest and wildlife department and a detailed site-specific wildlife conservation plan for Schedule –I species need to be prepared and submitted to Wild Life department for their approval and implementation.

Reply by PP: i) Presence of Schedule I faunal species in the study area was re-assessed with the help of forest and wildlife department and a detailed site-specific wildlife conservation plan for Schedule –I species has been prepared and submitted to Wild Life department for their approval and implementation. ii) For the preparation of a checklist of fauna in the study area, forest department was consulted and the Forest Working Plan of Kakinada and Chintur Forest Divisions were referred. A list of 21 species of mammals with their conservation status reportedly found in the study area was compiled. iii) As per Wildlife (Protection) Act 1972, Common Leopard (*Panthera pardus*), Sloth Bear (*Melursus ursinus*), Indian Rock Python (*Python molurus*) and Bengal Monitor Lizard (*Varanus bengalensis*) are the faunal species listed as a Schedule I species. iv) Specific conservation measures have been proposed for the identified 4 schedule I species in consultation with forest department with a total budget of Rs. 68.00 lakhs. The plan was submitted for review, approval and implementation to the Office of Principal Chief Conservator of Forests & Head of Forest Force, AP Forest Department on 23/12/2022 and regular follow up being done. PCCF has acknowledged the receipt and forwarded the plan to Chief Conservator of Forests, Rajahmundry for review and implementation.

- c) Catchment Area Treatment (CAT) Plan needs to be prepared for the directly draining catchment of Donkarayi dam to identify vulnerable areas requiring treatment and shall contain biological as well engineering measures with budget and schedule for implementation.

Reply by PP: i) Catchment Area Treatment (CAT) plan has been prepared for the directly draining catchment of Donkarayi dam to identify vulnerable areas requiring treatment and accordingly biological as well engineering measures with budget and schedule for implementation has been proposed. Study area is defined as catchment area of Sileru river from the dam site of the lower Sileru Project (Donkarayi Dam) to the dam site of the Upper Sileru Project. The total free draining catchment area thus delineated is 690.68 sq km. area under severe and very severe erosion intensity category in all the 11 Sub-watersheds will be taken up for treatment, which comes out to be 3510 ha. Out of the total 3510 ha to be treated, it is proposed to treat 461 ha by biological measures, 457 ha by Sloping Agriculture Land Technology and the rest 2592 ha by engineering measures. The period for implementing Catchment Area Treatment Plan interventions including maintenance has been taken as 10 years. The estimated cost of implementation of Catchment Area Treatment Plan as defined above is Rs. 485.90 lakh. Year wise physical and financial targets for free draining catchment area, Andhra Pradesh and Odisha has also been prepared.

- d) An assessment of siltation aspect in Donkarayi reservoir over project operation phase of the existing project along with study of reservoir periphery to be carried out to identify land slips etc which will help in ascertaining need of reservoir rim treatment, accordingly a reservoir rim treatment plan to be prepared.

Reply by PP: Siltation aspect studied based upon following reports:

- i) Report on hydrographic surveys of Donkarayi Reservoir and
- ii) Sediment deposition worked out by WAPCOS as part of DPR based on Empirical Area Reduction method.

Annual sediment inflow volume is about 0.25% of the reservoir volume and in last 24 years only about 5.11% volume of reservoir got silted up. Therefore, even with

same rate of sediment yield, there will not be significant reduction in capacity of reservoir during course of remaining life of Donkarayi reservoir. Further, a study of reservoir periphery has been carried out with the help of Google Earth images to identify land slips etc. followed by physical traversing the reservoir periphery. It has been observed that during more than four decades of project operation, the area has stabilized and no landslips could be observed or marked along the reservoir periphery. Therefore, **reservoir rim treatment requirement has not been proposed.**

- e) A fisheries management plan needs to be prepared and implemented by project proponent through state fisheries department. Project proponent should undertake a study through CIFRI/reputed government institute to assess adequacy and effectiveness of the fish conservation plan and prepare and implement the plan as per the recommendation of the institute.

Reply by PP: Donkarayi dam reservoir, created in 1978 has an area of 28.06 sq. Km having gross storage of 470 MCM and live storage of 380 MCM at FRL. Fishes have been observed in the reservoir, however, no formal fisheries management plan has been implemented. A Fisheries Management Plan has been prepared for stocking of Lower Sileru reservoir, upgradation of existing government fish farms, and development of fresh water aquaculture. In addition, a study is proposed through CIFRI to assess adequacy and effectiveness of the fish conservation plan and prepare and implement the plan. **APGENCO is in contact with CIFRI to initiate this study.**

- f) Statement on the commitments (activity-wise) made during public hearing to facilitate the discussion on the CER in compliance of the Ministry's OM F.No.22- 65/2017- IA.III dated 30th September, 2020 shall be submitted. Point-wise time bound action plan needs to be prepared for implementation of queries raised and commitments made during public consultation process with physical targets and financial provisions.

Reply by PP: Public Hearing meeting was conducted on 27.07.2022 at Mothugudem(V), Chintoor(M) of Alluri Sita Rama Raju District, Andhra Pradesh". Point-wise time bound action plan has been prepared for implementation of queries raised and commitments made during public consultation process with physical targets and financial provisions.

XIII. In compliance of above observation, PP has been prepared EIA report updated including above observation ensuring full compliance to TOR; and updated EIA report submitted for appraisal.

XIV. Additional ToR, Complied by PP:

- a) **Additional TOR # 2:** Three season (Pre-monsoon, Monsoon and Winter season) baseline data of all the environmental attributes including biological environment as mentioned in the standard ToR shall be collected for preparation of EIA/EMP report.

Reply by PP: The field surveys for the collection of primary data commenced from May 2020 and were completed in January 2021 covering pre- monsoon/summer, monsoon, and winter seasons. Sampling was carried out during May 2020 (pre-monsoon), July 2020 (Monsoon) and January 2021 (Winter). Physico-chemical and biological environmental components were covered as per standard TOR.

- b) **Additional TOR # 3:** Requisite studies for the E-flows shall also be undertaken.

Reply by PP: Donakarayi reservoir is under operation since 1978 and there was no environment flow release regulation at that time. Reservoir inflow data was studied for

a period of 1999-2000 to 2017-18. Storage capacity of Donkarayi reservoir is about 368 MCM; surplus water overflows to Sileru river downstream of the dam. Present generation is for 8hrs/ day for running of 4 Units; which will change to 5 hrs/day for running of 6 units by utilizing the same quantum (while 4 units are working) of water. Proposed environment releases have been worked out based on the standard TOR requirement i.e. 20% release in lean season; 30% in monsoon season and 25% in remaining months based on 90% dependable year discharge Intermediate catchment of about 300 sq. km (downstream of Donkarayi reservoir upto tailrace outlet of lower Sileru powerhouse) contribute about 4-5 cumec on an average in the Sileru river.

c) **Additional TOR no- 10: Pre-DPR chapters viz. Hydrology, Layout Map and Power Potential studies duly approved by CWC shall be submitted.**

Reply: APGENCO has finalized the work for completion of balance works of two units (2x115 MW) with an estimated cost of Rs. 510 crore for which Government of Andhra Pradesh has already accorded administrative sanction. BGM lining is not proposed. As per clause no. 1.2.1(ii) of CEA guidelines January 2015, the concurrence from CEA/CWC needs to be taken for the hydropower projects of Rs. 1000 crore and above.

d) All other Additional TOR complied by PP and deliberated in EAC meeting.

43.2.4: The EAC during deliberations noted the following:

The proposal is for grant of Environmental Clearance (EC) for Completion of Balance Works of Two Units (2x115 MW) At Lower Sileru Hydro Power House and Improvement of Power Canal Works at Mothugudem (v), Chintoor (m) of Alluri Sita Rama Raju District, Andhra Pradesh by M/s **Andhra Pradesh Power Generation Corporation (APGENCO)**.

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

Project was commissioned in 1978, therefore there was no EC requirement for the project. Scoping clearance was issued by MoEF&CC on 14th January 2020 for Completion of balance works of two units (2x115 MW) at Lower Sileru Hydro Power House and improvement of power canal works. EIA study carried out as per Standard TOR and in compliance with additional conditions as specified in the TOR covering collection of baseline data for 3 seasons covered during 2020 and 2021. EIA report has been prepared in compliance with the TOR and Public Consultation process completed. Public hearing meeting was held on 27/07/2022 at Mothugudem, Alluri Sita Rama Raju District, Andhra Pradesh (near project site).

43.2.5: The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** for grant of Environmental Clearance (EC) for Completion of Balance Works of Two Units (2x115 MW) at Lower Sileru Hydro Power House and Improvement of Power Canal Works at Mothugudem (v), Chintoor (m) of Alluri Sita Rama Raju District, Andhra Pradesh by M/s APGENCO under the provisions of EIA Notification, 2006, as amended along with the following additional conditions:

[A] Environmental Management and Biodiversity Conservation:

1. Biodiversity Management Committee (BMC) shall be constituted for Monitoring and Evaluation of Biodiversity Conservation and Wildlife Management Plan as Implemented by Forest Department.

2. Create Environment Management Cell in the project consisting environmental officers having post graduate degree in environmental sciences/Environmental Engineering to monitor implementation of Environment Management Plan in the project.
3. EMP Budget shall be revised after proper estimation as per quantity of items required for implementation of EMP.

[B] Disaster Management

4. Necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and subsequent amendments thereof.

[C] Socio economic

5. The existing Hospital being managed by the project authorities shall be upgraded to multispecialty hospital with 25 beds facilities with Male and Female doctors.
6. Construction of concrete roads in project affected villages as proposed be maintained throughout project life.
7. The budget for plantation and other EMP activities should be revised as per existing rate.
8. Local people shall be given top priority to employment and skilled training conducted if required.
9. R.O drinking water facilities provided to villagers @ 10 households/Tap water.
10. Under CER activities, preference should be given to strengthen the basic amenities in the project affected villages like maintaining drinking water supply, providing health care facilities, etc.
11. Preference to be given to the local villagers as per the requirements and suitability, in the job/ other opportunities in the project, etc. Measures to be taken to develop skills of the local villagers particularly with respect to the trades related to construction works such as electrician, welder, fitter, etc.

Agenda item No. 43.3

Paidipalem North Pumped Storage Project (1000 MW) in an area of 282.61 ha located at village Paidipalem, District YSR (Andhra Pradesh) by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd (NREDCAP)– Terms of Reference (TOR) - reg.

[Proposal No. IA/AP/RIV/416654/2023; F. No. J-12011/06/2023-IA.I (R)]

43.3.1: The proposal is for grant of Terms of Reference (TOR) Paidipalem North Pumped Storage Project (1000 MW) in an area of 282.61 ha located at village Paidipalem, District YSR (Andhra Pradesh) by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd (NREDCAP).

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

- i. The proposed scheme involves construction of Rock fill dam in upper reservoir with minimum and maximum height of 7.74m and of 27.84m respectively and in lower reservoir with minimum and maximum height of 3.0m and of 37.85m respectively. 5 nos. of circular shaped concrete head race tunnels with 5.8m dia. and 50.0m length. 5 nos. each of 1040.0 m and 4.2m dia. circular steel lined Penstock will feed 5 units of 200 MW. Five vertical reversible fixed speed Francis type units composed each of

a generator/motor and a pump/turbine having generating/pumping capacity of 200MW / 220MW respectively. As such, the proposed project will generate 1000 MW by utilizing a design discharge of 506.27 cumec and rated head of 222.71 m.

- ii. Project involves creation of upper and lower reservoir, water conductor system powerhouse and appurtenant facilities
- iii. It's proposed to utilise 10.46 MCM of water by re-circulation on non-consumptive basis.
- iv. One time filling (26.38 MCM, including that for Paidipalem East, as they have common lower reservoir) will be sourced from existing Paidipalem Balancing Reservoir, (gross storage 170 MCM), constructed under Gandikota Lift Irrigation scheme.
- v. **Land Requirement:** Total land required for construction of various components including infrastructure facilities, approach roads and muck disposal area is estimated to be around 282.61 ha, involving 134.37 ha of forest land and 148.24 ha of revenue land.
- vi. **Alternative Studies for Site Selection:** Three alternate layouts were considered with the new lower reservoir. Option - II has been finalised for the proposed Paidipalem North 1000 MW Pumped Storage Project.
- vii. **Protected Area in the Vicinity:** Nearest Protected Area to the proposed project is Rajiv Gandhi National Park, which is at a distance of around 35.40 km. ESZ boundary (500 m all around) was notified vide MoEF&CC's notification no. S.O. 1563(E) dated 15 th May, 2017.
- viii. **Water Source and Availability:** The project will construct upper reservoir with almost negligible catchment and lower reservoir (common with Paidipalem East) with 6.5 sq. Km of catchment. One time water requirement of 26.38 MCM will be met from existing Paidipalem Balancing Reservoir, (170 MCM), constructed under Gandikota Lift Irrigation scheme. It also has 20 sq. Km of its own catchment.
- ix. **Alternative Studies for Lower Reservoir:** Options were evaluated to consider the existing Paidipalem balancing reservoir as a lower reservoir. It has adequate capacity to serve as lower reservoir for both the projects and head available was giving required IC. However, to have reliability and considering utilisation of water from Paidipalem balancing reservoir for future needs of irrigation and drinking purposes in the region, it is decided to construct a separate lower reservoir.
- x. **Alternate Alignments for Water Conduit System:** Three alternate layouts were considered with the new lower reservoir. The comparison of various parameters for the alternate options were made. Option - II has been finalised for the proposed Paidipalem North 1000 MW Pumped Storage Project.
- xi. **Project Cost:** INR 4101.27 Crores, excluding FC & IDC
- xii. **Salient Features of Proposed Paidipalem North Pumped Storage Project (1000 MW)**

Sr. No.	Parameters	Description
1.		Location
	a.	Country
		India
	b.	State
		Andhra Pradesh
	c.	District
		YSR District (formerly known as Kadapa
	d.	Village
		Paidipalem
	e.	Mandal
		Simhadiripuram
	f.	Water Source
		Paidipalem Balancing Reservoir
	g.	Lower & Upper Reservoirs
		New Reservoirs
	h.	Upper Reservoir Location
		14°43'54.44"N, 78°11'10.05"E
	i.	Lower Reservoir Location
		14°42'34.16"N, 78°12'42.00"E

2.	Access to the Project		
	a.	Road	8.0 km from NH 67
	b.	Railhead (with unloading facility)	Mangapatnam – 12.0 km
	c.	Airport	Domestic airport at Kadapa – 70 km
	d.	Port	Krishnapatnam – 220 km
3.	Project		
	a.	Type	Pumped Storage Project
	b.	Installed Capacity	1000 MW (5 x 200 MW)
	c.	Peak Operating Hours	5 hours 54 min
	d.	Pumping Hours	6 hours 29 min
4.	Catchment Area		
	a.	Upper Reservoir	Nil
	b.	Lower Reservoir	6.5 sq km
	c.	Average Annual Rainfall	644 mm
5.	Civil Structure		
5.1	Upper Reservoir		New Bund Type
	a.	FRL	+540.00 m
	b.	MDDL	+518.00 m
	c.	Surface area at FRL	54.80 ha
	d.	Surface area at MDDL	39.6 ha
	e.	Gross Storage Capacity	11.63 MCM (0.41 TMC)
	f.	Live Storage Capacity	10.46 MCM (0.37 TMC)
	g.	Dead Storage at MDDL	1.17 MCM
5.2	Lower Reservoir		New Bund Type
	a.	Type of Bund	Rockfill Dam
	b.	FRL	+308.00 m
	c.	MDDL	+280.00 m
	d.	Reservoir Surface area at FRL	214.0 ha
	e.	Live Storage @ 308.0 m	25.55 MCM (0.9 TMC)
	f.	Dead Storage @ 280.0 m	0.83 MCM (0.03 TMC)
5.3	Upper Reservoir Dam		
	a.	Type of Dam	Rockfill Dam
	b.	Max Height of Bund	27.84 m
	c.	Min. Height of Bund	7.74 m
	d.	Length of Bund	3.37 km
	e.	Top Width of the Dam	10.0 m
5.4	Lower Reservoir Dam		
	a.	Max Height of Bund	37.85 m
	b.	Min. Height of Bund	3.00 m
	c.	Length of Bund	1.35 km
	d.	Top Width of the Dam	10.0 m
5.5	Intake Structure		
	a.	Type	Vertical
	b.	No. of Intakes	05
5.6	Head Race Tunnel		Circular Tunnel
	a.	Size	5.8 m Diameter, Concrete
	b.	Length	50.00 m
	c.	No of Tunnels	05
5.7	Penstocks		
	a.	Diameter	4.2 m
	b.	Length	1040.0 m
	c.	No of Shafts	05

	d.	Type	ASTM A517 Grade F Steel Pipes of 32 to 36 mm thick mounted on Pedestals
	e.	Penstocks	Tunnel
	f.	Diameter	4.2 m
	g.	Thickness	36 mm
	h.	Type of Lining	ASTM A517 Grade F Steel plates
	i.	Length	540.00 m
	j.	No of Tunnels	05
5.8		Tail Race Pool	
	a.	Type	Open Cut up to NSL
	b.	Length	150.00 m
	c.	Width at Draft Tube	104.00 m
	d.	Width at Tail Race Channel	15.00 m
	e.	Tail Race Channel	Open Cut
	f.	Length	1575.00 m
	g.	Width	15.00 m
6.		Powerhouse	
	a.	Latitude	14°43'12.75"N
	b.	Longitude	78°11'55.19"E
	a.	Type	Vertical, Reversible Fixed Speed Francis
	b.	Capacity of Turbine	200.000 MW
	c.	Nos	05
	d.	Max Head as Turbine	247.82 m
	e.	Rated Turbine Head	222.71 m
	f.	Min Head as Turbine	205.37 m
	g.	Turbine output at Rated Head	200.00 MW
	h.	Turbine output at 10% overhead	220.00 MW
	i.	Maximum head as Pump	245.65 m
	j.	Rated Pump Head	233.43 m
	k.	Minimum Head as Pump	220.71 m
	l.	Maximum Discharge of Turbine at Rated Head	506.27 cumecs
	m.	Maximum Discharge of Pump at	448.06 cumecs
	n.	Specific speed at net pump head	36
	o.	Specific Speed at net turbine head	140
		Motor - Generator	
	a.	Type	3 Phase AC Synchronous Generator – Motor
	b.	No of Units	05
	c.	Rated Capacity	200 MW
	d.	Rated terminal Voltage between	18 kV
	e.	Rated Frequency	50 Hz
	f.	Rated Speed	250 rpm
	g.	Overload Capacity	10%
7.		Transmission Lines	
	a.	Capacity Voltage Level	400 kV
	b.	Line - I (To RTPP SS)	35.00 km
	c.	Line – II (To Talaricheruvu SS)	45.00 km

43.3.3: The EAC during deliberations noted the following: The proposal is for grant of Terms of Reference (TOR) Paidipalem North Pumped Storage Project (1000 MW) in an area of 282.61 ha located at village Paidipalem, District YSR (Andhra Pradesh) by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd (NREDCAP).

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

The EAC noted that the project involves creation of upper and lower reservoir, water conductor system powerhouse and appurtenant facilities. It's proposed to utilise 10.46 MCM of water by re-circulation on non-consumptive basis. One time filling (26.38 MCM, including that for Paidipalem East, as they have common lower reservoir) will be sourced from existing Paidipalem Balancing Reservoir, (gross storage 170 MCM), constructed under Gandikota Lift Irrigation scheme. Total land required for construction of various components including infrastructure facilities, approach roads and muck disposal area is estimated to be around 282.61 ha, involving 134.37 ha of forest land and 148.24 ha of revenue land. The proposed PSP is located around 35 km (West) from the boundary of Rajiv Gandhi National Park.

43.3.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** for grant of Standard ToR for conducting EIA study for Paidipalem North Pumped Storage Project (1000 MW) in an area of 282.61 ha located at village Paidipalem, District YSR (Andhra Pradesh) by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd (NREDCAP under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:).

[A] Environmental Management and Biodiversity Conservation:

- i. Cumulative Impact of project on carrying capacity and sustainability of Reservoir/ nalahs of catchment area / due to tapping of water for filling reservoir.
- ii. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons.
- iii. A study shall be carried out on impact of project activity on the aquatic and terrestrial ecosystem, within project area classifying the impact zones (highly impact/low impact zone) based on seasonal variations and covering the aspects related to impacts on aquatic ecosystem/ primary productivity due to quantity of water to be lifted for power generation and thermal stratification. Accordingly, Environment Management plan shall be prepared.
- iv. Sampling locations be located to cover villages situated near the reservoir and around boundary of forest area for collection of baseline data and data to be incorporated in EIA/ EMP report.
- v. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir.
- vi. Source of construction material and its distance from the project site along with detailed transportation plan for construction material in view of the project site location in Western Ghats be submitted.

- vii. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report.
- viii. Certificate and certified map from Chief Wildlife Warden shall be submitted mentioning that project boundary is located outside the Eco Sensitive Zone (ESZ) and no Wildlife Sanctuary falls within 10 km of Project site.
- ix. A detailed wildlife conservation plan for Schedule –I species be prepared duly approved by the Chief Wild Life Warden be submitted.
- x. In case any Wildlife Corridor is located within 10 km radius of the project site a detailed study shall be conducted to assess the impact of project on safe movement of wild animals.
- xi. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.
- xii. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Govt. institutions/ Indian Council of Agriculture Research (ICAR)and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report.
- xiii. MoU for water uses for the project shall be signed and approved by concerned authority.
- xiv. Environmental matrix during construction and operational phase needs to be submitted.
- xv. Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used shall be mentioned in the EIA report.
- xvi. Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic species found in the State.
- xvii. Details of Flora and Fauna reported in submergence area, Nos. of tree along with their density and nomenclature of the tree species required to be felled for reservoir creation and other project component.
- xviii. Project impact on avi-fauna shall be studied and incorporated in EIA/ EMP report.
- xix. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.
- xx. Stage-I Forest Clearance shall be obtained.
- xxi. Study of impacts of project on water sources i.e. Paidipalem balancing reservoir.

[B] Socio-economic Study

- xxii. Declaration by the project proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with any State in the project.
- xxiii. All the tasks including conducting public hearing shall be done as per the provisions of EIA Notification, 2006 and as amended from time to time. Public hearing issues raised and compliance of the same shall be incorporated in the EIA/ EMP report in the relevant chapter.
- xxiv. Statement on the commitments (activity-wise) made during public hearing to facilitate the discussion on the CER in compliance of the Ministry's OM F.No.22-65/2017- IA.III dated 30th September, 2020 shall be submitted.
- xxv. Tentative no. of project affected families shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared.

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

[C] Muck Management/ Disaster Management

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

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

xxix. Techno-economic viability of the project must be recommended from CEA/ CWC

[D] Miscellaneous.

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

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

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

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

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

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

Agenda item 43.4:

Paidipalem East Pumped Storage Project (1200 MW) in an area of 279.84 ha located at village Paidipalem, District YSR (Andhra Pradesh) by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd (NREDCAP) - Terms of Reference (TOR) - reg.

[Proposal No. IA/AP/RIV/405885/2023; F. No. J-12011/07/2023-IA.I (R)]

43.4.1: The proposal is for grant of Terms of Reference (ToR) for Paidipalem East Pumped Storage Project (1200 MW) in an area of 279.84 ha located at village Paidipalem, District YSR (Andhra Pradesh) by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd (NREDCAP)

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

- i. The proposed project is a closed loop Pumped Storage Power project at Paidipalem village, YSR District in Andhra Pradesh.
- ii. The total capacity of proposed Paidipalem-East PSP is 1200 MW and envisages non consumptive utilisation of 12.08 MCM of water from Paidipalem balancing Reservoir by re-circulation.
- iii. The proposed project will have new lower reservoir at latitude is 14°42'34.16"N and longitude 78°12'42"E and upper reservoir at latitude 14°41'28.07"N and longitude 78°13'31.04"E.

- iv. The gross storage capacity of upper reservoir is 13.0 MCM, the live storage capacity is 12.08 MCM and the dead storage capacity at MDDL is 0.92 MCM and for Lower reservoir live storage capacity at FRL is 25.55 MCM and dead storage capacity at MDDL is 0.83 MCM.
- v. The project, Paidipalem-East PSP proposed utilize the water from the existing Paidipalem balancing reservoir which has a gross storage capacity of 6.00 TMC (170 MCM). Water from Paidipalem balancing reservoir will be pumped and stored in the lower reservoir which will be used for power generation.
- vi. The proposed scheme involves construction of Rock fill dam in upper reservoir with minimum and maximum height of 22.15m and of 33.78m respectively and in lower reservoir with minimum and maximum height of 3.0m and of 37.85m respectively. 6 nos. of circular shaped concrete head race tunnels with 5.5m dia. and 50.0m length. 6 nos. each of 1410.0m long and 4.0m dia. circular steel lined Penstock will feed 6 units of 200 MW. Six vertical reversible fixed speed francis type units composed each of a generator/motor and a pump/turbine having generating/pumping capacity of 200MW / 220MW respectively. As such, the proposed project will generate 1200 MW by utilizing a design discharge of 554.13 Cumec and rated head of 248.29 m.
- vii. **Land Requirement:** The total land required for the construction of various components including infrastructure facilities, approach roads and muck disposal area is estimated to be around **279.84** ha, involving 102.72 ha of forest land and 177.12 ha of revenue land.
- viii. **Environmental Sensitive area exists within 10 Km from the project/activity boundary:** The proposed PSP is located around 35 km (West) from the boundary of Rajiv Gandhi National Park.
- ix. **Project Cost:** It is proposed to complete the construction of the project within a period of four years at an estimated cost of INR 4429.36 crore, excluding FC & IDC
- x. **Justification of the Project:** The proposed PSP at Paidipalem East meets all the aspects for setting up a techno commercially feasible project. Water will be drawn from the existing Paidipalem Balancing Reservoir. Available head of +277.93 M, which is on the higher side, resulted in a 1200 MW project with 6 hr: 14 min of generating hours, availability of material and 400KV transmission network making the proposed Paidipalem East PSP a techno-commercial feasibility project. Detailed study of all parameters will be taken up during DPR preparation for precise design and costing.
- xi. **Alternative Studies:** To maintain the minimum safe distance from the edges and to avoid sliding of ridge slopes, a minimum distance of 40 m from the outer bottom edge is maintained. Hence, it is decided to consider Option 2. However, the slope stability analysis will be carried out at the DPR Stage. If necessary, we will re-examine the upper reservoir capacity and installed capacity of PSP.

43.4.3: The EAC during deliberations noted the following:

The proposal is for grant of Terms of Reference (TOR) for Paidipalem East Pumped Storage Project (1200 MW) in an area of 279.84 ha located at village Paidipalem, District YSR (Andhra Pradesh) by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd (NREDCAP).

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

The EAC noted that the total capacity of proposed Paidipalem-East PSP is 1200 MW and envisages non consumptive utilisation of 12.08 MCM of water from Paidipalem balancing Reservoir by re-circulation. The total land required for the construction of various components including infrastructure facilities, approach roads and muck disposal area is estimated to be around 279.84 ha, involving 102.72 ha of forest land and 177.12 ha of revenue land. The proposed PSP is located around 35 km (West) from the boundary of Rajiv Gandhi National Park.

43.4.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting **recommended** for grant of Standard ToR for conducting EIA study for Paidipalem East Pumped Storage Project (1200 MW) in an area of 279.84 ha located at village Paidipalem, District YSR (Andhra Pradesh) by M/s New and Renewable Energy Development Corporation of Andhra Pradesh Ltd (NREDCAP).under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:).

[A] Environmental Management and Biodiversity Conservation:

- i. Cumulative Impact of project on carrying capacity and sustainability of Reservoir/ nalahs of catchment area / due to tapping of water for filling reservoir.
- ii. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons.
- iii. A study shall be carried out on impact of project activity on the aquatic and terrestrial ecosystem, within project area classifying the impact zones (highly impact/low impact zone) based on seasonal variations and covering the aspects related to impacts on aquatic ecosystem/ primary productivity due to quantity of water to be lifted for power generation and thermal stratification. Accordingly, Environment Management plan shall be prepared.
- iv. Sampling locations be located to cover villages situated near the reservoir and around boundary of forest area for collection of baseline data and data to be incorporated in EIA/ EMP report.
- v. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir.
- vi. Source of construction material and its distance from the project site along with detailed transportation plan for construction material in view of the project site location in Western Ghats be submitted.
- vii. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report.
- viii. Certificate and certified map from Chief Wildlife Warden shall be submitted mentioning that project boundary is located outside the Eco Sensitive Zone (ESZ) and no Wildlife Sanctuary falls within 10 km of Project site.
- ix. A detailed wildlife conservation plan for Schedule –I species be prepared duly approved by the Chief Wild Life Warden be submitted.

- x. In case any Wildlife Corridor is located within 10 km radius of the project site a detailed study shall be conducted to assess the impact of project on safe movement of wild animals.
- xi. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.
- xii. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Govt. institutions/ Indian Council of Agriculture Research (ICAR) and accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report.
- xiii. MoU for water uses for the project shall be signed and approved by concerned authority.
- xiv. Environmental matrix during construction and operational phase needs to be submitted.
- xv. Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used shall be mentioned in the EIA report.
- xvi. Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic species found in the State.
- xvii. Details of Flora and Fauna reported in submergence area, Nos. of tree along with their density and nomenclature of the tree species required to be felled for reservoir creation and other project component.
- xviii. Project impact on avi-fauna shall be studied and incorporated in EIA/ EMP report.
- xix. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.
- xx. Stage-I Forest Clearance shall be obtained.
- xxi. Study of impacts of project on water sources i.e. Paidipalem balancing reservoir

[B] Socio-economic Study

- xxii. Declaration by the project proponent by way of affidavit that "No" Inter-state issue/ policy issue is involved with any State in the project.
- xxiii. All the tasks including conducting public hearing shall be done as per the provisions of EIA Notification, 2006 and as amended from time to time. Public hearing issues raised and compliance of the same shall be incorporated in the EIA/ EMP report in the relevant chapter.
- xxiv. Statement on the commitments (activity-wise) made during public hearing to facilitate the discussion on the CER in compliance of the Ministry's OM F.No.22-65/2017- IA.III dated 30th September, 2020 shall be submitted.
- xxv. Tentative no. of project affected families shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared.
- xxvi. Details of settlement in 10 km area shall be submitted.

[C] Muck Management/ Disaster Management

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

- xxviii. Details of Muck Management plan prepared along with estimated cost incorporated in EIA/ EMP report.
- xxix. Techno-economic viability of the project must be recommended from CEA/ CWC

[D] Miscellaneous.

- xxx. Pre-DPR Chapters viz. Layout Map and Power Potential Studies duly approved by CWC I CEA shall be submitted.
- xxxi. Undertaking need to submitted on affidavit that regarding no activities has been yet on the project site and water allocated to this scheme shall not be diverted to other purpose.
- xxxii. Both capital and recurring expenditure under EMP shall be submitted.
- xxxiii. The photograph should bear the date, time, latitude & longitude of the monitoring station/ sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyse the samples.
- xxxiv. Arial view video of project site shall be recorded and to be submitted.
- xxxv. Detailed plan to restore wider roads and convert them into narrow upto 10m after construction of the project.

Agenda Item No. 43.5

Kodayar Pumped Storage Hydro Electric Project of capacity 1500 MW located at Village Pechiparai, Taluk Thiruvattar, District Kanyakumari (Tamil Nadu) by M/s Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO)- Terms of Reference (TOR) - reg.

[Proposal No. IA/TN/RIV/416257/2023; F. No. J-12011/08/2023-IA.I (R)]

43.5.1: The proposal is for grant of terms of reference to the project for Kodayar Pumped Storage Hydro Electric Project of capacity 1500 MW in an area of 40.72 ha located at Village Pechiparai, Taluk Thiruvattar, District Kanyakumari (Tamil Nadu) by M/s Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO).

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

- i. The proposal is for grant of terms of reference to the project for Kodayar Pumped Storage Hydro Electric Project of capacity 1500 MW in an area of 40.72 ha located at Village Pechiparai, Taluk Thiruvattar, District Kanyakumari (Tamil Nadu) by M/s Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO).
- ii. Kodayar Pumped Storage Hydro Electric Project is in Kanyakumari district of Tamil Nadu which has been envisaged by utilizing the existing TANGEDCO's Kodayar Dam I as Upper Reservoir which is Masonry Gravity Dam with storage capacity of 98.66 MCM at FRL of 1325.90 m and existing TNPWD's Pechiparai Dam as Lower Reservoir is a Gravity Dam with storage capacity of 150.22 MCM at FRL of 92.07 m. Project's both reservoirs are the existing one.
- iii. At present a Conventional Powerhouse i.e., Kodayar Hydro Electric System with an installed capacity of 1 x 60 MW (PH - I) is functioning by utilizing the water from Kodayar Dam I. The discharge of PH - I is stored in Kodayar Dam II. This Kodayar

- Dam II forms the forebay, utilized for generation in Kodayar PH - II (1 x 40 MW) and then the discharge goes to Pechiparai Reservoir.
- iv. The Kodayar reservoir (Existing Upper) has storage capacity of 98.66 MCM at FRL of 1325.90 m. and the Pechiparai reservoir (Existing Lower) has storage capacity of 150.22 MCM at FRL of 92.07 m.
 - v. Proposed Kodayar PSHEP has an installed capacity of 1500 MW (6 x 250 MW) with six units of Pelton Turbine Generating Units of 250 MW each. Rated Net Head for the project is about 1188.04 m & Rated Design Discharge (total) is about 143.53 cumec with an Annual Energy Generation of 3120.75 MU.
 - vi. The salient features of the project are as under: -

Project details:

Name of the Proposal	Kodayar Pumped Storage Hydro Electric Project (1500 MW), Kanyakumari District, Tamil Nadu
Location (Including coordinates)	Kodayar Dam I (Existing) Reservoir Latitude - 08° 30' 17.10" N Longitude - 77° 18' 40.23" E Pechiparai Dam (Existing) Reservoir Latitude - 08° 27' 26.55" N Longitude - 77° 18' 51.06" E
Inter-state issue involved	No inter-state issues.
Seismic zone	Zone III

Category details:

Category of the project	Category "A"
Provisions	Nil
Capacity/Cultural command area (CCA)	1500 MW
Attracts the General Conditions (Yes/No)	Yes
Additional information (if any)	Nil

Electricity generation capacity:

Powerhouse Installed Capacity	1500 MW
Generation of Electricity Annually	3120.75 MU
No. of Units	6 x 250 MW
Additional information (if any)	-

ToR Details:

Cost of Project	Rs. 10838.37 Crore
Total area of Project	40.727 Ha
Height of Dam from River bed (EL)	Kodayar Dam I (Existing) as Upper Reservoir (TANGEDCO) - 87.78 m Pechiparai Dam (Existing) as Lower Reservoir (TNPWD) – 32.31 m
Length of Tunnel/Channel	10.95 km (10951 m)

Details of Submergence area	No submergence area as both the reservoirs are existing
Types of Waste and quantity of generation during construction/ Operation	Muck from excavation, solid waste from labor colony and construction waste
E-Flows for the Project	NA
Is Projects earlier studies in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then a) E-flow with TOR /Recommendation by EAC as per CIA & CC study of River Basin. b) If not the E-Flows maintain criteria for sustaining river ecosystem.	No

Muck Management Details:

No. of proposed disposal area/ (type of land- (Forest/Pvt. land)	1 no. (Forest Land)
Muck Management Plan	Will be Provided in EIA/EMP report. Muck would be disposed of at designated areas in a controlled manner to protect the environment.
Monitoring mechanism for Muck Disposal	Will be Provided in EIA/EMP report

Land Area Breakup:

Private Land	Nil
Government land/Forest Land	40.727 Ha (Forest Land for project components)
Submergence area/Reservoir area	Nil as both the reservoirs are existing
Land required for project components	40.727 Ha
Additional information (if any)	Right of Way for Transmission line is required, which is estimated as 124.20 Ha

Presence of Environmentally Sensitive areas in the study area

Forest Land/ Protected Area/ Environmental Sensitivity Zone		Details of Certificate/letter/ Remarks
Reserve Forest/Protected Forest Land	--	Yet to apply for Wildlife Clearance
National Park	--	
Wildlife Sanctuary	Kanyakumari Wildlife Sanctuary (KWLS) and Kalakkad Mundhanthurai Tiger Reserve (KMTR)	

Court case details:

Court Case	Nil
Additional information (if any)	Nil

Affidavit/Undertaking details:

Affidavit/Undertaking	Enclosed
Additional information (if any)	Nil

Previous EC compliance and necessary approvals:

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

43.5.3: The EAC during deliberations noted the following:

The EAC in the present meeting (43rd meeting) deliberated on the information submitted and as presented in the meeting by the PP and observed that the proposal is for grant of Terms of Reference to the project for conducting EIA study for Kodayar Pumped Storage Hydro Electric Project of capacity 1500 MW in an area of 40.72 ha located at Village Pechiparai, Taluk Thiruvattar, District Kanyakumari (Tamil Nadu) by M/s Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO).

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

The EAC noted that the project site comes inside the Kanyakumari Wildlife Sanctuary and Kalakkad Mundhanthurai Tiger Reserve and the project site lies between dense forest area. Forests are critical habitats for wildlife, and as an ecosystem supports the complex

relationship between the living (animals, plants and microorganisms) and non-living things (earth, climate, soil, sun, weather, and atmosphere). All these components make up the environment, and they are critical for the natural and normal functions of all the activities in that particular ecosystem. Any activity that disturbs the natural balance of these components affects the productivity of the ecosystem.

The EAC suggested to submit the Alternative Site Analysis in terms of ecological aspects viz. loss of Forest ecosystem due to diversion of Forest land/loss of biodiversity and its impacts on productivity of the ecosystem and likely impacts of project on Tribals etc.

The EAC after detailed deliberations observed that the project location is sensitive in terms of dense forest cover, Tiger reserve, Wildlife sanctuary and biodiversity. Therefore, the EAC decided to conduct site-visit by EAC sub-committee members before making any recommendations on proposal.

*The proposal was **deferred for site visit** by the EAC on the above lines.*

Agenda item No. 43.6

Demwe Lower Hydroelectric Project (1750 MW) in Lohit District of Arunachal Pradesh by M/s Athena Demwe Power Ltd – Extension validity of Environmental Clearance – reg.

[Proposal No. IA/AR/RIV/297228/2023; F. No. J-12011/04/2008-IA.I (Pt.1)]

43.6.1: The proposal is for Extension validity of Environmental Clearance of Demwe Lower Hydroelectric Project (1750 MW) in Lohit District of Arunachal Pradesh by M/s Athena Demwe Power Ltd.

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

- (i) Environmental Clearance was accorded by MoEF&CC on 12th Feb, 2010 with validity till Feb 2020 subject to various conditions.
- (ii) The final forest clearance was issued by Government of Arunachal Pradesh on 26th July, 2013 and by this date, Project was ready for construction with all clearances in place, Contractors mobilized, preconstruction activities commenced. However, the construction of main component was not commenced as on 4th April 2014, Hon'ble NGT has directed status quo on tree felling in the appeal filed against the Forest Clearance to the Project, by an Assam based NGO.
- (iii) On 4th April, 2014, in the appeal filed against the Forest Clearance to the Project, by an Assam based NGO – North East Affected Area Development Society, Hon'ble NGT has directed status quo on tree felling and since then the construction of the Project could not be commenced. Hon'ble NGT vide its Order dated 24th October, 2017 i.e after more than 42 months dismissed the appeal against Forest Clearance of the Project and directed the Standing Committee of NBWL to reconsider the issue relating to the Demwe Lower HEP and pass appropriate orders. Till such orders are passed, the forest clearance of the Project stands suspended.
- (iv) Due to delayed receipt of forest clearance and prolonged stay on tree felling activities and suspension of forest clearance; validity of financial sanctions to the Project has lapsed.

One of the lenders i.e. Indian Bank has declared the Company as NPA and filed a petition under Insolvency and Bankruptcy Code, 2016 (IBC) before Hon'ble National Company Law Tribunal (NCLT), New Delhi, for resolution of their dues. Vide Hon'ble NCLT, New Delhi Order dated 28th September 2017, Corporate Insolvency & Resolution Process (CIRP) under Insolvency and Bankruptcy Code, 2016 (IBC) has commenced on the Company impacting the progress of the Project.

- (v) The Resolution Plan for revival of the Project submitted before Hon'ble NCLT is expected to be taken up for approval in next couple of months after disposal of application of unsuccessful bidder.
- (vi) The Extension of EC Validity has been granted to 1750 MW Demwe Lower HEP vide letter J-12011/04/2018-IA-I (Pt.1) dated 22nd July, 2020 for 3 years.

Request:

- i. To exempt the litigation period from 4th April 2014 to till date i.e. 8 years, 8 months w.r.t. validity of Environmental Clearance and accordingly extend the validity to commence the construction of the Project by the said period.
- ii. To further exempt the period from issue of EC to issue of Forest Clearance i.e. from 12th April, 2010 to 26th July, 2013 i.e. 3 years 5 months & 14 days w.r.t. validity of Environmental Clearance and accordingly permit the validity to commence the construction of the Project, over and above the date as calculated under Request at (1) above.
- iii. Allow the Company to submit application, in due course of time, seeking further exemption for the period from now onwards till the final disposal of the Resolution Plan by Hon'ble NCLT and competent appellant authorities, paving way for implementation of the Resolution Plan.

43.6.3: The EAC during deliberations noted the following:

The proposal is for validity extension of Environmental Clearance of Demwe Lower Hydroelectric Project (1750 MW) in Lohit District of Arunachal Pradesh by M/s Athena Demwe Power Ltd.

As per the Ministry's Notification S.O. 1807(E) dated 12.04.2022, the environmental clearance granted to River valley projects shall be valid for a period of thirteen years. Also, the Ministry vide OM no. IA3-22/10/2022-IA.III [E 177258] dated 11.04.2022 has clarified that the validity period of the prior EC granted (after Stage-I FC), shall be reckoned from the date of grant of Stage-II FC, or a maximum period of two years, whichever is less.

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

However, as per MoEF&CC notification S.O. 221(E) dated 18.01.2021 the period from the 1st April, 2020 to the 31st March, 2021 shall not be considered for the purpose of calculation of the period of validity of Prior Environmental Clearances granted under the provisions of this notification in view of outbreak of Corona Virus (COVID-19). Accordingly, the EC dated 12.02.2010 shall be considered as valid till 11.02.2026.

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

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

The meeting ended with vote of thanks to the Chair.

ATTENDANCE LIST

Sr. No.	Name & Address	Role	Attendance
1.	Dr. K. Gopakumar	Chairman	P
2.	Dr. A.K. Malhotra	Member	P
3.	Dr. N. Lakshman	Member	P
4.	Dr. Uday Kumar R. Y.	Member	P
5.	Dr. Mukesh Sharma	Member	P
6.	Dr. A. K. Sahoo	Representative of CIFRI	P
7.	Dr. J. A. Johnson	Representative of WII	P
8.	Shri Ashok Kumar Kharya	Representative of CWC	P
9.	Shri Yogendra Pal Singh	Member Secretary	P

APPROVAL OF THE CHAIRMAN

From: kgopa@itsc.ac.in

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Sent: Friday, March 17, 2023 9:06:34 AM

Subject: Re: Draft MOM of the 43rd EAC (RV&HEP) meeting held on 07.03.2023 - reg

Dear Sir

I approve this

Kindly take the opinion also from other experts.

With regards

Gopakumar