MINUTES OF THE 22ND MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 12TH JANUARY, 2022 FROM 10:30 AM – 3:00 PM THROUGH VIDEO CONFERENCE.

The 22nd 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 12th January, 2022 through video conference, under the Chairmanship of Dr. K. Gopakumar. The list of Members present in the meeting is at **Annexure.**

Agenda Item No. 22.1

Confirmation of the minutes of 21st EAC meeting

The minutes of the 21st EAC (River Valley Hydroelectric Project) meeting held on 23rd December, 2021 were confirmed.

Agenda Item No. 22.2

Khuitam Hydro Electric Project (66MW) in an area of 49.14 Ha located at Village Rahung, Tehsil Dirang Circle, District West Kameng (Arunachal Pradesh) by M/s Adishankar Power Private Limited – Extension of validity of Environment Clearance (EC) – reg. [Proposal No. IA/AR/RIV/248306/2021; F. No. J-12011/49/2009-IA. I]

22.2.1: The proposal is for grant of Extension of validity of Environment Clearance (EC) to Khuitam Hydro Electric Project (66MW) in an area of 49.14 Ha located at Village Rahung, Tehsil Dirang Circle, District West Kameng (Arunachal Pradesh) by M/s Adishankar Power Private Limited**.**

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

i The project is located near Rahung village in West Kameng District of Arunachal Pradesh. The project envisages construction of 19 m high barrage (above river bed level) across river Gang (a tributary of Bichom River) to generate 66 MW of hydropower.

ii Environmental Clearance for Khuitam Hydro Electric Project (66MW) was accorded by MoEF&CC vide letter no J-12011/49/2009-IA. I dated 28th January 2011 with the validity period of 10 years for commencement of construction work.

iii The Full Reservoir Level project is at elevation EL. 1252 m. and Minimum Tail Water Level outlet is at Elevation EL. 1173 M.

iv A surface powerhouse is proposed on the right bank of the river to accommodate 3 units of 22 MW each. The total hard cost of the project excluding escalation and IDC is estimated at Rs 367.74 Crores and the construction period of the project is 42 months.

v The total land requirement is about 49.14 ha out of which about 27.67 Ha. is forest land and about 21.47 Ha. is Private / community land. Total submergence area is of 6.32 ha which includes 2.96 ha of river bed & 3,36 ha surface land. Total catchment area up to diversion site is 1123 sq. km. Stage I forest clearance was accorded for diversion of forest land of 25.91 ha on 6/02/2012.

vi Total 38 nos. of project affected families from 2 villages (Salari and Rahung) are likely to lose their land partially. However, no family is likely to lose homestead.

vii PP submitted the proposal no. dated for extension of validity of EC for further 3 years as per the provision of Environmental Impact Assessment Notification, 2006 and as amended.

viii PP submitted that Project could not commence during the validity of EC due to following reasons:

a. Non availability of Power Purchase Agreement, stalled the project funding. Govt of Arunachal Pradesh or other State Govt did not sign any Power Purchase Agreements in spite of regular and all sincere efforts by proponent.
b. In absence of Power Purchase Agreements, raising the funds for the project from banks and financial institutions became a major issue which delayed the project activities.
c. In general hydropower development scenario in the county from the 2013-14 onwards was not very attractive therefore, project could not secure financing to proceed further. New hydropower policy was awaited, which was released in year 2019 and made provisions for providing adequate funds in the Central/State Government budget for hydropower development and organising supplementary funding through Power Finance Corporation.
d. When the project was being revived during 2019/ early 2020, Covid19 pandemic has lead several lockdowns in the country and business activities got disrupted

ix. Progress of the project/ facilities/ activity after getting environmental clearances (Physical progress) are as under:

a. Private land required for the project was acquired and physical possession of the land is taken on ground from Govt of Arunachal Pradesh
b. Approach Roads for the Power House Area and Surge shaft area were constructed
c. Approach Roads for the Barrage Area were constructed
d. Site Camp at Power House Area was established
e. Rain gauge, weather stations were installed at site

x. **Schedule of completion of the balance activity/ project:** Total construction period for the project as worked out in the DPR is 42 months excluding the period of infrastructure development and mobilisation. As per recent developments in Arunachal Pradesh the State Government has started signing PPAs for IPP projects and a few PPAs have been signed.
PP has applied to the AP government for signing of PPA for Khuitam and the same is progressing speedily. Signing of PPA with Govt of Arunachal Pradesh is in advance stage and will be executed by March 2022. Total time for project completion is about four and a half years. With 3 years EC extension, project activities will continue and during this period, process of EIA study will be initiated for further adequate EC validity till the time of commissioning.

PP has informed during the EAC meeting, one of the major hurdles for development of the project, eventually Govt of Arunachal Pradesh has agreed to sign the Power Purchase Agreement for which PP have already started the process. Process of finalization of PPA with Govt of Arunachal Pradesh is in advance stage and is expected to be finalized by March 2022.

PP further submitted a letter no. CE(COM)/PPA/KHUITAM/106/2021-22/3254-55 dated 18th January, 2022 issued by Department of Power, State of Government of Arunachal Pradesh, which shows that application submitted by the PP for signing of PPA for Khuitam HEP 66MW is under examination of the State Government.

22.2.3: The EAC during deliberations noted the following:

The EAC during deliberations noted that the proposal is for extension in validity of EC dated 28th January, 2011 EC, as project could not commence due to non-availability of Power Purchase Agreement. The has submitted the application for extension of validity within the validity period of existing EC, since the period of validity of EC for River valley and Hydro-electric project is 10 years and extendable upto 3 years.

As informed by the project proponent process of finalization of PPA with Government of Arunachal Pradesh is in advance stage and is expected to be finalized by March 2022.

22.2.4 *The EAC after detailed deliberation on the information submitted and as presented during the meeting* ***recommended*** *for grant of extension of Environmental Clearance to Khuitam Hydro Electric Project (66MW) in an area of 49.14 Ha located at Village Rahung, Tehsil Dirang Circle, District West Kameng (Arunachal Pradesh) by M/s Adishankar Power Private Limited, under the provisions of EIA Notification, 2006, as amended.*

Agenda Item No. 22.3

Sach Khas HEP (288 MW) as a Run of the River in an area of 125.5 ha located at Village Sach Khas, Tehsil Pangi, District Chamba (Himachal Pradesh) by M/s SJVN Limited – Terms of Reference - reg.

[Proposal No. IA/HP/RIV/248432/2021; F. No. J-12011/01/2022-IA.I (R)]

22.3.1: The proposal is for grant of Terms of Reference (TOR) to Sach Khas HEP (288 MW) as a Run of the River in an area of 125.5 ha located at Village Sach Khas, Tehsil Pangi, District Chamba (Himachal Pradesh) by M/s SJVN Limited.

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

i The Sach Khas Hydro Electric Project is located about 54 km downstream of Udaipur in the Chamba district of Himachal Pradesh on the Chenab River. The Chenab River is one of the principal rivers originating and flowing through Himachal Pradesh and then through Jammu & Kashmir eventually meeting the Indus in Pakistan.

ii The project is located between the proposed Purthi Hydro Electric Project in the upstream and the proposed Dugar Hydro Electric Project in the downstream. The dam site is proposed slightly upstream of Sach khas village (close to the Cheninala confluence with the Chenab River) and the underground powerhouse structure at the toe of the dam is proposed on the right bank. The project is located at longitude 76°25’30” E and latitude 32°57’55” N.

iii The project is situated on Chenab River, having its dam and powerhouse site near Sach Proposed project is a run of the river type project proposed to harness the hydel potential of

river Chenab. The diversion structure is located at about 54 km downstream of Udaipur town in Chamba district near Sach Khas village.

iv The project diversion structure with underground toe power house are proposed to be located about 9.5 km downstream of tail race outfall of Purthi HEP (in S&I stage) with a free flow of 1.7 km in between these projects.

v Further, a free flow stretch of 10 km will also be available between downstream Dugar HEP (under S&I Stage) and outfall of proposed Sach Khas HEP.

vi **Project Background**:

a) Sach Khas HEP earlier allotted to M/s L&T Himachal Hydropower Limited.
b) Environmental Clearance was recommended by the EAC in its 76th meeting held on 11th August, 2014 for 267 M.
c) Project re-allotted to M/s SJVN Ltd. on 05.01.2021.
d) Project capacity enhanced from 267 MW to 288 MW due to change in Hydrology.
e) No change in Dam location, height, FRL, TWL envisaged.

vii **Project Components:**

a) **Dam:** A ±77 m high, concrete gravity dam from river bed level (±2145.0 m) is proposed across the Chenab River. The Full Reservoir Level has been kept at 2219.0 m and Minimum Draw Down Level at El. 2213.0 m. Length of Dam at Top- 225M
b) **River Diversion**: River Diversion Discharge- 983 m3 /sec, Length of Diversion Tunnel- ± 595.0 m. Diameter and shape of Diversion Tunnel-10.5m Horse Shoe Shape.
c) **Intake:** Independent intake structure in reservoir with 6 openings is proposed to divert design discharge of 391.26 m3/sec (Main units) and environmental discharge of 95.64 m3/sec (Auxiliary Units) to feed 3 main units of 77 MW each and 3 auxiliary units of 19MW each in underground power house.
d) **Penstock:** 3 nos. individual penstocks for each unit have been proposed to pass total discharge of 391.26 m3/sec. The penstocks for main units shall commence just after intake transition from 5.4 m (W) X 7.5 m (H) to 6.5 m dia. circular, at center line elevation of 2202.25 m.
e) **Power House Site**: Underground power house having size of 155.0 metre (L) x 23 metre (W) x 51 metre (H) shall be provided on the right bank. The main unit having 3 Francis turbine units of 77 MW capacity each is being designed for a design discharge of 391.26 cumecs (130.42 cumecs for each unit). An auxiliary unit having 3 Francis turbine units of 19 MW each has also been planned with a discharge capacity of intake of 95.64 cumecs (31.88 cumecs for each unit). Water shall be released back into the river through a 2-tail race tunnel of 10 m and 5.2 m dia horse shoe shape of lengths 469.8 meters and 581.6 meters respectively**.**

viii **Land requirement:** The tentative land requirement for the project is estimated to be 125.5 ha out of which 121.5 ha is forest land and 4.00 ha is private land. The application for diversion of forest land is yet to be submitted. The estimated project cost is Rs. 2962.13 Cr.

ix **Submergence Area:** Construction of dam will result in submergence of about 83 ha with minimal displacement.

x **Ecological Sensitive Area:** The project is not located within the Eco- sensitive Zone (ESZ) of Sechu Tuan Nala Wildlife Sanctuary and falls at an aerial distance of about 6.0 km. from outside the ESZ boundary.

xi **Inter-State/International Aspects:** The Chenab flows through the Indian states of Himachal Pradesh and Jammu & Kashmir. The Sach Khas project catchment is entirely within Himachal Pradesh. However, the Chenab river is one of the major tributaries of the Indus river system and the water resources development of the Indus system of rivers is governed by the Indus Water Treaty 1960 signed by the Government ofIndia and Government of Pakistan. Therefore, the design and development of the Sach Khas Hydroelectric Project is governed by the Indus Water Treaty.

xii **Seismicity:** As per BIS: 1893:2002: Part-I, the project area lies in an active seismic zone-IV of the Seismic Zoning map of India.

Important seismic events which have taken place within a radius of 500 km from the project area, in the past 150 years, include the 1905 Kangra Quake (magnitude 8+), the 1908 Kullu Quake (magnitude 6.0), the 1945 and 1947 Chamba Quakes (Magnitude 6.5 and 6.6), the 1975 Kinnaur quake (magnitude 6.8), the 1991 Uttarkashi earthquake (magnitude 6.6) and the 1999 Chamoli earthquake (magnitude 6.8).

xiii **Environmental releases (E-flows**):

The CEIA (Cumulative Environment Impact Assessment) study of Chenab Basin, suggested environmental flow for all projects proposed on river Chenab, wherein for Sach Khas HEP e-flows was suggested as below:

Seasons	**Environment Flows (in cumecs)**
High Flow Period (June Sept)	The 20% of average discharge of High Flow Period in 90% Dependable Year. (95.64cumes)
Intermediate Period (Oct and May)	25% of average discharge of Intermediate Period in 90% Dependable Year. (35.38cumecs)
Low Flow Period (Nov- Apr)	25% of average discharge of Low Flow Period in 90% Dependable.17.05 cumecs

xiv **Alternative sites:**

The layout of Sach Khas HEP has been finalized based on the site visit, reconnaissance survey and surface geology and the different alternate layouts are identified as below:

a) Alternative -1: Diversion Site About 2.5km Downstream of Moknanala with U/G Power House at Sach Khas Village

As per this alternative, the water of the river Chandra-Bhaga is proposed to be diverted into a water conductor system for generation of power in an underground powerhouse located near Sach Khas village. The diversion site is located 2.5km downstream of the confluence of MOKNANALA with the river Chenab. The river bed level at the proposed diversion site is El. ±2172.0m, based on the survey data. The FRL envisaged for the scheme was El. 2219m. A design discharge of 466.66 cumecs (including 20% for desanding chamber) is proposed to be led through the power intake located on the right bank into three feeder tunnels. Each feeder tunnel leads into a 315m long desanding chamber. The water through each desanding chamber is let into a link tunnel through a transition placed at right angles to the desander alignment. The three link tunnels join to form a single Head Race Tunnel about 1.6km long and 10.0m in diameter, which feed an underground powerhouse located near Sach Khas village which is close to the allotted tail

water level of 2149m. However, the water conductor system requires a huge Surge shaft of more than 50m diameter to cater to the surges arising in the system.

This layout was rejected due to following reasons: -

- Surge shaft of large diameter of more than 50m diameter required which will pose construction difficulties.
- As underground surge shaft of such large diameter is not feasible so there shall be larger requirement of forest land for surface surge shaft located in the thick forest area.
- Geology in the proposed intake area is not favourable and would require extensive excavation which would endanger the Killar – Tindi Road

b) **Alternative-2: Diversion Site About 3.35 Km Downstream of Moknanala with U/G Power House at Sach Khas Village**.

In this alternative, all the components are proposed on the left bank from geological considerations, as the rock mass on the right bank is mostly comprised of poor phyllitic rock and prima facie found not suitable for locating an underground power house complex. At this site, scheme comprises a ±55m high concrete gravity dam above the river bed level (EL 2167m). An underground power house is proposed in the left bank d/s of the Bakhanwal Nala. The water from the powerhouse is led back into river through a 2.8 km long tail race tunnel. In view of the long TRT, provision of a D/s surge gallery has to be made. Also, in order to maintain the required pondage in the reservoir, sufficient gap (25m) between Sluice crest and Intake invert shall not be available. This shall require provision of large underground desilting chambers.

After due considerations, this site was not found suitable from technoeconomic considerations and discarded for further detailed investigations due to the following reasons:

- All the components of the project are located on the left bank whereas, the State highway runs along the right bank of the river, necessitating the construction of a number of long bridges and roads to approach the various components on the left bank resulting in longer construction period and higher costs.
- With the invert of power intake close to the sluice spillway crest, sediment management would require the provision of large sized underground desilting chambers. Also due to the presence of Bakhanwala Nallah just downstream of dam, crossing of nallah would be challenging task.

c) Alternative-3: Diversion Site About 5.85km Downstream of Moknanala with Underground Dam Toe Power House

Based on the different alternate layouts explored, this scheme with diversion site 2.5 km downstream of diversion site of layout-2 and 1100m upstream of CheniNala is the most suited one, from the consideration of domain allotted by Government of Himachal Pradesh. This layout is consistent with the allotted tail water level of El. 2149m, the bed level of the river is at about El. 2145m. An underground powerhouse is proposed on the right bank of dam axis. Further, to take care of the mandatory environmental flows, scheme envisages releasing these required flows through 3 e-flow units of 19 MW each housed in the main power house cavern. The maximum environmental discharge of 95.64 cumecs during peak flow period shall be released while running all units and minimum environmental discharge of 18.14 cumecs during lean flow period shall be released while running single e- flow unit. Independent intake structure is proposed in this alternative to cater to the main and auxiliary units through independent penstocks.

After carrying out studies, Alternative-3 has been finalized.

d) **Alternative-4: Diversion Site About 6.35km Downstream of Moknanala.**

This alternative is studied considering a diversion site 500m downstream of diversion site of layout-3 and 300m upstream of CheniNala confluence with the Chenab. This layout is schematized on the right bank. The bed level at this location is at El. 2142.0m, which is 7m below the allotted levels. Although, there are no schemes planned across Chenab, immediately below Sach Khas, except for Duggar HEP which is far below. This location is thus avoided as the bed levels are much below than the allotted levels for the project. Study For Power House Underground power house having size of 155.0 metre (L) x 23 metre (W) x 51 metre (H) shall be provided on the right bank. The main unit having 3 Francis turbine units of 77 MW capacity each is being designed for a design discharge of 391.26 cumecs (130.42 cumecs for each unit). An auxiliary unit having 3 Francis turbine units of 19 MW each has also been planned with a discharge capacity of intake of 95.66 cumecs (31.88 cumecs for each unit). Water shall be released back into the river through a 2-tail race tunnel of 10 m and 5.2 m dia horse shoe shape.

xv **Project Benefits:**

a) Capacity addition of 288 MW in the Northern Region and reducing peaking power shortage in the region. Annual generation (design energy) of 1027.42 GWh (770.14 GWh from the main plant and 257.28 GWh from auxiliary plant).
b) Integrated development of Chamba region in the areas of employment, communication, education, health, tourism etc.
c) Out of 13% free power to the home state Himachal Pradesh, 1% shall be utilized for contribution towards local area development.

xvi **R&R Details**: R&R plan in respect of acquisition of 4.00 ha private land will be as per Land Acquisition, Rehabilitation and Resettlement Act, 2013.

During the meeting the EAC sought reasons for enhancement of scheme from 267 MW to 288 MW. PP vide letter dated 14th January, 2022 informed that increase in installed capacity is due to change in hydrology and the power potential study has also been approved by the Central Electricity Authority for 287 MW vide its letter dated 30th December, 2021.

The increase in capacity of Sach Khas HEP are due to the following reasons:

The project was recommended for EC in August 2014, with an installed capacity of (3x86.67 + 1x7) 267 MW. The installed capacity is (3X77+56) 287 MW in the current proposal.

1. **Change in the water availability series**: The latest approved water availability series at Sach Khas HEP is for the period from 1985-86 to 2018-19 (34 years) whereas the water availability series for 267 MW was different.

2. **Change in Dependable year**: Due to the change in water availability series, the 90% dependable year has changed from 1993-94 to 1997-98 resulting in different discharges for capacity calculation.

3. **Change in environmental flows**: Cumulative Environmental Impact Assessment (CEIA) study of Chenab River basin conducted in 2015, has recommended environmental flows for all projects in Chenab Basin in the state of Himachal Pradesh. The recommended e-flows for Sach Khas HEP 267 MW scheme and of present 287 MW scheme are tabulated below:

Table showing recommended vs considered e-flows for Sach Khas HEP

Season	Recommended Environment Flows (CIA study)	Calculated Environment Flows (for 90% dependable year)	Considered Environment Flows (for capacity calculation)
High Flow Period (June-Sept)	**20%** average discharge of High Flow Period in 90% Dependable Year **(95.64 cumecs)**	**20%** average discharge of High Flow Period in 90% Dependable Year **(89.225 cumecs)**	**95.64 cumecs**
Intermediate Period (Oct and May)	**25**% average discharge of Intermediate Period in 90% Dependable Year **(35.38 cumecs)**	**25%** average discharge of Intermediate Period in 90% Dependable Year **(49.12 cumecs)**	**49.12 cumecs**
Low Flow Period (Nov-Apr)	**25%** average discharge of Low Flow Period in 90% Dependable Year **(17.05 cumecs)**	**25%** average discharge of Low Flow Period in 90% Dependable Year **(17.87 cumecs)**	**17.87 cumecs**

4. **Difference in Main & Auxiliary Plant capacity**: Due to the higher e-flows and lesser available design discharge, capacity of Main plant has reduced from 260 MW to 231 MW. However, due to increase in e-flows and for optimal utilization of e-flows, capacity of Auxiliary plant has increased from 7 MW to 56 MW. Thus, due to the improved hydrology, the total capacity of the plant has only increased by 20 MW i.e. (267 MW vs 287 MW). There is no change in dam location, project features, operating levels i.e FRL, MDDl, TWL, etc., dam type etc. The land to be acquired also remains unchanged.

Table showing comparison of salient features of previous scheme and proposed scheme for Sach Khas HEP

Project Features	Parameters	Previous Scheme (267 MW)	Present Scheme (287 MW)	Remarks
Proponent		M/s L&T Himachal Hydropower Ltd.	M/s SJVN Ltd.	**Changed**
Location	District	Chamba	Chamba	
	Longitudes	**76 deg 25' 30.143" - 76 deg 25' 3.8" E**	**76 deg 25' 30" E**	
	Latitudes	**32 deg 57' 55.123" - 32 deg 58' 7.5" N**	**32 deg 57' 55" N**	
Land requirement	Ha.	125.62	125.5	**Changed**
Diversion Structure	Type	Concrete Gravity Dam	Concrete Gravity Dam	
	Dam Height	**77 m.**	**77 m.**	
	Average RBL	**2145 m.**	**2145 m.**	

	FRL	**2219 m.**	**2219 m.**	
Powerhouse	Type	Underground (Right bank + Secondary surface PH on left bank)	Underground (Right Bank)	**Changed**
	Turbine	Francis	Francis	
	Net Head/Rated head (m)	66.86 m.	65 m.	**Changed**
	Installed Capacity (MW)	267 MW (260 MW Main and 7 MW auxillary)	287 MW (231 MW + 56 MW)	**Changed**
	Design Discharge	428.12 cumecs for Main Units + 12 cumecs for Auxiliary units	391.26 cumecs for Main units + 95.64 cumecs for auxiliary units)	
	Tail Water Level (Normal) (m)	**2149 m.**	**2149 m.**	
Design Energy		999.92 GWh	1027.42 GWh (770.14 + 257.28)	**Changed**

Environmental Flows	90% Dependable year	1993-94	1997-98	**Changed**
	Period	**As per CIA Study**	**As per Present Scheme**	
	High Flow Period (June - Sept)	95.64 cumecs (20%)	20% (89.23 cumecs according to calculations; but being taken as 95.64 cumecs, i.e., Higher side)	**More than recommended e-flow being released**
	Intermediate Period (Oct and May)	35.38 cumecs (25%)	25% (49.12 cumecs)	**More than recommended e-flow being released**
	Low Flow Period (Nov-Apr)	17.05 cumecs (25%)	25% (17.87 cumecs)	**More than recommended e-flow being released**

22.3.3: The EAC during deliberations noted the following:

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 the river type project proposed to harness the hydel potential of river Chenab.

The EAC noted that total land requirement for the project is 125.5 ha out of which 121.5 ha is forest land and 4.00 ha is private land. An area of 83 ha. Land will be submerged due to project construction. The project does not fall within the Eco- Sensitive Zone (ESZ) of Sechu Tuan Nala Wildlife Sanctuary. An aerial distance of Project is about 6.0 km. from outside the ESZ boundary.

It was further noted that the project was recommended by the EAC in its 76th meeting held on 11th August, 2014 for 267 MW (same capacity was recommended in CIA/CSS of Chenab River basin study) which was allotted to M/s L&T Himachal Hydropower Limited. Now as project is re-allocated to M/s SJVN Ltd. on 05.01.2021, PP submitted the fresh proposal with enhanced capacity from 267 MW to 288 MW due to improvement in Hydrology of the project. It was also noted that only **287 MW of capacity was approved by the CWC and CEA.**

Due to the higher e-flows and lesser available design discharge, capacity of Main plant has reduced from 260 MW to 231 MW. However, due to increase in e-flows and for optimal utilization of e-flows, capacity of Auxiliary plant has increased from 7 MW to 56 MW. Thus, due to the improved hydrology, the total capacity of the plant has only increased by 20 MW i.e. (267 MW vs 287 MW). There is no change in dam location, project features, operating levels i.e FRL, MDDl, TWL, etc., dam type etc. The land to be acquired also remains unchanged.

It was further noted that in present proposal there is no change in design parameters of the proposal w.r.t. submitted and recommended in year 2014. The EC was not granted after recommendation of the EAC due non-submission of Stage I forest clearance at that time. The EAC also observed that the E-flow which has been recommended in the CIA/CSS study of Chenab river basin is being maintained and PP has committed to maintain the same E-flow for future even after proposed change in power generation capacity from 267 MW to 288 MW.

It was also note that as per CIA/CSS of Chenab River basin study nearly 84% of the project impact area is under High to Very High Biological Richness category with more than 100 years old Deodar and kail large sized tress.

22.3.4 *The EAC after detailed deliberation on the information submitted and as presented during the meeting* ***recommended*** *for grant of Standard ToR Sach Khas HEP (288 MW) in an area of 125.5 ha located at Village Sach Khas, Tehsil Pangi, District Chamba (Himachal Pradesh), under the provisions of EIA Notification, 2006, as amended subject to fulfilment of condition mentioned in CIA/CSS of Chenab River basin study along with the following additional/specific ToR:*

(A) Environmental Management and Biodiversity Conservation

i *Certificate and certified map from Chief Wildlife Warden shall be submitted mentioning that project boundary is located around 6.0 km. from outside the Eco- sensitive Zone (ESZ) of Sechu Tuan Nala Wildlife Sanctuary and also project site not falling in any Ecological Sensitive Area, Wildlife Sanctuary/Tiger/elephant corridor/Critically polluted area within 10 km of Project site.*

ii *The project involves diversion of 121.5 ha of forestland. Forest clearance shall be obtained as per the prevailing norms of Forest (Conservation) Act, 1980. Application to obtain prior approval of Central Government under the Forest (Conservation) Act, 1980, for diversion of forestland required, should be submitted as soon as the actual extent of forestland required for the project is known, and in any case, within six months of issuance of this letter.*

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

iv *The EIA study should be undertaken in accordance with recommendations of the Chenab River basin study and the project parameters/salient features of the project such as Dam height, FRL, Submergence area, total land requirement, e flow etc. as discussed/deliberated during the Chenab River basin study should remain unchanged.*

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

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

vii *Environmental matrix during construction and operational phase needs to be submitted.*

viii *Matrix formulated on the basis of detailed study and field survey of flora and Fauna methodology used shall be mentioned in the EIA report.*

ix *Endemic plant and animal species found in the area concerned shall be provided instead listing entire endemic species found in the State.*

x *Details of Flora and Fauna reported in submergence area, Nos. of tree along with their density and nomenclature required to be cut for reservoir creation and other project component.*

xi *Fisheries Management Plan shall be prepared along with other Environmental Safety Measures for small stream/Nallah, Thandava Reservoir and Thandava River.shall be incorporated in the EIA/EMP report.*

(B) Socio-economic Study

xii *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. 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.*

xiii *Tentative no. of project affected families displaced due to acquiring of private land shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared.*

xiv *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.*

(C) Muck Management

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

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

xvii *Details of water sprinkling arrangement for arresting the fugitive / dust, emission from transportation and other project activities in project construction area.*

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

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

(D) Disaster Management

xx *CAT plan, Dam break analysis, Disaster Management Plan and Fisheries Management Plan be prepared along with other EMPs and incorporated in the EIA/EMP report.*

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

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

(E) Miscellaneous

xxiii *Both capital and recurring expenditure under EMP shall be submitted.*

xxiv *DPR of the project for 288MW power generation capacity duly approved by the CWC and CEA be submitted.*

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

xxvi *Arial view video of project site shall be recorded and to be submit.*

xxvii *The salient features to be intimated to the Indus water commission.*

Agenda Item No. 22.4:

Gond Major Irrigation Project (CCA 28,000 Ha) In District Singrauli Madhya Pradesh by M/S Madhya Pradesh Water Resources Department – Reconsideration of Environmental Clearance (EC) - reg.

[Proposal No. IA/MP/RIV/69923/2017; F. No. J-12011/33/2017-IA.I (R)]

22.4.1: PP vide email dated 10th January 2022 informed the ministry that they are not ready for the presentation in the present meeting accordingly the EAC decided to **defer** the proposal.

The meeting ended with vote of thanks to the Chair.

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ANNEXURE

ATTENDANCE LIST

Sr. No.	Name & Address	Role	Attendance
1.	Dr. Uday Kumar R.Y.	Member (Chairman)	P
2.	Dr. A. K. Malhotra	Member	P
3.	Dr. N. Lakshman	Member	P
4.	Dr. Narayan Shenoy K	Member	P
5.	Shri Balraj Joshi	Member	P
6.	Shri Sharvan Kumar	Member (Representative of CEA)	P
7.	Shri A. K. Singh	Representative of CWC	P
8.	Shri Yogendra Pal Singh	Member Secretary	P

APPROVAL OF THE CHAIRMAN

Email

Re: Draft corrected Minutes of 22th EAC meeting held on 12th January, 2022 for aprproval-reg

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From : udaykumarry@yahoo.com
Subject : Re: Draft corrected Minutes of 22th EAC meeting held on 12th January, 2022 for aprproval-reg
To : Yogendra Pal Singh <yogendra78@nic.in>
Cc : Munna Kumar Shah <munna.shah@gov.in>, Sourabh Kumar <sourabh.9@govcontractor.in>, mkkd@rediffmail.com
Reply To : Udaykumar R Yaragatti <udaykumarry@yahoo.com>

Dear Yogendra ji,
I approve the minutes of meeting.

-Udaykumar

Sent from Yahoo Mail on Android

On Thu, 27 Jan 2022 at 11:54 am, Yogendra Pal Singh <yogendra78@nic.in> wrote:

> Dear Sir,
> Please find attached Draft corrected Minutes of 22th EAC meeting held on 12th January, 2022 for approval.
>
> With Regards,
>
> **Yogendra Pal Singh**
> **Scientist 'E'**