MINUTES OF THE 8TH MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 1ST MARCH, 2021 FROM 10.00AM - 01:00 PM THROUGH VIDEO CONFERENCE.

The 8th 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 1st March, 2021 through video conference, under the Chairmanship of Shri Balraj Joshi. The list of Members present in the meeting is at **Annexure A.**

Agenda Item No. 8.1: **CONFIRMATION OF THE MINUTES OF THE 7th EAC MEETING**

The minutes of the 7th EAC (River Valley Hydroelectric Project) meeting held on **5th February 2021** were confirmed.

Agenda Item No. 8.2: Expansion of Tidong-I Hydroelectric Project (Phase-II) for (Phase I - 100MW+ Phase II - 50MW) in an area of 42.2557 ha (without increase in area) by M/s Tidong Power Generation Private Limited located in village Rispain, District Kinnaur (Himachal Pradesh) - Environmental Clearance (EC) [Proposal No. IA/HP/RIV/105017/2019; F. No. J-12011/09/2019 IA-I (R)]

8.2.1 The proposal is for Environment Clearance to Expansion of Tidong-I Hydroelectric Project (Phase-II) for (Phase I - 100MW + Phase II - 50MW) in an area of 42.2557 ha (without increase in area) by M/s Tidong Power Generation Private Limited located in village Rispain, District Kinnaur (Himachal Pradesh).

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

(i) It is run of river scheme proposed to harness the hydro potential of Tidong River in its lower reaches between Lambar and Rispa villages.

(ii) The proposed site is situated 270 km from Shimla on National Highway 22 up to a place near Moorang and thereafter 8 km on the state road upto village Thangi. The distance from Thangi to diversion site at Lumber is about 8 km. Diversion weir is located at Lumber village and power house at Rispa village. The coordinates of the proposed site are latitude 31°20'30" N to 31°33'30" and longitude 78°22'10" E to 78°47'50" E.

(iii) The project is extension of under construction Tidong I 100 MW which envisages widening of Surge Shaft Diameter from 8.0 m to 10.0 m and extension of powerhouse length. Third unit of 50MW will be installed adjacent two under construction two units of 50 MW. This is a run of the river scheme. The catchment area of the project is 497.86 Sq. km.

(iv) Total land acquired for phase-I project is 42.2557 ha, out of which 39.0546 ha is forest land, and 3.2011 ha is private land. Total submergence area is about 0.4 ha. An surface powerhouse is proposed with 1unit of 50MW capacity. Due to this project no additional families in any village will be affected. The total cost of project is about Rs. 158.50 crore and proposed to be completed in 20 months.

(v) Two Turbines of 50 MW each in phase –I, is under construction and one additional unit of 50 MW is proposed to be added in phase- II of project development. The project works for phase - I are in advanced stage of Construction. The project development is in under construction and phase-II is expected to be completed in a period of 20 months from zero date. The infrastructure

facilities available in phase-I will be used and are mostly found to be adequate for construction of the phase-II. Tidong-1 in Phase–II is techno-economically viable and its early execution is planned for reducing the gap between availability and demand of power in the Northern Region of the country.

(vi) Project Components details:

Components	Three Units(3X50 MW)	Two Units(2X50MW)
1.LOCATION		
Stream	Tidong, a tributary of Sutlej River	Tidong, a tributary of Sutlej River
Vicinity	Near Reckong Peotown	Near Reckong Peotown
Longitude	78°22' 10" Eto78°47' 50" E	78°22' 10" Eto78°47' 50" E
Latitude	31°20' 30" N to 31 °33' 30" N	31°20' 30" N to 31° 33' 30" N
2.HYDROLOGY		
Catchment area at diversion	497.86km^2	497.86km^2
Design Flood(50-yearReturn period)	405cumec	405cumec
3.RIVER DIVERSION(During Construction)		
Type	Diversion Channel	Diversion Channel
Length	210.00 m	210.00 m
Size & shape	9m(W)x2(D), Rectangular	9m(W)x2(D),Rectangular
4.DIVERSION BARRAGE		
A. Spillway		
Type	Non-Gated	Non-Gated
Maximum Water level	2889.40m	2889.40m
Average river bed level at barrage axis	2880.00m	2880.00m
Width of bay	20.0 m	20.0 m
Energy Dissipation System	Stilling Basin	Stilling basin
B. Head regulator		
Type	2Nos.Vertical lift gates, 3.6mx4.35m	2 Nos. Vertical lift gates, 2.5 mx2.65m
Maximum Water level	2889.40m	2889.40m
Average river bed level	2880.00m	2880.00m
C. Tunnel Intake Structure		
Type	Rectangular bell mouth entrance, Non-gated	Rectangular bell mouth entrance, Non-gated
Sill level	2853.00m	2853.00m
Trash rack	Vertical (3panels)	Vertical (3panels)
Design Discharge	28.80cumec	19.2 cumec
5.RESERVOIR		
Capacity	3Hours peaking (265000m^3)	4Hrs peaking (237000m^3)
Area at FRL	0.4 ha	0.4 ha

Components	Three Units(3X50 MW)	Two Units(2X50MW)
FRL	2873.75m	2873.75m
MDDL	2860.75m	2860.75m
Reservoir bed level	2860.00m	2860.00m
6.HEAD RACETUNNEL		
Type and Size RD0 to RD 2130 RD2130toRD8409 RD8409toRD 8504	3.5 x3.5m, Concrete Lined, D-shaped 3.5mx 3.9m, Concrete Lined, D-shaped 2.5m dia Circular steel lined	3.5mX3.5mD shape Concrete lined
Velocity	2.62m/s&2.32m/s	1.75m/s
Length	8504m	8461
Design discharge	28.80cumec	19.2cumec
Slope	1in162	1in160
To HRT(RD-242)	Adit-5:116mlong. 4.1mx 4.1m	Adit-5:116mlong. 4.1mx4.1m
7.SURGESHAFT		
Type	Underground, 2.5m dia riser. Concrete lined with steel linerupto2910m.	Underground Restricted Orifice Concrete lined upto 2900 m.
Size:	10.0m Dia., 110m high.	8.0 m Dia, 120.0mhigh
08.POWER HOUSE		
Type	Surface	
Installed Capacity	150MW(3 x50MW)	100MW(2X50MW)
Size	80.3mx18.7 m	63.0mX 18.7m
09. BENEFITS		
Energygenerationat95% availability in 90% dependable year	502.44 MU	414.15 MU
11.Displacedfamilies	29Nos.	29Nos.
12.Nooftree	1261Nos.	1261Nos.
13.Total land acquired	42.2557 ha	42.2557 ha
14.Forestland	39.0546 ha	39.0546 ha
15. Private land	3.2011 ha	3.2011ha

(vii) Originally, Tidong I HEP was conceived as 100 MW (2X 50 MW) run of river project with diurnal storage. Environmental Clearance for Tidong-I Hydroelectric project for (2x50) 100 MW was accorded by Ministry of Environment, Forest & Climate Change (MoEF&CC) vide their letter J-12011/35/2007-lA-I dated 07th September, 2007. It was observed that during monsoon months, actual discharge in Tidong River is much higher than the design discharge for about 60 days.

(viii) Based on the Techno-economic Study carried out Techno-economic Study carried out by Engineering Consultant, it was found that there is possibility of putting additional 50 MW unit adjacent to two units each of 50 MW. The DPR for the 3rd Unit was prepared and submitted to Directorate of Energy (DOE), State Government of Himachal Pradesh.

(ix) Environmental sensitive area: No National Park, Sanctuary, Notified Eco-sensitive areas or protected area under Wildlife (Protection) Act exists within the project area or within 10 km distance from it. The submergence area at FRL is 0.4 ha The project site does not fall within 10 km from any Ecological Sensitive Area.

(x) Brief description on hydrology and water assessment: The total catchment area of Tidong khad at diversion site is 497.86 km^2 out of which 418.36 km^2 lies under permanent snow line (EL 4200m).Design Flood (50-year Return period) is 405 m3/sec.

(xi) Brief of baseline Environment: The various environmental aspects covering Catchment area, project influence area within 10 km radius from project components have been considered. The baseline data has been collected covering Physico-chemical aspects, biological aspects and socio-economic aspects. Three seasons data have been collected for air, noise, water and ecological aspects. Impacts during Construction and operation phase have been assessed and mitigation measures suggested minimizing the anticipated impacts.

(xii) Observations on ambient PM_{10}levels: The $PM_{2.5}$ levels are ranged from 16.0 to 42.0 $\mu g/m^3$. The PM_{10} levels are ranged from 28.0 to 74.0 $\mu g/m^3$. The maximum SO_2 level of 12.0 $\mu g/m^3$ and NO_2 level ranged from 8.0 to 22 $\mu g/m^3$ .All the values of PM_{10}, PM2.5, SO2, NO2 monitored during the field survey were below the permissible limit of 100 $\mu g/m^3$, 60 $\mu g/m^3$, 80 $\mu g/m^3$ and 80 $\mu g/m^3$ respectively for industrial, residential, rural and other areas.

(xiii) Surface Water Quality: The total hardness in various water samples ranged from 84-120 mg/l and from 88-122 mg/l and from 100-138 mg/l in Pre-monsoon, monsoon and winter seasons respectively. The low calcium and magnesium levels are responsible for soft nature of water. The carbonate hardness (for water with alkalinity level as observed in the study area) is equal to the alkalinity level, i.e. ranging from 42.12 to 52.14, from 47.08 to 55.64 mg/l and from 68 to 82 mg/l in summer, monsoon and winter seasons respectively. The total hardness level in the water is well below the permissible limit of 200 mg/l. The concentration of TDS level ranged from 155 to 229 mg/l, from 102-122 mg/l and from 311-380 mg/l in summer, monsoon and winter seasons respectively which is much lower than the permissible limit of 500 mg/l specified for domestic use. The fluorides level was lower than the permissible limit (1 mg/l) for drinking purposes. The BOD values are well within the permissible limits, which indicate the absence of organic pollution loading. This is mainly due to the low population density and absence of industries in the area.

(xiv) Ambient Noise Monitoring: The daytime equivalent noise level at various sampling stations ranged from 45.52 to 64.41 dB(A). Likewise, the night time equivalent noise level at various sampling stations ranged from 43.11 to 58.41 dB(A)The noise levels monitored at various locations in three seasons were well within the permissible limit applicable for industrial area and slightly exceeding in residential area.

(xv) Floristics: During the floristic survey conducted for three seasons, a total of 127 plant species were recorded from various sampling stations. Of these, 28 species were trees, 24 shrubs, 69 herbs, 5 lianas including climbers and 1 parasite. Of the total 127 species, the highest number of plant species viz. 75 species were recorded from the Power House area followed by 74 species at the Barrage site and 67 species at the downstream of the reservoir in the project area. The

lowest number of species viz. 47 species was recorded from the upstream of catchment area I during the study period. The other study area recorded less number of plant species.

(xvi) The terrestrial fauna in the project site represented by mammals, birds, reptiles, butterflies and amphibians.

(xvii) Avian-fauna: As many as 43 birds species were observed in the study area (Refer Table-3.64). Most of the bird species are listed under Schedule IV of Indian Wildlife (Protection) Act 1972. The commonly observed avi-faunal species include the monal and koklas, pheasants, Himalayan tragopan, snow pigeon and the Chakor.

(xviii) Reptiles: Total 7 species of reptiles and amphibians has been reported from the Greater Himalayan region. However, only one species of herpeto fauna i.e. Kashmir Rock Agama (*Laudakia tuberculata*) and Himalayan pit viper were sighted during the survey. However, presence of other herpetofauna species were given on the basis of secondary information collected from the locals & from the literature.

(xix) Mammals: Some of the common mammals found in the area are Himalayan brown bear (*Ursus arctos*), Himalayan black bear (*Selenarctos thibetanus*), Fox (*Vulpes sp)*, and Yellow throated marten (*Martes flavigula*). Other mammals which generally remain at higher altitude peaks and alpine pature land are Musk Deer, Snow Leopards, Jungle Cat, Goral, Bharal--Blue Sheep, Himalayan Tahr, Marmot, etc.

(xx) Aquatic Ecology:

a. Phytoplanktons and Phytobenthos: Phytoplanktonic community of water body during the present study was represented by three groups namely Chlorophyceae (green algae), cynophyceae (blue green algae) and Bacillarionphyceae (ditoms). At most of the sampling sites *Achnanthes, Cocconeis, Fragilaria a*nd *Gomphonema taxon* were the most common species in Tidong khad and its tributaries.

b. Periphytons: Periphyton is a complex mixture of algae, cyanobacteria, heterotrophic microbes, and detritus that is attached to submerged surfaces in most aquatic ecosystems. The common periphyton genera found in the project sites were Nitzchia, Hormidium, Spirogyra, Chlorella, Gloeocapsa and Cymbella etc.

c. Zooplanktons: Among protozoans Arcella, Peridinium, and Ceratium taxon are commonly observed. Rotifers are represented by Keratella, Brachionus and Philodina taxon.

d. Benthos (Inverteberates): Members of Ephemeroptera, Trichoptera, Plecoptera and Diptera dominated the invertebrate group in the project sites. Among benthos, taxon from 14 families has been observed and the occurrence varies from 5 to 14 families in the study area. Density of macrozoobenthos was varies from 16 to 250 counts ind.per sq m

e. Aquatic Macrophytes: No growth of macrophytes seen in the area that may be due to rapid currents and fall habitats. However, some of the aquatic macrophytes from trachyophytes, fers and mosses were found places of slow flow zones with cobbles/small boulders and graveld surfaces especially sites of ground water seepage zones. The common species identified were Equisetum sp, Adiantum and Selaginella sp. These were spotted from the wet area of Tidong khad

f. Fisheries: A total nine fish species were reported from the secondary data at till the middle juncture of Satluj basin in the Baspa Satluj confluence. So far no fish species has been reported from the Tidong valley. Among these fishes six species were endemic in nature like

Schizothorax richardsonii, Glyptothorax pectnopteerus and Triplophysa loacheswhereas three species of trouts are introduced and exotic in nature.

(xxi) Social Impact Assessment and Rehabilitation and Resettlement Plan: Study area falls in Kinnaur district of Himachal Pradesh. Revenue department of Government of Himachal Pradesh (GoHP) has prepared Resettlement and Rehabilitation Plan for the Tidong Phase-I Project. Total Households -1056, Total Population-4812, Average Family Size-5 and Sex ratio-818. It will be implemented by project proponent after notification from GoHP. The compensation to the Project Affected Families has been disbursed. For Phase-II of the project, no additional land is to be acquired, hence no adverse impacts due to acquisition of private/community land is anticipated. Thus same plan will be continued for this additional project.

(xxii) The EMP has been prepared based on predicted impact, actual requirement and incorporating suggestions of local people, stakeholders with the details as provided in the table below:

S. No	Item	EMP Cost in Phase-I (Rs. Lakh)	EMP Cost in Phase-II (Rs. Lakh)
	1. Capital Cost		
1	Compensatory Afforestation & Bio-Diversity Conservation Plan	266.76	-
2	Net Present Value (NPV)	272.99	-
3	Catchment Area Treatment	724.84	-
4	Fisheries Management Plan	111.00	-
5	Public Health Delivery System	40.0	20.0
6	Labour Camp Facilities	55.0	20.0
7	Muck Management Plan	132.0	
8	Air Pollution Control measures	35.00	25.00
9	Noise Pollution Control measures	-	
10	Greenbelt Development		10.0
11	Disaster Management Plan	-	90.0
12	Local Area Development Fund	802.72	238.00
13	Implementation of Environmental Monitoring Programme during construction stage	40.00	20.00
14	Setting up of Meteorological Laboratory	-	10.00
15	Purchase of noise meter	-	2.00
	Total (A)	2425.31	435.00
	2. Recurring Cost		
1.	Cost of Environmental monitoring during project operation phase (Rs. lakh/yr.)	-	28.2
	Total (B)		28.2
1.	Corporate Environment Responsibility (CER)		
	Corporate Environment Responsibility & Local Area Development Plan	-	238.0
	Total (C)		238.0

(xxiii) Project benefit including employment details:

a. Benefits during Construction Phase: Local Employment Opportunities, Business Opportunities and Improved access facilities in the project area

b. Benefits during Operation Phase: Improved Access to social services (education, health, market etc), Community health improvement, and Local employment opportunities.

8.2.3 The EAC during deliberations noted the following:

Project was accorded Environmental Clearance (EC) vide Letter No. J-12011/35/2007- IAI on 7th September 2007 by Ministry of Environment and Forests (MoEF). Forest Clearance was accorded through letter F. No. 9-HPC602/2007-CHA on 18th June 2008 by MoEF (Northern Region Chandigarh) for diversion of 39.0546 ha of forest land for non-forest purpose.

Consent to Establish (CTE) was granted by Himachal Pradesh State Pollution Control Board (HPSPCB) letter No. HPSPCB/Tidong HEP – Kinnaur /10140-47 dated 8th August 2008.

Terms of Reference for third unit of 50MW (Phase-II) for Tidong-I HEP (100MW+50MW), Himachal Pradesh to M/s TPGPL was accorded F. No. J-12011/09/2019-IAI (R) dated 27.11.2019 by MoEF&CC, New Delhi.

Public hearing conducted in Kinnaur district on 28.11.2020 and 30.11.2020 Organised by Ms. Anju Negi, Regional officer, Rampur H.P. State Pollution Control Board The main issues raised are Permanent employment for local people. The provision of Local Development Fund (LADF) as per the revised cost of Project, blasting in the project in the area resulting in sliding down of mountains and high pollution due to which less tourists are coming and Due to the projects, trees have been felled. Compensatory Afforestation Fund Management and Planning Authority (CAMPA) funds must be used.

EAC in the present meeting (8th meeting) deliberated on the information submitted (Form 2, EIA/EMP report, Public Hearing issues kml file, etc.) and as presented in the meeting and observed that the project is extension of under construction Tidong I 100 MW which envisages widening of Surge shaft Diameter from 8.0 m to 10.0 m and extension of powerhouse length. Third unit of 50MW will be installed adjacent two under construction two units of 50 MW. This is a run of the river project with diurnal storage. It was observed that during monsoon months, actual discharge in Tidong River is much higher than the design discharge for about 60 days. Based on the Techno-economic Study carried out Techno-economic study, it was found that there is possibility of putting additional 50 MW unit adjacent to two units each of 50 MW. The DPR for the 3rd Unit was prepared and submitted to Directorate of Energy (DOE), State Government of Himachal Pradesh.

8.2.4 *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) PP shall submit the seriatim compliance all ToR points with brief as per ToR granted by the Ministry dated 27th November, 2019.

(ii) *Details of the posts to be engaged by the project proponent for implementation and monitoring of environmental parameters (Conditions No. XV) have not been specified in EIA Report. It should be incorporated in EIA report.*

(iii) *Lower court gave the verdict on 17/05/2017 in favor of the land losers. TPGPL has challenged the court order in High Court and have obtained stay on the lower court order. The present status of above Case No.: CMP (m) No. 1573 of 2017 be intimated to MoEF&CC.*

(iv) *PP shall submit the compliance of issues raised during Public hearing proceedings with specific fund allotted and time lines*

(v) *PP shall submit Certified Compliance report from Ministry's Regional office for existing Environmental Clearance granted vide dated 7th September, 2007.*

(vi) *The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of environmental clearance for undertaking the CER activities, committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020.*

(vii) *PP shall submit the details of schedule –I Species in 10 km buffer area and wildlife conservation plan with allotted fund.*

(viii) *Hydrological discharge needs to be updated to examine the availability of water in Monsoon season after abstraction for additional proposed 50 Mw HEP. E-flow discharge should be in accordance with the latest directions of Hon'ble National Green Tribunal/ CC&CIA studies of Sutlej River, whichever is higher.*

(ix) *PP shall submit brief note on points raised by EAC regarding validity of earlier EC and justifying that there is no violation in the project.*

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

Agenda Item No. 8.3: Project for Kurha Vadhoda Islampur Lift Irrigation Scheme UPSA Sinchan Yojna with Culturable Command Area (CCA) of 32372 Ha by M/s Tapi Irrigation Development Corporationat Village Rigaon, Tehsil - Muktainagar District Jalgaon (Maharashtra) – Terms of Reference (ToR) [Proposal No. IA/MH/RIV/195147/2021; F. No. J-12011/05/2021-IA-I (R)]

8.3.1 The proposal is for Terms of Reference to Project for Kurha Vadhoda Islampur Lift Irrigation Scheme UPSA Sinchan Yojna with Culturable Command Area (CCA) of 32372 Ha by M/s Tapi Irrigation Development Corporation at Village Rigaon, Tehsil - Muktainagar District Jalgaon (Maharashtra).

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

(i) Kurha Vadhoda Islampur lift Irrigation Scheme is in jurisdiction of Tapi Irrigation Development Corporation, Jalgaon. Proposed Project for Kurha Vadhoda Islampur Lift Irrigation Scheme UPSA Sinchan Yojna with CCA 32372 Ha.

(ii) The scheme envisages lifting of flood water in rainy season from Purna River by constructing intake channel, intake structure, jack well over head pump house near village Rigaon, Taluka-Muktainagar, Dist.-Jalgaon, Maharashtra conveying water by rising main and store in Islampur dam.

(iii) The Gross storage capacity & live storage capacity of reservoir is 77.60 MCum and 70.92 Mcum respectively. The project contemplates to provide irrigation facilities annually to a Culturable Command Area 32372 Ha with annual irrigation of 25898 Ha through lift irrigation to benefit farmers. The project will benefit 25898 ha irrigable area out of which 8249 ha of Muktainagar Taluka, (Jalgaon District) & 17649 Ha is of Jalgaon –Jamod & Sangrampur Taluka of Buldhana District. Total cost of proposed project is 842.40 Crores.

(iv) Catchment Area- The catchment area of Islampur Dam is of soccer shaped and classified as good. The total catchment area up to dam site is 8.50 sq km.

(v) Command Area- The Command Area under this scheme is proposed to be 32372 Ha.

(vi) The location coordinates of the project are as below: Dam Site at Islampur: Latitude: 21°02'14.99"N Longitude: 76°24'44.99"E ; Lifting Point: Latitude: 20°57'30.00"N Longitude: 76°20'00"E

(vii) Project Component Details:

a. Jack Well Point in Rigaon Village–

- Intake arrangement consists of open channel & Intake structure near village Rigaon connected to Purna River.
- Jack Well Over Head Pump House Stage- I - It consists of Vertical Turbine Pumps of 4 Nos. each having 2110 HP capacity to lift 9.654 cumec of water from RL 208.60 m to RL 245.00 m.
- Pump House Stage - II & Sump Well - located at 2.82 km from Stage I pump house. It consists of 4 nos. of 2045 HP HSC pumps. These pumps will boost 9.654 cumec of water from RL 245.00 to 283.128 m.
- Pump House Stage - III & Sump Well -located at 6.18 km from Stage II pump house. It consists of 4 nos. of 1591 HP HSC pumps. These pumps will boost 9.654 cumec of water from RL 283.128 to 326.00 m.
- Rising Mains for all three Stages - consists of 1800 mm dia M.S. pipes in 2 rows. Each pipe will feed water by 2 pumps. The pipe length of Stage – I, II and III are having length of 2820 m, 6180 m & 4140 m respectively. Total length of rising main is 13140 m.

b. Islampur Dam - It consists of 6845 m long and 42.40 m (highest section) earthen dam with 80 m long spillway. The gross storage capacity of reservoir is 77.60 Mcum and live storage capacity of the reservoir is 70.92 Mcum. Two outlets for irrigation are proposed at Ch. 4760 m & Ch. 2400 m. Irrigation proposed from these outlets is 8445 ha & 17453 ha respectively. Total 0.828 Mcum water is reserved for drinking purpose.

- Sanctioned Layout & dam section the controlling levels are Sill Level - 300.00 M, M.D.D.L. – 303.00 M, Full Reservoir Level - 325.50 M,M. W. L. - 326.50 M , T. B. L. - 328.50 M.

- Gross storage capacity of dam is 77.60 Mcum, Live storage is 70.92 Mcum.
- Spillway of 80 m length is proposed having discharging capacity 174.95 Cumecs.
- Head Regulators- Two outlets for irrigation are proposed at Ch. 4760 m & Ch 2400m. From Outlet at Ch. 4760 m irrigation of 8445 ha is proposed by gravity pipe line. From outlet at Ch. 2400 m irrigation of high level command area of 17453 ha is proposed by lifting water by constructing online pump house at D/S side of Outlet.

(viii) Land Requirement: Total 572 ha land is required for this project. Out of which 562 ha is private land, 7.57 ha is Govt. land &remaining 1.98 ha land for rising main is forest land for which final permission from MoEF, Govt. of India is obtained vide letter No. 6- MHB – 030/2012 – BHO/1853 Dated 23.11.2012. Land required for submergence is 536 ha. The land comprises mostly private land and some government barren land. The present land use of the selected site is unirrigated land. Diversion of land for this project will not have any significant change as far as land use is concerned.

(ix) Submergence Area: The area under submergence up to Full Reservoir level (325.50 M) is 536 ha. This entire area lies in Jalgaon - Jamod Taluka of Buldhana district. Complete submergence area is in revenue area.

(x) Ecological Sensitive Area, in any within 10 km of Project Site as under

- Machhandar Nath Mandir RF~ 2.6 kms in West from Dam site.
- Raipur Reserved Forest~ 2.14kms in NW from dam site.
- RF ~ 3.25kms in SE.

(xi) Project Benefits: The drought prone area will get immensely benefitted due to availability of water for irrigation. The project will benefit 25898 ha irrigable area out of which 8249 Ha of Muktainagar Taluka, (Jalgaon District) &17649 Ha is of Jalgaon–Jamod & Sangrampur Taluka of Buldhana District. The assured irrigation would lead to increase in agriculture productivity in grains as well as cash crops and thus boost economic prosperity of the region.The existing value of the produce in the command area is Rs. 7366.14 Lakhs for 25898 Ha. After introduction of irrigation, the estimated value of produce in the command area will increase to Rs. 64787.63 Lakhs for 25898 Ha. (An increase of more than 9 times). These will in turn provide employment opportunities to the locals and benefit the people socially as well as financially.

(xii) Status of Other Statutory Clearances: 1.98 ha land for rising main is forest land for which final permission from MoEF&CC, Govt. of India has been obtained vide letter No. 6- MHB – 030/2012 – BHO/1853 Dated 23.11.2012. Copy of the Forest Clearance certificate is already uploaded as an annexure during online uploading of proposal for TOR.

(xiii) Project Cost and Employment Generation: The capital cost of proposed project is estimated as Rs. 842.40 Crores. B/C (Benefit-Cost) Ratio: 1.86. Employment potential generated for 25898 Ha irrigable area will be 1320798 man days per year.

(xiv) R&R Details: The land is already in possession of the project proponent. Hence, no R&R issue is involved.

(xv) The project comes under Schedule 1(c)-Category A since it is located in Maharashtra and Madhya Pradesh interstate boundary at 5.7 km in North West from Dam site.

(xvi) Earlier Chronology of Statutory clearances:

a. The proposal was earlier submitted to MoEF&CC for grant of TOR in January 2009, TOR was approved in April 2009.Draft EIA was submitted to SPCB in January, 2010 for conducting Public Hearing. The Public Hearing was held in April, 2010 and January, 2011.
b. The Final EIA was submitted to MoEF&CC for grant of EC. But EC was not granted to the project as the case was not pursued further with MoEF&CC.
c. However, almost more than 50% work has been completed but no operation has been started.

8.3.3 The EAC during deliberations noted the following:

The proposal is for Terms of Reference to Project for Kurha Vadhoda Islampur Lift Irrigation Scheme UPSA Sinchan Yojna with Culturable Command Area (CCA) of 32372 Ha by M/s Tapi Irrigation Development Corporation at Village Rigaon, Tehsil - Muktainagar District Jalgaon (Maharashtra).

EAC deliberatedon the information submitted (Form 2, kml file, etc.) and as presented in the meeting by Project proponent and its consultant.

The scheme envisages lifting of flood water in rainy season from Purna River by constructing intake channel, intake structure, jack well over head pump house. The project contemplates to provide irrigation facilities annually to a Culturable Command Area 32372 Ha with annual irrigation of 25898 Ha through lift irrigation to benefit farmers.

It was noted that Earlier TOR was granted by Ministry in April 2009. Further Public Hearing was conducted in April, 2010 and January, 2011 but it was submitted that project was not pursued further with MoEF&CC for grant of Environment Clearance.

PP has informed that prior to getting EC from MoEF&CC, more than 50% work has been completed but no operation has been started. PP has requested to EAC to grant ToR to this important project for detailed EIA/EMP preparation for further appraisal of the project.

It was noted that PP has started the construction work without getting Environmental clearance and some of the activities have been completed to the extent of 70% on ground.

8.3.4 *The EAC after deliberations observed that Project proponent has violated the EIA Notification, 2006 since project proponent has started construction activity without prior Environment Clearance and from the presentation it was visible that some of the work has been completed to the extent of about 60-70%. Accordingly, it was desired that Ministry may consider taking necessary action on the violation as per law. The EAC also criticized the consultant (M/s Mantec Consultant Private Ltd.) for not bringing the violation facts clearly before the EAC. EAC further observed that though the proposal can be considered under violation category by sectoral EAC, however considering the inconsistency and inadequacy in the submission of details, EAC*

desired that PP may submit the compliance of below mentioned observations for further consideration:

(i) PP shall submit the detailed Lay out of the project & distribution system approved from CWC/State Government.
(ii) PP shall submit the Approved Detailed Project Report
(iii) PP shall submit the details of water availability in terms of quantity in Purna River during lean period.
(iv) PP shall submit the reason for conducting the gross violation of EIA Notification by doing construction prior to grant of EC.
(v) Social and environmental impacts due to diversion of canal.

*The proposal was **returned** on above lines for further submission by the Project proponent.*

Agenda No. 8.4

Anjaw Hydro Electric Project of 270 MW (4 units of 67.5 MW each) as Run of River scheme in an area of 359.12 ha by M/s Lohit Urja Private Limited located in village Supliyang, District Anjaw (Arunachal Pradesh)– Terms of Reference (ToR) – reg.

[Proposal No. IA/AR/RIV/197998/2021; F. No. J-12011/06/2021-IA-I (R)]

8.4.1 The proposal is for Terms of Reference to Anjaw Hydro Electric Project of 270 MW (4 units of 67.5 MW each) as Run of River scheme in an area of 359.12 ha by M/s Lohit Urja Private Limited located in village Supliyang, District Anjaw (Arunachal Pradesh).

8.4.2 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 whichenvisages utilization of discharge of River Lohit, a major tributary of the mighty Brahmaputra. Barrage site is located u/s of the confluence of Dau River with Lohit River.
(ii) Latitude 28°02'34.35"N Longitude 96°34'49.43"E on Lohit River.
(iii) The surface powerhouse is proposed on the right bank of Lohit River just downstream of the barrage. The river bed level at the Barrage site is at EL.550.00 m. Anjaw HEP FRL is proposed at EL.580.0 m.
(iv) The catchment area of Lohit River at the barrage site is 16430 sqkm.
(v) The Project will utilise a net head of 26.09 m and design discharge of about 1164 cumec for generation of 270 MW (4 units of 67.5 MW each). The water conductor system of the Anjaw HEP consists of four individual 8m diameter penstocks coming out of separate power intakes to feed the four units of 67.5 MW each.

(vi) The various components of the project are:

- A 30 m high barrage above crest level with spillway comprising of 8 bays controlled by radial gates.
- River diversion works in two stages with dumped rockfills.
- Four numbers intake chambers comprising of an inclined trash rack on right bank.
- Four nos. of 8 m dia. circular penstocks and the length of each penstock is around 47.70 m.
- A Surface powerhouse of 52.0 m (W) x 183.10 m (L) x 55.0m (H) having 4 units of 67.5 MW vertical Kaplan turbine each, Transformer hall with a facility of GIS.

(vii) The project is scheduled to be completed in 41 months after financial closure. On completion of the project, it will provide 270 MW of peak power with generation of 1080.84 GWh of electricity in a 90% dependable year at 95% machine availability. The plant load factor of this scheme would be about 45.97%. The cost of the project is estimated to Rs.1863.88 Crores at January 2021 price level.

(viii) Land requirement: Total land required for construction of various components, including infrastructure facilities and muck disposal area is estimated to be around 359.12 Ha, out of which 144.15 ha is forest land and 214.97 ha is community private land.The submergence area at FRL is 115 ha, which includes 39 ha of river bed area.

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

(x) Application for diversion of forest land is yet to be filed and same shall be done in stipulated time.

(xi) Project benefit: Project will provide all the benefits of a hydropower projects, Electricity generation of 1080.84 MU in 90% dependable year with free power to the State and for Local Area Development.

(xii) Employment opportunities: It is estimated that during construction period approx. 800-1000 workers/staff and during operation, project is estimated to employ approx. 150-200 manpower. The construction of the project will accelerate economic development in the area and enhance infrastructure facilities in the area. The development of project may promote industrial growth in the region which is otherwise deprived of any industries.

(xiii) Status of other statutory clearances:

- Forest Clearance: Online application will be submitted subsequently thereby seeking forest diversion for around 144.15Ha.
- Hydrology: Approved by CWC vide UO No.4/373/2011-Hyd(NE)/484 dated 16/12/2011
- Power Potential: Approved by CEA for 270 MW installed capacity vide letter No. 2/ARP/47/CEA/11-PAC/4594-95 dated 26/07/2012.

(xiv) R&R Details: Project would require 214.97 has community private land. 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.

8.4.3 The EAC during deliberations noted the following:

The proposal is for Terms of Reference to Anjaw Hydro Electric Project of 270 MW (4 units of 67.5 MW each) as Run of River scheme in an area of 359.12 ha by M/s Lohit Urja Private Limited located in District Anjaw (Arunachal Pradesh).

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 Lohit.

The surface powerhouse is proposed on the right bank of Lohit River just downstream of the barrage. The catchment area of Lohit River at the barrage site is 16430 sq km. The Project will utilise a net head of 26.09 m and design discharge of about 1164 cumec for generation of 270 MW (4 units of 67.5 MW each). Project will provide all the benefits of a hydropower projects, Electricity generation of 1080.84 MU in 90% dependable year with free power to the State and for Local Area Development.

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.

8.4.4 *The EAC after deliberations* ***recommended*** *the proposal for grant of standard Terms of Reference issued by Ministry for Hydro Projects to Anjaw Hydro Electric Project of 270 MW (4 units of 67.5 MW each) as Run of River scheme in an area of 359.12 ha by M/s Lohit Urja Private Limited located in District Anjaw (Arunachal Pradesh), under the EIA Notification, 2006 and its amendment therein along with following Specific Terms of Reference:*

(i) Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines. Private land shall be acquired as per provisions of Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.

(ii) 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.

(iii) Project shall be required to worked out details of ownership of 214.97 ha. community private land.

(iv) E-flow shall be as per CIA&CC study of Lohit River basin.

(v) The EIA study should be undertaken in accordance with recommendation of the Lohit River Basin CIA&CC study.

(vi) The EIA/EMP Report must contain an Index showing details of compliance of all ToR conditions. The Index will comprise of page no. etc., vide which compliance of a specific ToR is available. It may be noted that without this index, EIA/EMP report will not be accepted.

(vii) Impact of developmental activity/project on the wildlife habitat, if any, within study area shall be studied.

(viii) *CAT plan, Dam break analysis, Disaster Management Plan and Fisheries Management Plan be prepared alongwith other EMPs and incorporated in the EIA/EMP report.*

(ix) *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.*

(x) *An undertaking as part of the EIA report from Project proponent, owning the contents (information and data) of the EIA report with the declaration about the contents of the EIA report pertaining to a project have not been copied from other EIA reports.*

(xi) *Consolidated EIA/EMP report is to be submitted as per the generic structure (Appendix III & IIIA) given in the EIA Notification, 2006.*

(xii) *Conservation plan for the Scheduled I species, if any, in the project study area shall be prepared and submitted to the Competent Authority for approval.*

(xiii) *Pre-DPR Chapters viz., Hydrology, Layout Map and Power Potential Studies duly approved by CWC shall be submitted*

(xiv) *Environmental matrix during construction and operational phase needs to be submitted.*

(xv) *Both capital and recurring expenditure under EMP shall be submitted.*

(xvi) *Environmental Cost benefit analysis shall be done.*

(xvii) *Declaration from the Project Proponent that no construction work related to the proposed balance work is taken after 1994.*

The meeting ended with vote of thanks to the Chair.

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Annexure - A

ATTENDANCE LIST

Sr. No	Name & Address	Role	Attendance
1	Dr. K. Gopakumar	Chairman	A
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	A
8	Dr. Narayan Shenoy K	Member	A
9	Shri Balraj Joshi	Acting Chairman	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	P
13	Dr. A. K. Sahoo	Representative of CIFRI	P
14	Dr. Vijay Kumar	Representative of Ministry of Earth Sciences	A
15	Shri Yogendra Pal Singh	Member Secretary	P

APPROVAL OF THE CHAIRMAN

---------- Forwarded message ---------
From: **Balraj Joshi** <balrajjoshi@gmail.com>
Date: Wed, Mar 17, 2021 at 12:09 PM
Subject: Re: draft MOM of 8th EAC (R.V.&H.E.) meeting
To: Yogendra Pal Singh <ypsinghmoef@gmail.com>

Dear Mr. Singh,

As discussed regarding e-flow, we have to ask for a higher of the two flows i.e. as per the CC&CIA study vis-a-vis NGT order . I have made the corrections accordingly.
We may get the corrections incorporated and issue the minutes accordingly.

Best regards
Balraj Joshi