MINUTES OF THE 9TH MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 25TH MARCH, 2021 FROM 10.00AM- 01:00 PM THROUGH VIDEO CONFERENCE.

The 9th 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 25th March, 2021 through video conference, under the Chairmanship of Dr. K. Gopakumar. The list of Members present in the meeting is at **Annexure A.**

Agenda Item No. 9.1: **CONFIRMATION OF THE MINUTES OF THE 8th EAC MEETING**

The minutes of the 8th EAC (River Valley Hydroelectric Project) meeting held on **1st March 2021** were confirmed.

Agenda No. 9.2

Shaheed Lakhan Nayak Small Hydroelectric Project of 25 MW in an area of 4.902 ha by Meenakshi Odisha Power Private Limited in Village Tentuligumma, Tehsil Boipariguda, District Koraput, (Odisha) – Environmental Clearance – Reg.

[Proposal No. IA/OR/RIV/140749/2020; F. No. J-12011/03/2007-IA.I]

9.2.1 The proposal is for Environment Clearance to Shaheed Lakhan Nayak Small Hydroelectric Project of 25 MW in an area of 4.902 ha by Meenakshi Odisha Power Private Limited in village Tentuligumma, Tehsil Boipariguda District Koraput, Orissa located in village Tentuliguma District Koraput (Odisha).

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

(i) The proposed project is a run-of-the-river scheme, a very compact project, planned on total land of only 4.902 ha with 25 MW installed capacity.
(ii) The project is planned on Kolab River without involving any submergence or pondage. It is a run-of-the-river scheme, utilizing seasonal discharges of the river for power generation.
(iii) Project location is Latitude/Longitude: 18° 45' 22.8"/ 82° 08' 11.5".
(iv) The powerhouse is proposed on the right bank of river near Tentuliguma Village. The gross head of about 36.77 m would be available from Full Reservoir Level of 339 m of the proposed Gated weir on the upstream side. The average net head available work out to be about 34 m. There is no submergence due to project. A surface powerhouse is proposed on right bank with 2 units of 12.5 MW capacity each.
(v) No families will be affected as there is no private land requirement for the project.

(vi) The cost of the project works out to Rs.17835.05 lakh without IDC and Rs. 19823.00 lakh with IDC and it is proposed to be completed in 3 years.

(vii) The scheme will involve construction of 8.33m high gated weir, 185 m long Head race tunnel, surface powerhouse and 50m long tail race channel.

(viii) Project will be constructed on 4.902 ha of forestland. Proposal of diversion of 4.902 ha forest land was submitted and Stage II forest clearance has been accorded by MOEF&CC vide Letter No. 5-ORB409/2020 dated 16/02/2021.

(ix) **Components of the project:**

- The project is designed with the gated weir with crest level at EL 329.33 m and radial crest gates of 9.67 m height are provided to achieve a Full reservoir level 339 m.
- The gated weir is designed with a spillway length of 123 m and maximum flood level of EL 340 m such that the estimated project flood of 8200 cumec is contained within the MFL of the river course.
- The Catchment area of the project is 2438 sq km.
- The gated weir is provided with 7 radial gates of 15 m wide X 9.67 m height and one stop log gate of 15 m X 9.67 m for discharge regulation and flood control.
- Head race tunnel connects approach channel to circular surge shaft; 185 m long and 6 m dia, designed to carry a discharge of 100 cumec. Restricted orifice circular RCC surge shaft having 22 m dia (ID) and 27.5 height from bed level is proposed.
- Two circular penstock with 3.9 m dia and 30 m length connects to surface powerhouse on right bank of Kolab river with two turbines of rated capacity of 12.5 MW each. Rated discharge per unit is 43.25 cumec. Tail race channel will be 50 m long trapezoidal channel with full supply depth of 2.17m, designed for 100 cumec discharge. The powerhouse is located on the right side in a gently sloping terrain after the second fall at about 300m downstream of the weir. The water is let out back into the river after power generation through a tailrace channel of 50 m long.

(x) Project is in close proximity to Kanger Valley National Park; all project components are outside the boundary of the National Park as well as its ESZ and its nearest boundary is about 1.1 km from the weir site. ESZ Notification of Kangar Valley National park was issued on 10/10/2019 and project is outside the boundary of ESZ.

(xi) The hydrological data has been used from daily flows gauged by CWC at Saradaput on Kolab River (Sabari) for a period of 44 years from June 1971 to May 2015. The discharge data of 44 years 1971-2015 net flow available at weir site 90% dependable year is year 2002-03. Data revealed that the mean discharge at the site is 142.664 TMC (4039.8 MCM); out of which 73.22% of discharges will be available during monsoon period from June to September and balance 26.78 % will be flowing from October to May. The maximum discharge will be available during August and September. Hence about 96.33 TMC of rated flow which constitutes 82.83% of the discharge is proposed to be used for power generation and balance will be released as environmental flow through scour sluice gates.

(xii) E-Flow: 20% of the non-monsoon period discharge will be release as environment flow during 8 months of non-monsoon period as stipulated in the TOR. This will be released by 1m gate opening during non-monsoon period. During Monsoon, there is substantial surplus discharge

available which will be released in river through scour sluice gates as they will remain open throughout the monsoon period

(xiii) To facilitate movement of fish in the river it is proposed to explore the possibility of providing 'close-to-nature type' fish pass in the form of bypass channel or pool passes.

(xiv) Brief of base line Environment: Survey for the collection of primary data was undertaken for two seasons viz, in May 2020 for pre-monsoon season data and end July-August 2020 covering monsoon season. The collection and analysis of data on soil, ambient air quality, noise monitoring, and groundwater quality, and vegetation were done. Air & Noise sampling- 06 locations &Surface Water& Groundwater-05 Locations.

(xv) Ambient Air Quality: The concentrations of PM2.5, PM10, SO2 and NOX at all the sites were well within the Residential & Rural area permissible limits prescribed by National Ambient Air Quality Standard 2009 notified by CPCB.

(xvi) Ambient Noise Levels were compared with the Ambient Air Quality Standard in respect of noise and results shows that the ambient noise level in the study area also well within permissible limits as per CPCB standards.

(xvii) The Noise Pollution (Regulation and Control) Rules, 2000 (amended to date). Equivalent sound levels during day time as well as night time were within prescribed standards of CPCB as there is low traffic movement in the area and the only activity is running of agricultural equipment, running of tube wells, movement of people, etc.

(xviii) Water Quality: The data on water quality has been collected to evaluate surface water (Kolab river) and ground water quality (hand pumps) in study area.

(xix) Surface water quality sample fall Class 'C' i.e. Drinking water source after conventional treatment and disinfection according to Water Quality Criteria of Central Pollution Control Board.

(xx) According to BIS standards for Drinking Water (2012) all the ground water samples collected from the study area fall within permissible limits of the same. However, in the groundwater is under the 'Very Hard water' category at most of the sampling sites, water from hand pumps can be fit for drinking after conventional treatment.

(xxi) **Floristic Diversity:** Majority of the forest area in categories under Moist deciduous forest dominant by Sal (Shorearobusta). Among major field crops grown in the area are Paddy, Finger millet, Maize, and Til, Arhar and Sugarcane. Among horticulture crops Mango, Guava, Banana, and Citrus are commonly grown fruits. Based upon field surveys an inventory of 206 species of plants belonging to angiosperms was compiled which includes plant species found in forest areas, scrubland, near agricultural fields and settlements, abandoned land, etc. In addition to angiosperms, 11 species of pteridophytes, 7 species of bryophytes and 4 species of lichen were also recorded from the study area. Among the 206 species of flowering plants recorded from the study area, Pterocarpus marsupium is listed under the 'Near Threatened' (NT) category, and two species viz; Dalbergia latifolia and Cleistanthuscollinus are under the 'Vulnerable' category of IUCN Red list of Threatened species 2020-2.

(xxii) **Faunal Diversity - Mammals:** During the field survey Mongoose (Herpestesedwardsii), Five-striped Palm Squirrel (Funambuluspennantii), India Hare (Lepus nigricollis), and Langur (Semnopithecus entellus) are the mammalian species sighted in the study area. According to the

Wildlife (Protection) Act, 1972, 10 species of mammals reported from the study area are listed as Schedule-II species, three species are listed as Schedule-III species, and five species are listed under Schedule-IV species and one species is under Schedule-V. No schedule I species was sighted in the study area.

(xxiii) **Avifauna:** A total of 44 species of bird species belonging to 15 families were reported based on two season survey in the study area. Red-Wattled Lapwing, Little Egret, Yellow-wattled Lapwing, Woodpecker, White-throated kingfisher, Green bee-eater, Black Drongo, Common Hoopoe, Ring dove, Jungle Crow, House Sparrow, Common Myna, Little cormorant were the most frequently sighted bird species in the study area. As per the Wildlife (Protection) Act, 1972, Peafowl is listed as Schedule I species reported from the study area. The rest of the species sighted during field survey are Schedule IV species. Wildlife Conservation Plan has been prepared and submitted to Chief Wildlife Warden, Odisha.

(xxiv) **Fish fauna:** Data According to an available information list of 18 species reported from the study area. As per the IUCN Red List of Threatened Species Version 2020-2, all the species of mammals, birds and fish fauna reported from the study have been listed under Least Concern (LC) category.

(xxv) Environmental Management Plan with budget breakup (Capital & Recurring):

S. No	Component of EMP	Capital Cost (Rs. in lakh)	Recurring Cost (Rs. in lakh)	Total Cost		
			Year 1	Year 2	Year 3	**(Rs. in lakh)**
1	Catchment Area Treatment Plan*	54.48500				54.48500
2	Compensatory Afforestation Plan including NPV and Cost of trees*	111.32268				111.32268
3	Biodiversity Conservation & Wildlife Management Plan	55.00				55.00
4	Green Belt Development Plan	1.60	0.40	0.30	0.30	2.60
5	Landscaping and Restoration				12.50	12.50
6	Fisheries Conservation and Management Plan	60.00				60.00
7	Disaster Management Plan	25.00	3.50	3.50	3.50	35.50
8	Public Health Delivery System	32.00	11.00	11.00	11.00	65.00
9	Sanitation and Solid Waste Management Plan	23.00	8.00	9.00	9.00	49.00
10	Energy Conservation Measures	12.50	8.30	8.30	8.30	37.40
11	Environmental Monitoring Program	4.00	24.00	24.00	24.00	76.00
12	Local Area Development Fund		61.00	61.00	60.00	182.00
	Total	378.908	116.200	117.100	128.600	740.808

(xxvi) Public hearing was held on 17th January 2021 at the Park of Shaheed Lakhan Nayak Small Hydroelectric Power Project adjacent to BSF Camp of Tentuligumma Village of Boipariguda

PS Under Koraput District, Odisha. Meeting was chaired by Additional District Magistrate of Koraput District.

9.2.3 The EAC during deliberations noted the following:

The proposal is for grant of Environmental Clearance to Shaheed Lakhan Nayak Small Hydroelectric Project (25 MW) in an area of 4.902 ha, by Meenakshi Odisha Power Private Limited in village Tentuligumma, Tehsil Boipariguda District Koraput, Orissa.

Earlier, Environment Clearance (EC) of SLN SHEP (25 MW) located at Tentuliguma Village, Koraput District of Odisha was granted by Ministry vide its Letter No. J-12011/3/2007IA.I dated 23rd April, 2007 and works on the project were initiated during 2008-09 and so far, an expenditure of Rs. 16.34 crores has been incurred. The validity of the EC for maximum 13 years expired on 22.04.2020, therefore PP had applied for fresh ToR (de-novo).

MoEF&CC vide Letter No. J-12011/3/2007 IA.I dated 17th April, 2020 granted Standard ToR to the proposed project with the Additional ToRs for preparing EIA/EMP report.

The PP has applied for EC for appraisal as Category A Project, since the project is located at a distance of 1.09 km from Kanger Valley National Park (Chhattisgarh State) as well as inter-state boundary between Odisha and Chhattisgarh, therefore, General Condition were applicable to the instant project.

EAC in the present meeting (9th meeting) deliberated on the information submitted (Form 2, EIA/EMP report, kml file, etc.) and as presented in the meeting and observed that the proposed project utilizes two natural falls of total about 25 m height on Kolab River in Koraput District.

The power house is proposed on the right bank of river near Tentuliguma Village. The gross head of about 36.77 m and Full Reservoir Level of 339 m of the proposed Gated weir on the upstream side. The average net head about 34 m. There is no submergence due to project. A surface powerhouse is proposed on right bank with 2 units of 12.5 MW capacity each.

Proposal for diversion of 4.902 ha forest land for the proposed project has been accorded by MOEF&CC. Project is in close proximity to Kanger Valley National Park all project components are outside the boundary of the National Park as well as its ESZ and its nearest boundary is about 1.1 km from the weir site. There would be no submergence or pondage created by project.

9.2.4 *The EAC after detailed deliberation observed that there are various deficiencies which required for further consideration of the project. It was desired that PP may submit the below mentioned information:*

(i) Details about upstream and downstream projects be provided along with sketches.

(ii) *Type of fish passes to facilitate movement of fish in the river may be indicated in the EIA/EMP report. CIFRI must be consulted in this regard.*

(iii) *Status of approval of Conservation plan for Schedule I species from Chief Wildlife Warden.*

(iv) *A comparison between minimum observed flow in the river and proposed e-flow along with arrangements for maintaining the e-flow as per norms be provided.*

(v) *Air and water analysis results be re-checked in terms of its sampling time/season, whether the average mentioned in the analysis is annual or it is only for 2 seasons.*

(vi) *A statement on the issues raised during public hearing and commitments made, activity-wise, be provided.*

(vii) *Impact of proposed activity during construction on terrestrial and aquatic life be studied and management plan be prepared accordingly.*

(viii) *In accordance with TOR full details about name and number of posts to be created by the project proponent for implementation of EMP and monitoring of environmental parameters be specified in the EIA report rather giving name of Committee proposed for monitoring and evaluation of the Biodiversity Conservation and Wildlife Management Plan.*

(ix) *Proposed cost of green belt development plan seems at lower side, so the revised cost estimate be provided after consultation with concerned forest department.*

(x) *Detailed impact analysis of muck transportation and management be provided.*

(xi) *Necessary consent of neighbouring States (The project falls 1 km from inter-state boundary Chhattisgarh) be submitted.*

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

Agenda No. 9.3

Dhaulasidh Hydro Electric Power Plant of 66 MW as Run of River scheme in an area of 338.2 ha, by M/s SJVN Ltd. in village Sanotu District Hamirpur and Kangra, Himachal Pradesh – Amendment in Environmental Clearance (EC)-Reg.

[Proposal No. IA/HP/RIV/27534/2013; F. No. J-12011/15/2010-IA-I]

9.3.1 The proposal is for amendment in Environmental Clearance (EC) to Dhaulasidh Hydro Electric Power Plant of 66 MW as Run of River scheme in an area of 338.2 ha, by M/s SJVN Ltd. in village Sanotu District Hamirpur and Kangra, Himachal Pradesh.

9.3.2 The EAC during deliberations noted the following:

(i) Environment Clearance for the Project was granted by Ministry vide its letter No. J-12011/15/2010-IA-I dated 21st February, 2013.

(ii) Forest Stage-II Clearance for 57.7365 Ha has been accorded by MoEF&CC dated on 11.08.2020.

(iii) Techno Economic Clearance (TEC) Approval: The Govt. of H.P. vide their letter no. DOE / CE(Energy) / TEC-Dhaulasidh/2011-1917-24 dated 25.06.2011 has accorded TEC.

(iv) EAC deliberated on the information submitted in Form 4 and as presented in the meeting by Project proponent.

(v) PP has proposed to revise details of muck disposal against the originally proposed details and Revised Cost for Implementation of Muck Management Plan and accordingly amending in EC in the Standard EC Condition Part A: Specific condition no. (V) and Corrigendum Condition No. 2 for change in mucking dumping sites from 2 to 3.

(vi) It was noted that at the time of environment clearance of project, two number of muck dumping sites were identified for dumping of unutilized muck generated from various components during construction of project for which total 4.30 ha land was identified in the project area. Dumping site-1 was identified in forest land measuring 1.20 ha and Dumping Site-2 (DS-2) was identified in private land in Village Busal, Tehsil Nadaun, Hamirpur measuring 3.10 ha.

(vii) It was noted that as the owners of DS-2 (3.10 ha private land) are refusing to lease their land for dumping. Further, two new buildings have also been constructed in the area out of which one building has been constructed at the entry point of dumping site. Hence at present there is no access to Dumping Area-2. Therefore, two new patches of private land having an area 2.30 ha have been identified for safe and scientific disposal of muck as per MoEF&CC guidelines. For these two dumping sites rent agreement are already signed.

(viii) PP has submitted the Quantity of muck to be disposed at different muck disposal sites as mentioned in below table:

Dumping Site	**Location**	**Co-Ordinates**	**Original Proposed Detail**		**Revised Detail**	
			Capacity of Dumping Site(M^3)	**Volume of Muck to be Disposed (M^3)**	**Capacity of Dumping Site(M^3)**	**Volume of Muck to be Disposed (M^3)**
Dumping Area – 1 (DS-1)	On Project approach road about 2.50 KM from Dam Site	(31°47'43.67"N 76°27'0.51"E)	256300	189850	256300	189850
Dumping Area – 2 (DS-2)	On Jihan- Sujanpur road.	(31°47'40.85"N 76°27'08.71"E)	620532	574150	564456	514150

Dumping Site	Location	Co-Ordinates	Original Proposed Detail		Revised Detail	
			Capacity of Dumping Site(M^3)	Volume of Muck to be Disposed (M^3)	Capacity of Dumping Site(M^3)	Volume of Muck to be Disposed (M^3)
Dumping Area – 3 (DS-3)	On Link road about 400 Mtr from Nadaun Sujanpur road, near DSHEP proposed colony.	(31°47'08.54 "N 76°26'54.48" E)	-	-	79763	60000
			876832	764000	**900519**	764000

Earlier provision of Rs.8.8 million was made towards the muck disposal plan as per the provisions and revised cost for muck disposal plan is 8.95 million. Further Muck Management Plan Activities has been proposed and noted below:

a. Civil works (construction of retaining walls, wire-crate walls etc.)
b. Dumping of muck as per MoEF&CC guidelines.
c. Levelling of the area, terracing and implementation of various engineering control measures e.g., wire-crate wall, masonry wall, catch water drain.
d. Spreading of soil and laying of Geo-Erosion Control Blanket.
e. Planting of native tree and shrub species.
f. Financial Allocation: 89.50 lakhs

*9.3.3 The EAC after deliberations **recommended** the proposal for amendment in EC dated 21st February, 2013 of EC Condition Part A: Specific condition no. (V) and Corrigendum Condition No. 2 for change in mucking dumping sites from 2 to 3 under following conditions:*

(i) Issues raised during public hearing and accordingly promised by PP should be implemented in stipulated time frame.
(ii) Necessary control measures such as water sprinkling arrangements at all the construction and muck disposal sites and construction of paved roads leading to muck disposal sites shall be made to arrest fugitive dust and proper institutional mechanism be prepared for supervising this activity during operation &maintenance stage of the project.
(iii) 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.
(iv) Slope height of disposed muck should be maintained at 25 degrees for stabilization of muck.
(v) Necessary consent shall be obtained from District Administration due to proposed change in private land use for dumping of muck.

Agenda No. 9.4

Gyspa Hydro Electric Power Project of 300 MW in an area of 1322.95 ha on River Bhaga by M/s Himachal Pradesh Power Corporation Ltd in Village Jispa Tehsil Keylong District Lahaul & Spiti (Himachal Pradesh) – Reconsideration of Terms of Reference (ToR)– reg.

[Proposal No. IA/HP/RIV/50633/2016; F. No. J-12011/11/2016-IA-I(R) Pt]

9.4.1 The proposal is for Terms of Reference (ToR) to Gyspa Hydro Electric Power Project of 300 MW in an area of 1322.95 ha on River Bhaga by M/s Himachal Pradesh Power Corporation Ltd in Village Jispa Tehsil Keylong District Lahaul & Spiti (Himachal Pradesh).

The PP made a presentation before the EAC and informed that their earlier proposal was considered by EAC on 12-13th November, 2010 and was not accepted due to large submergence area. As per the directions of EAC revised proposal with dam axis shifted 3.2 km upstream of Gyspa Village was again placed before EAC on dated 26th March, 2011.TOR granted on revised proposal on dated 21st December, 2011. The validity of TOR granted in 2011, lapsed in 2014. Accordingly, Fresh application for TOR was submitted on dated 07.03.2016.The proposal was listed before EAC on dated 28.03.2016. However, project proponent could not attend the meeting and the application was delisted on dated 01.02.2017. Request was made to the Member Secretary, EAC(RV&HEP),MOEF&CC, GOI to reopen the project. Fresh application for grant of TOR was made online on dated 24.11.2020.The project was listed before EAC on dated 02.12.2020 and was deferred for want of following additional information sought by EAC:

1. Details regarding total land requirement including submergence area to the present proposal and prior to grant of ToR dated 21.12.2011.
2. Comparative chart should be prepared having details on the project configuration (dam height, FRL, submergence area, etc).
3. PFR shall be prepared as per the Ministry guidelines dated 30.12.2010 having details on Site Analysis.

9.4.2 The details of the project submitted by project proponent and ascertained from the document submitted as desired by the EAC are mentioned below:

(i) Land requirement (Description on different types of land involved in the proposal with their present status):

S.N.	Name of Component	Land Required		Total (in ha)
		Forest	Private	
1.	Submergence area i/c Rock fill dam, job facilities, quarry site, dumping yards, temporary site offices and labour colonies etc.	1160	60	1220

2.	Water conductor (HRT, S/S,P/S).	11.5	-	11.5
3.	PH & TH caverns.	1.2	-	1.2
4.	TRT.	1.0	-	1.0
5.	Switch yard.	0.5	-	0.5
6.	Diversion tunnel.	3.00	-	3.00
7.	Adits.	6.5	-	6.5
8.	Roads.	20.00	-	27.00
9.	Permanent residential and non-residential buildings.	Nil	2.25	2.25
10.	Rehabilitation and resettlement of displaced families.	50	-	50
Total land required		**1253.70**	**69.25**	**1322.95, say 1323.00**

(ii) Comparison of Submergence Area & Other Features:

S.No.	**Description**	**As per the presentation before 43rd EAC (RV&HEP), dated 12-13th Nov. 2010 i.e. Before TOR granted on 21st Dec. 2011.**	**As per Present Proposal submitted on 24.11.2020**
1	Location of Project	Storage scheme on River Bhaga, tributary to Chandra Bhaga River in Distt. Lahaul & Spiti of Himachal Pradesh	Storage scheme on River Bhaga, tributary to Chandra Bhaga River in Distt. Lahaul & Spiti of Himachal Pradesh
2	Dam Axis	Near Village Gyspa	Shifted 3.2 Kms. Upstream of Gyspa Village as per EAC Recommendations.
3	Total Land Requirement	1635 Ha	1322.95 Ha
4	Submergence Area	1500 hectares	1220 Hectares
5	Villages to be Submerged	5	4
6	No. of families to be displaced	131 families	74 families
7	Dam	200 meters high	200 meters high
8	HRT	11.75 Kms. long	14.96 Kms. long
9	Power House Complex	R/B of River Bhaga at EL 3025m at 300m upstream of village Stingri.	R/B of River Bhaga at EL 3025m at 300m upstream of village Stingri.
10	FRL	EL 3439.62	EL 3466
11	MDDL	EL 3313	EL 3335
12	Gross Storage of Reservoir	1.151 MAf	0.74 MAf
13	Live Storage of Reservoir	1.0 MAf	0.65 MAf
14	Length of Reservoir	The length of reservoir at El.3439.62 m is ± 11 km upstream of the Dam and has an average width of ± 0.750 km.	The length of reservoir at EL 3466m will be 5 km Upstream of dam with average width of 0.75 km.

9.4.3 The EAC noted the submissions made by the PP and after detailed deliberations observed that in the earlier EAC meeting it was suggested that submergence area and total project area should be minimized. The EAC was concerned about the fact that after spending 7 years (ToR was lapsed in 2014) no chapter of DPR has been completed.

Further, EAC deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that *there are certain additional details which required for further consideration of the project. It was desired that PP may submit the below mentioned information:*

(i) Since the project has been presented as a National project and also comes under the ambit of IWT, the conceptual plan shall be submitted to CWC for prima-facie acceptance of the location of the dam and other components of the project. The consent of CWC to be submitted to the EAC for further consideration.
*The proposal was **deferred** on the above lines.*

Agenda No. 9.5

Niare Hydro Electric Project of 870 MW as Run of River scheme in an area of 429.585 ha by M/s Andhra Power Private Limited in village Orak district Upper Subansiri, Arunachal Pradesh – Terms of Reference (ToR) – Reg.

[Proposal No. IA/AR/RIV/202902/2021; F. No. J-12011/07/2021-IA-I (R)]

9.5.1 The proposal is for Terms of Reference to Niare Hydro Electric Project of 870 MW as Run of River scheme in an area of 429.585 ha by M/s Andhra Power Private Limited in village Orak district Upper Subansiri, Arunachal Pradesh.

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

(i) The project is a Run-of-River scheme which envisages utilization of discharge of River Subansiri, a major tributary of the mighty Brahmaputra.
(ii) The dam site of this project is located about 53 km upstream of Nacho town near near Orak village at longitude Latitude 28° 22' 2.13" N Longitude 93° 32' 48.08"Ein Upper Subansiri District in upper reaches of Subansiri River in Arunachal Pradesh. It is about 165 km upstream from Daporijo town.
(iii) The Project will utilize a net head of 212.23 m and design discharge of about 413.17 cumec for generation of 800 MW (4 units of 200 MW each) in main power house a net head of 74.33 m and design discharge of about 103.22 cumec for generation of 70 MW (2 units of 55 MW + 15 MW each) in auxiliary power house.
(iv) The various components of the project are:

i. A Concrete Gravity Dam of 118.5 m height (above foundation level) and 248.676 m length at top with central spillway comprising of 6 Nos. of sluice type and 1 No. of surface type spillway have been proposed to pass the design flood of 11800 cumec.

ii. The main powerhouse has been proposed on the left bank of Subansiri River about 750 m upstream of Gola Nala & the auxiliary powerhouse has been proposed on the left bank of Subansiri river.

iii. The river bed level at the dam site is at EL. 1180 m. Niare HEP FRL is proposed at EL. 1277 m.

iv. The catchment area of Subansiri River at the dam site is 11,181 sq km.

v. The water conductor system of the Niare HEP consists of one main power intake of 9.5 m width & 10.5 m height and one secondary power intake of 5 m by 5 m size

(v) The project is scheduled to be completed in 60 months after financial closure. On completion of the project, it will provide 870 MW of peak power with generation of 3512.99 GWh of electricity in a 90% dependable year at 95% machine availability. The plant load factor of this scheme would be about 45.65%.

(vi) Submergence Area: The submergence area at FRL is 74.325 ha, which includes 20.14 ha of river bed area.

(vii) No protected area within 10 km radius of project components.

(viii) Land requirement: Total land required for construction of various components, including infrastructure facilities and muck disposal area is estimated to be around 429.585 ha of which 74.235 ha area is coming under submergence zone. Out of this, 280 ha is forest land. Application for diversion of forest land is yet to be filed and same shall be done in stipulated time.

(ix) Ecological Sensitive Area: No protected area within 10 Km radius of project components.

(x) The hard cost of the project has been estimated as Rs. 4315.08 Crores at March 2021 price level. The capitalized completed cost of the project including escalation @ 7% on Civil and E&M works and IDC @ 12.0% p.a works out to Rs 5676.29 crore.

(xi) Project benefit: Electricity generation of 3512.99 MU in 90% dependable year with free power to the State and for Local Area Development. Employment opportunities during construction period approx. employment would be for 1000-1200 workers / staff and during operation, project is estimated to employ approx. 200-250 manpower.

(xii) Status of other statutory clearances:

i. Hydrology: yet to be approved.

ii. Power potential studies: yet to be approved.

(xiii) R&R Details: Total private land requirement for the project is 149.585 ha. Details will be worked out about the ownership of land during the EIA study. No displacement is envisaged as there is no habitation on the land required for the project. R&R package will be developed in line with RFCT LARR Act, 2013 and R&R policy of Arunachal Pradesh during the course of EIA study.

(xiv) Niare HE Project has been duly considered in the Subansiri Basin Study which has already been approved by MoEF&CC. As per basin report E-flow release recommendations are 20% each for lean, monsoon and pre & post monsoon seasons of corresponding average flows of 90% dependable year; which will be built into project design. As per basin report, with the merger of

Oju I and Oju II, the distance between TWL and FRL of Oju and Niare was 0.88 km and distance between TWL of Niare and FRL of downstream Naba project was 0.64 km.

(xv) Government of Arunachal Pradesh (GOAP) has signed a Memorandum of Agreement (MOA) with M/s Coastal Infrastructure Pvt. Ltd. (CIPL) on 26th April, 2011 for the development of the Niare HEP in Subansiri basin. Coastal Infrastructure Pvt. Ltd has formed an SPV, M/s Andra Power Pvt. Ltd for the development of 870 MW Niare HEP.

9.5.3 The EAC during deliberations noted the following:

(i) The proposal is for Terms of Reference to Niare Hydro Electric Project (870 MW) as Run of River scheme in an area of 429.585 ha by M/s Andhra Power Private Limited in Upper Subansiri District of Arunachal Pradesh.

(ii) EAC deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the project is a Run-of-River scheme which envisages utilization of discharge of River Subansiri, a major tributary of the mighty Brahmaputra.

(iii) The main powerhouse has been proposed on the left bank of Subansiri River about 750 m upstream of Gola Nala & the auxiliary powerhouse has been proposed on the left bank of Subansiri river.

(iv) Project involves Forest land of 144.15 ha for diversion for non-forestry activities. It was noted that PP has not yet applied for Forest Clearance for diversion.

(v) The catchment area of Subansiri River at the dam site is 11,181 sq km. The Project will utilise a net head of 212.23 m and design discharge of about 413.17 cumec for generation of 800 MW (4 units of 200 MW each). Project will provide all the benefits of a hydropower projects, Electricity generation of 3512.99 MU in 90% dependable year with free power to the State and for Local Area Development.

(vi) Project involves Forest land of 280 ha for diversion for non-forestry activities. It was noted that PP has not yet applied for Forest Clearance for diversion.

(vii) As per Subansiri River basin study report, Subansiri Sub basin which is the most important basin from the point of view having highest number of HEPs with highest installed capacity. The highest estimated loss of forest area and reported presence of endemic and threatened species. The Sub basin also holds possibility of discovery of new species, possible rediscovery of endemic and species or new distributional record for the State. In view of above it is very important to develop HEPs in sustainable manner. The detailed surveys and investigations should be carried out to ascertain the distance between FRL and TWL of Niare and Naba may be in accordance with MoEF&CC guideline to maintain free flowing properly. Accordingly, Niare HE project location must be finalized with suitable alternative location. Based on finalized appropriate location the environmental Impact assessment study to be carried out and accordingly mitigation measures prepared to minimized impact due to construction of hydro-electric project.

9.5.4 *The EAC after detailed deliberation observed the following deficiencies which required for further consideration of the project. It was desired that PP may submit the below mentioned information:*

(i) A longitudinal section of the river showing the proposed dam with the upstream and downstream proposed developments alongwith the head and tail water levels may be submitted to ascertain the free flowing stretch in accordance with the MoEF&CC guidelines.

(ii) A longitudinal section of dam upto 50 meter above FRL covering both the bank of River along with the Dam structure showing FRL and MWL

(iii) The details of any catastrophic (landslides, earthquakes etc.) event in the area be obtained from concerned department.

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

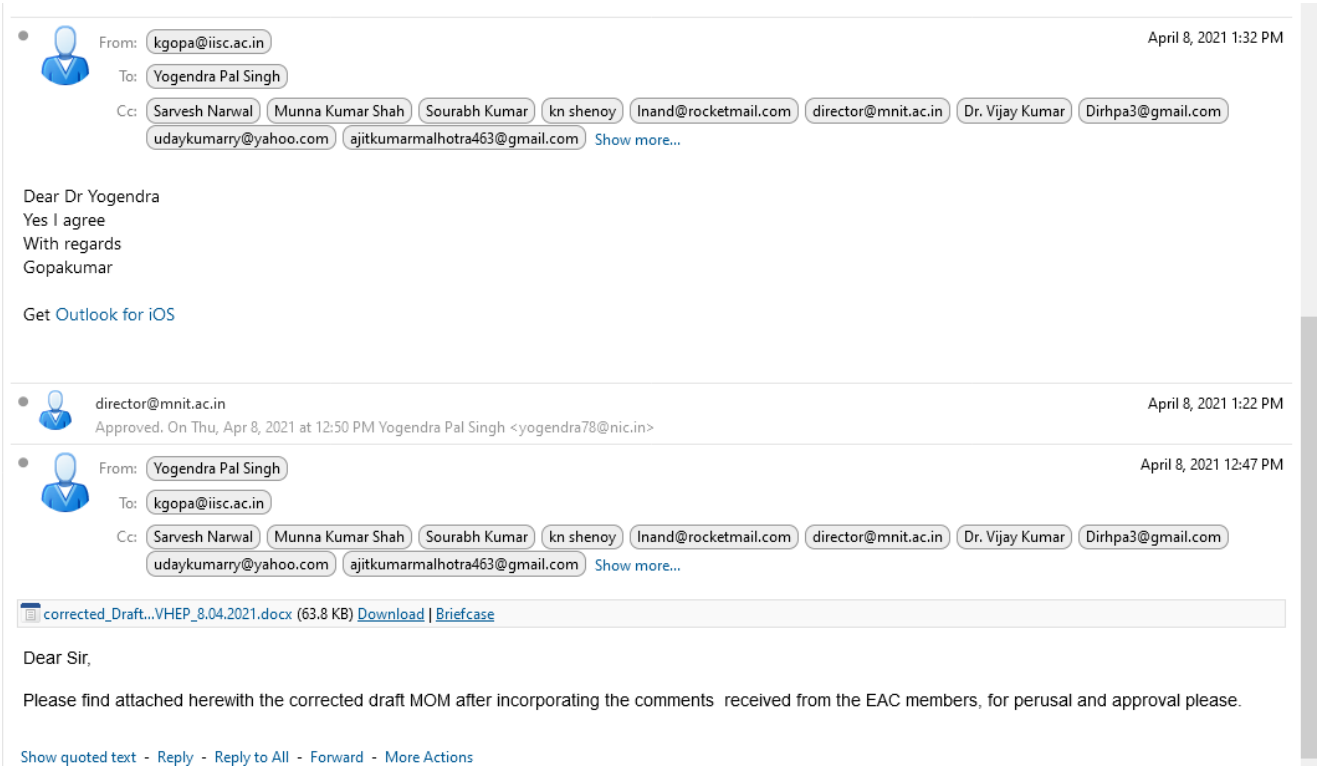
The meeting ended with vote of thanks to the Chair.

Annexure - A

ATTENDANCE LIST

Sr. No	Name & Address	Role	Attendance
1	Dr. K. Gopakumar	Chairman	P
2	Dr. N. Lakshman	Member	P
3	Dr. Mukesh Sharma	Member	P
4	Dr. B.K. Panigrahi	Member	P
5	Dr. Chandrahas Deshpande	Member	P
6	Dr. A.K. Malhotra	Member	P
7	Dr. Uday Kumar R.Y.	Member	P
8	Dr. Narayan Shenoy K	Member	
9	Shri Balraj Joshi	Member	P
10	Shri Sharvan Kumar	Member (Representative of CEA)	P
11	Shri A.K. Singh	Representative of CWC	P
12	Dr. J.A. Johnson	Representative of WII	
13	Dr. A.K. Sahoo	Representative of CIFRI	P
14	Dr. Vijay Kumar	Representative of Ministry of Earth Sciences	
15	Shri Yogendra Pal Singh	Member Secretary	P

APPROVAL OF THE CHAIRMAN



From: kgopa@iisc.ac.in
To: Yogendra Pal Singh
Cc: Sarvesh Narwal; Munna Kumar Shah; Sourabh Kumar; kn shenoy; Inand@rocketmail.com; director@mnit.ac.in; Dr. Vijay Kumar; Dirhpa3@gmail.com; udaykumarry@yahoo.com; ajitkumarmalhotra463@gmail.com Show more...

April 8, 2021 1:32 PM

Dear Dr Yogendra
Yes I agree
With regards
Gopakumar

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director@mnit.ac.in
Approved. On Thu, Apr 8, 2021 at 12:50 PM Yogendra Pal Singh <yogendra78@nic.in>

April 8, 2021 1:22 PM

From: Yogendra Pal Singh
To: kgopa@iisc.ac.in
Cc: Sarvesh Narwal; Munna Kumar Shah; Sourabh Kumar; kn shenoy; Inand@rocketmail.com; director@mnit.ac.in; Dr. Vijay Kumar; Dirhpa3@gmail.com; udaykumarry@yahoo.com; ajitkumarmalhotra463@gmail.com Show more...

April 8, 2021 12:47 PM

corrected_Draft...VHEP_8.04.2021.docx (63.8 KB) Download | Briefcase

Dear Sir,

Please find attached herewith the corrected draft MOM after incorporating the comments received from the EAC members, for perusal and approval please.

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