MINUTES OF THE 34TH MEETING OF THE EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDROELECTRIC PROJECTS HELD ON 14TH SEPTEMBER, 2022 FROM 10:30 AM – 2:00 PM THROUGH VIDEO CONFERENCE.

The 34th 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 14th September, 2022 through video conference, under the Chairmanship of Dr. K. Gopakumar. The list of Members present in the meeting is at **Annexure-I.**

Agenda Item No. 34.1

Confirmation of the minutes of 33rd EAC meeting

The minutes of the 33rd EAC (River Valley Hydroelectric Project) meeting held on 29th August, 2022 were confirmed.

Agenda Item No. 34.2

Palamuru Rangareddy Lift Irrigation Scheme (Phase II: Irrigation) in Districts of Mahbubnagar, Rangareddy & Nalgonda, Telangana by M/s Irrigation and CAD Department, Government of Telangana – Environmental Clearance (EC) - reg.

[Proposal No. IA/TG/RIV/289525/2017; F. No. J-12011/31/2017-IA.I (R)]

34.2.1: The proposal is for grant of Environment Clearance (EC) to the project for Palamuru Rangareddy Lift Irrigation Scheme (Phase II: Irrigation) of Culturable Command Area of 497976 Ha in Districts of Mahbubnagar, Rangareddy & Nalgonda, Telangana by M/s Irrigation and CAD Department, Government of Telangana.

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

i. Palamuru Rangareddy Lift Irrigation Scheme has been planned to be executed in two phases. Phase-I envisages to provide drinking water supply, while Phase-II has been conceived purely for irrigation.

ii. The Phase-I of project involves construction of six balancing reservoirs - Anjanagiri, Veeranjaneya, Venkatadri, Kurumurthyraya, Udandapur and K.P Lakshmidevipally and 5 stages of lifting ((Total Static head=558.8m)) and then utilizing water by gravity. It has been postulated to lift during the flood season from the fore shore of Srisailam Reservoir on Krishna River, to the tune of 90 TMC of which, around 82.52 TMC has been reserved for irrigation purpose,7.15 TMC and 0.33 TMC for domestic and industrial use respectively.

iii. Phase-II, has been conceived to harness water stored in proposed reservoirs under Stage-I to irrigate culturable command area of 4,97,976 ha upland areas covered under 1226 villages of 70 mandals of draught prone districts Mahabubnagar, Narayanpet, Rangareddy, Vikarabad, Nagarkurnool and Nalgonda, by constructing thirteen lined main canals of combined length of 915.47 km. taking off from four reservoirs (Venkatadri, Kurumurthyraya, Udandapur and K.P Lakshmidevipally). The proposed Kharif irrigation shall be 485837 ha (99.57%) and Rabi irrigation 77886 ha (15.64%), with annual irrigation intensity of 115.20%.

iv. The Salient Features of works under Phase-I

S.	Reservoir	Reservoir Details	Lift Details

No.		Length (km)	Max. Height (m)	FRL	Live Storage (TMC)	Open canal (km)	Tunnel (km)	Number Of Pumps	Q of each pump (cumec)	Static Head (m)	Power (MW)
1.	Anjanagiri	11.020	74.00	345.00	7.950	2.205	0.876	8+1	85	104	1160
2.	Veeranjaneya	12.400	38.00	445.00	5.955	8.575	15.891	9+1	75	124	1305
3.	Venkatadri	15.230	57.00	542.00	16.24	6.400	21.475	9+1	75	121	1305
4.	Kurumurthiyraya	14.125	61.00	531.00	16.63	12.050	0.0	-	-	0.00	0.0
5.	Udandapur	15.825	57.995	629.00	15.58	1.435	8.935	5	75	122	725
6.	KP Lakshmidevipally	6.050	51.00	670.00	2.26	19.825	14.400	3	55	87.5	225
Total		74.650				50.49	61.577	34+3		558.5	4720

v. The salient Features of works under Phase-II

S. No.	Features		Description			
1	Gross Command Area (GCA)		8,83,945 ha			
2	Culturable Command Area (CCA)		4,97,976 ha			
3	District wise GCA /CCA/number of villages					
(i)	Mahabubnagar		178743ha / 95271 ha/247			
(ii)	Rangareddy		242,358ha / 145,363ha/330			
(iii)	Vikarabad		253,015ha / 138,442ha/417			
(iv)	Nagarkurnool		69,839ha / 41,858ha/61			
(v)	Nalgonda		20,827ha/ 11,878ha/16			
(vi)	Narayanpet		119162 ha/65164 ha/155			
4	Number of Village/ Mandal Benefitted		1226/70			
5	Existing Cropping Pattern					
(i)	Kharif		3,56,945 ha (71.68%)			
(ii)	Rabi		44,6601ha (8.97%)			
(iii)	Annual		4,01,606ha (80.65%)			
6	Proposed Cropping Pattern					
(i)	Kharif		4,95,837ha (99.57%)			
(ii)	Rabi		77,886 ha (15.64%)			
(iii)	Annual		5,73,723ha (115.20%)			
7	Canals					
(i)	Type of Canals		Unlined Canals			
(ii)	Nunber of Main canals/Length		13No./915.47 km			
(iii)	Canal wise length/CCA/					
(iv)	Name of CANAL	Length (km)	CCA (ha)	Q (cumec)	B.W. (m)	FSD (m)
	Venkatadri Low Level Canal	29.60	6,478	7.035	5.80	1.30
	Venkatadri Main Canal	152	47,368	47.84	14.40	2.80
	Kurumurthyraya High Level Canal	108	61,134	62.68	16.50	3.00
	Kurumurthyraya Left Low Level	36	12,551	12.99	7.75	1.55
	Hanwada Canal	22.74	11775	8.02	3.10	1.90
	Madur Canal	113.2	69601	68.75	15.50	3.00
	Udandapur 1R-Main Canal	4.6	3,644	3.887	5.00	1.20
	Udandapur 2R-Main Canal	72	57,490	63.04	11.00	3.60
	Udandapur Left Main Canal	137.73	48,583	130.61	17.00	5.00
	Udandapur South Main Canal	25	12,146	15.000	6.00	1.75

S. No.	Features		Description			
	KPL East Main Canal	106	81,296	97.712	14.00	4.10
	KPL North Main Canal	89	72,065	72.832	13.00	3.37
	KPL South Main Canal	19.6	13,846	15.04	5.25	2.10
8	Project Cost &BC Ratio					
(i)	Total Cost		Rs. 55,086.57 Crores			
(ii)	B.C. Ratio		1.26:1			

vi. No National Park, Sanctuary, Defence Establishments, Archaeological Monuments, Notified Eco-sensitive areas or protected area under Wild Life (Protection) Act exists within 10 km distance from the command area under Phase-II. Wildlife clearance is also not warranted for Phase-I works, as the nearest distance of the project component is 11.95km from Amarabad WLS and 2.56km from buffer area of Amarabad Tiger reserve (Rc.No.6531/2016/FCA-1/TS, dt; 20.12.2016). No dynamic land slide/slips have been observed along the alignment of main canals. No major occurrence of economic deposit (major mineral) has been found in the canal alignment area.

vii. **Salient features of Palamuru Rangareddy Lift Irrigation Scheme are as follows:**

Project Details

Name of the Proposal	Palamuru Rangareddy Lift Irrigation Scheme,Telangana
Proposal No.	IA/TG/RIV/67770/2017
Location (Including Coordinates)	Mahabubnagar, Narayanpet, Nagarkurnool, Rangareddy, Vikarabad and Nalgonda Districts of Telangana State. Head works-Near Yellur (V), Kollapur(M), Mahbubnagar (D). Head works :$16^0$5'N, $78^0$54' E
Company's Name	Irrigation and Command Area Development (I&CAD), Telangana
CIN no. of Company/user agency	
Accredited Consultant and certificate no.	Voyants Solution Pvt. Ltd., Gurugram-122001. NABET Certificate No: NABET/EIA/2124/RA 0223 dated 30.12.2021, valid up to 14th Sep. 2024
Project location (Coordinates /River/Reservoir)	$16^0$26'54"N to $17^0$38'09"N 77°21'51"E to 78°54 23"E
Inter- state issue involved	No
Proposed on River/ Reservoir	Srisailam Reservoir across River Krishna
Type of Hydro-electric project	Lift Irrigation Scheme from existing reservoir
Seismic zone	Zone II (Low Damage Risk Zone)

Category Details

Category of the project	A
Capacity / Cultural command area (CCA)	4,97,976 ha
Attracts the General Conditions (Yes/No)	No
Additional information (if any)	-

ToR/EC Details

ToR Proposal No.	IA/TG/RIV/67770/2017
EAC meeting date	22.9.2017
ToR Letter No.	J-12011/31/2017-IA-1 (R), dated 11-10-2017
ToR grant Date	11.10.2017
Cost of project	Rs. 55,086.57 Crores
Total area of Project	8,83,945 ha
Height of Dam from River Bed (EL)	No dam/barrage is involved under Phase-II. However, maximum height of six reservoirs under Phase-I ranges from 38m to 74m from bed level
Details of submergence area	No submergence area under Phase-II. Under Phase-I submergence is 1006.64 ha
District to provide irrigation facility (if applicable)	Mahabubnagar, Narayanpet, Nagarkurnool, Rangareddy, Vikarabad and Nalgonda Districts
Details of tunnels on upper level & lower level and length of canal (if applicable)	No tunnels are involved in Phase-II works. Length of main canals: 13No./915.47 km Tunnels under Phase-I- 5No. (61.557 km)
No. of affected Village.	1226
No. of Affected Families	Under Phase-I :11179 Under Phase-II :14891 (including 5284 displaced) Total : 26070
Project Benefits	Project benefits *inter alia* shall include the benefits like (i) Irrigation potential shall be created in area (4,97,976ha), (ii) Improved Market Facilities (70 No. Market Sheds) and road, (iii) Employment Potential (Temporary employment during construction 7000; Permanent employment during operation 300 and Temporary employment during operation 200), (iv) Sustained Water Availability for Agriculture (82.515 TMC), (v) Increased Green cover by planting 14.82 lakh saplings along canal bank.
R&R details	Private land Ph-I :9885.10; Ph-II:13092, Total 22977.10 ha PAF: Phase-I :14891, Phase-II :14891, Total :26070 Displaced families: Ph-I :5284, Ph-II :0, Total :5284 Land Acquisition Cost: Rs 255642.03 lakh R&R Grants: Rs 54785.60 lakh Infrastructure amenities in R&R colonies: Rs 4411.31 lakh Total: Rs 314838.97 lakh
Catchment area/ Command area	GCA: 8,83,945 ha; CCA 4,97,976 ha
Types of Waste and quantity of generation during construction/Operation	MSW-125.33Ton/annum during construction and 82.12 Ton/annum during operation
Material used for blasting and its composition as per DGMS standards	Ammonium Nitrate Fuel Oil (ANFO), a mixture of ammonium nitrate and fuel oil.
E-Flows for the Project	No new tapping of rivers is conceived in PRLIS Phase-II works as the project activities shall involve construction of main canal, branches and distribution system, the case for release of environmental flow from canals does not arise.

Is Projects earlier studied in Cumulative Impact assessment & Carrying Capacity studies (CIA&CC) for River in which project located. If yes, then c) E-flow with TOR/Recommendation by EAC as per CIA&CC study of River Basin. d) If not the E-Flows maintain criteria for sustaining river ecosystem.	No Not applicable Water from foreshore of Srisailam Reservoir shall be lifted in monsoon, when river discharges are of higher order.
Details on provision of fish pass	
Project benefit including employment details (no of employee)	Benefits from project already stated at S.N.4(13) Temporary employment during construction 7000 Permanent employment during operation 300 Temporary employment during operation 200
Area of Compensatory Afforestation (CA) with tentative no of plantation.	Nil under Phase-II as no diversion of forest land is involved for main canal and distribution system.
Previous EC details	None, as EC is yet to be granted
EC Compliance Report by R.O, MOEF&CC	Not applicable

Electricity Generation Capacity

Powerhouse Installed Capacity	Nil
Generation of Electricity Annually	Nil
No. of Units	None

Muck Management Details:

No. of proposed disposal area/ (type of land- Forest/Pvt land)	Spoil banks shall be laid on either bank in approximately 360km length of main canals. and shall be within the ROW of Main Canals under Phase-II. For Phase-I works shall be disposed in 3714 ha area.
Cross section of proposed muck area, height of muck with slope.	Cross sections of outer bank in filling reach of canal, partially cut and fill sections have been provided in Figure 10.8 of EIA/Emp report. Height of Spoil banks on both banks shall be kept maximum as 6m, top width 6m and side slope 2:1.
Distance of muck disposal area(location), from muck generation sources (project area)/River, HFL of proposed muck disposal area.	Approximately 1km to 3.0km from excavation section to spoil bank sites/ filling section. Spoil banks shall be provided about 1.5m away from the drain on outer banks.
Total Muck Disposal Area	Spoil banks shall be laid on either bank in approximately 360 km length of main canals
Estimate Muck to be generated	Phase-I Muck to be generated: 859.00 lakh cum Consumed on work: 411.26 lakh cum To be disposed :447.74 lakh cum Phase-II Muck to be generated: 1369.77 lakh cum Consumed on work: 594.42 lakh cum To be disposed on spoil banks:775.35 lakh cum

Transportation	By road
Monitoring mechanism for Muck Disposal	The project authorities shall erect a barrier to regulate to and fro movement of traffic from the excavation site. Entry of all vehicles passing the barrier and the information regarding quantities of earth material being transported to spoil banks site shall be properly arrayed in a register in a transparent manner and shall be liable to be made public by the project authorities as and when required. Proper e-challan shall be issued.

Land Area Breakup:

Particular	Phase-I	Phase-II	Total
Private land (ha)	9885.10	13092.00	22977.10
Government land (ha)	2393.36	2698.00	5091.36
Forest Land (ha)	205.48	0.000	205.48
Submergence area/Reservoir area (ha)	1006.64	0.000	1006.64
Land required for project components (ha)	12483.94	15790.00	28273.94

Presence of Environmentally Sensitive areas in the study area:

Forest Land/ Protected Area/ Environmental Sensitivity Zone	**Yes/No**	**Details of Certificate/ letter/Remarks**
Reserve Forest/Protected Forest Land.	No	-
National Park	No	-
Wildlife Sanctuary	No	
Archaeological sites monuments/historical temples etc	No	-
Additional information (if any)	-	-

Availability of Schedule-I species in study area

Five mammalian species (Blackbuck, Wolf, Smooth coated otter, Leopard and Tiger) belong to Schedule-1 of WPA, 1972; two avifauna species (Peafowl & Long Billed Vulture/Indian Vulture) belong to Schedule-I and one herpetofauna (Mugger Crocodile) fall under Schedule-I of WPA, 1972

Public Hearing (PH) Details:

Advertisement for PH with date	'Namesthe Telangana', Telugu Newspaper and in 'Telangana Today' English Newspaper on 10.07.2021
Date of PH	10th August, 2021
Venue	1.MPP Office, Hanwada (V&M), Mahabubnagar 2.Anjana Garden Function Hall, Narayanpet, 3.AVR Gardens, Veldanda Nagarkurnool 4.Janapriya Garden Function Hall, Konda Mallepally Nalgonda 5.Brundavan Garden, Kodangal Road, Parigi, Vikarabad 6.Sri Venkateswara Function Hall, Devuni Padkal X Road, Thalakondapalle (M), Rangareddy District
Chaired by	DM(s) of Mahabubnagar, Nagarkurnool, Rangareddy, Vikarabad, Nalgonda and Narayanpet Districts.
Main issues raised during PH	The main issues raised were related to employment, adequate land compensation to marginal and small farmers, plantation along the canal, problem of migration

	in the area, problem of drinking water shortage in the area, R&R Plan should be properly implemented and timely completion of project.
No. of people attended	Mahabubagar (142), Narayanpet (269), Nagarkurnool (154), Nalgonda (233), Vikarabad (462) and Rangareddy (277)

Brief of base line Environment:

Period of baseline data collection/Sampling period.	Monsoon and Post- monsoon, 2019 and Pre-monsoon 2020
Air, noise, water, land	**Air** The maximum concentration for 3 seasons of PM_{10}, $PM_{2.5}$ NO_X and SO_2 was found to be 49.3 µg/m^3, 26.9 µg/m^3,18.3 µg/m^3 and 7.4 µg/m^3 respectively and within the NAAQS prescribed by CPCB. **Noise:** The maximum L-equivalent noise levels during day and night time recorded were 49.2 dB(A) and 38.1 dB(A) respectively and are within the prescribed limits of 55 dB(A) & 45 dB(A) for residential area as set forth in the Noise Pollution (Regulation Control) Rules,2000 and subsequently amended. **Water:** The pH values of analyzed surface water samples ranged between 7.62 – 8.45 and are within the acceptable limit (6.5-8.5). The TDS levels ranged from 149 to248 mg/l and were less than the desirable limit of 500 mg/l. Total hardness levels ranged from 50 to 130 mg/l and were well below the acceptable limit of 200 mg/l. The dissolved oxygen values ranged between 2.5-9.7 mg/l and it was less than 4mg/l, i.e., the limit under CPCB Water Quality Criteria for designated best use (C), while in Samples from Srisailam reservoir, it was more than 6mg/l. The chlorides level in surface water samples ranged from 20 -50 mg/l and were below the acceptable limit of 250 mg/l. The sulphates level ranged from 18.5 to 37 mg/l and were below the acceptable limit of 200 mg/l. The nitrate level ranged from 2.6 to 4.2 mg/l and were below the acceptable limit of 45 mg/l. The BOD values ranged between <3.0 to 9mg/l exceeded the CPCB criteria of less than 3mg/l or less for Class C water, whereas it was less than 3mg/l for samples taken from Srisailam reservoir (SW-7&SW-8). The Total Coliform level were less than 5000 MPN/100ml, the limits specified for Class C water under CPCB Water Quality Criteria for designated best use. The water is suitable for meeting drinking water requirements after conventional treatment and disinfection. The water to be lifted from Srisailam reservoir is also suitable for irrigation purpose as it conforms to the CPCB Criteria for best designated use for Irrigation (Class -E water) in so far as (i) pH values are between 6.0 to 8.5; (ii) EC is less than 2250 µS/cm: (iii) SAR varies between 0.58-0.89 i.e., less than 26 and Boron

	is less than 2mg/l. Ground water had all parameters within the desirable limits. **Soil:** Soil is neutral to slightly basic at all the locations having pH varying from 7.20 to 7.65. The texture of the soil varies from sandy clay loam to clay. Available nitrogen content in the surface soils ranges between 133.5 to 185.2 kg/ha thereby is indicating that soils are low in available nitrogen content. Available phosphorus content ranges between 12.1 to 15.9 kg/ha) thereby indicating that soils are medium in available phosphorus. Available potassium content in the soil ranges between 167.3 to 204kg/ha, thereby indicating medium to high in potassium content. The organic carbon varies from 0.49 % to 0.73% thereby implying that soils have low to medium organic carbon.
Flora and Fauna of the project area,	Based on the primary survey of the specific sites flora 191 plant species consisting 67 tree species, 51 shrubs species and 73 herbs and grasses belonging to 50 families were recorded. About 14 economically important plant and 17 important medicinal/ethnobotanical importance plant species were recorded. 19 mammalian species of which five (Black buck, Smooth coated otter, Wolf, Leopard and Tiger) belong to Schedule-1 of WPA, 1972; 54 bird species of which two (pea fowl and Indian Vulture) belongs to Schedule-I; 6 species of herpetofauna were recorded /reported of which one (Mugger Crocodile) belongs to Schedule-I, under WPA. 1972.
Aquatic ecology, etc.	The phytoplankton community was represented by 47 species in the study area. Irrespective of season, the Chlorophyceae dominated (20 species), followed by Bacillariophyceae, (16 species), Cyanophyceae (8 species) and Euglenaphyceae (3 species). The zooplanktons were represented by 23 species with Protozoa and Rotifers represented by seven species each, while Copepoda (4 species) and Cladocera (5 species). The phyto-benthos community was represented by 16 species belonging to Bacillariophyceae, Chlorophyceae and Myxophyceae. The community was predominated by Chlorophyceae (9 species), and Bacillariophyceae (4 species). The zoo-benthos community was represented by 25 species belonging to Phyla Arthropoda, Annelida and Mollusca. The community was predominated by Arthropoda (19 species). 16 species of fishes were recorded. Mrigal, Catla and Rohu were predominant in Srisailam reservoir irrespective of seasons.

Brief description on hydrology and water assessment as per the approved pre-DPR	10-daily inflow series from 1984-85 to 2020-21 at Srisailam Reservoir has been assessed by the Central Water Commission, New Delhi. Based on the series, the water available at 75% dependability is worked out as about 16,494 MCM (582.5 TMC). Of this water availability after meeting the committed needs of Nagarjuna Sagar project (280TMC), Hyderabad Water Supply (16.5TMC), Chennai Water Supply (15TMC), Evaporation losses in Srisailam Reservoir (22TMC) and SRBC (19TMC), 230 TMC is available at Srisailam Reservoir at 75% dependability. As such enough water is available to meet the requirement of Palamuru Ranga Reddy LIS to an extent of 90 TMC as well as meeting requirements of SLBC (40 TMC), Kalwakurthy (40 TMC) and Dindi LIS (30 TMC).
Additional detail (If any)	A quantity of 90.81 TMC was protected as existing utilisation by KWDT-I in Telangana based on the decadal average utilisation for the period 1951-52 to 1960-61. However, based on the latest decadal average utilization i.e, 2012-13 to 2021-2022, which is the basis for assessment as directed by KWDT-I, the utilization of Telangana is 45.15 TMC, resulting in saving of 45.66 TMC (90.81-45.15). Further, as per the interstate agreement dated 04.08.1978 which is part of GWDT Award, erstwhile Andhra Pradesh agreed to divert 80 TMC at 75% dependability of Godavari waters from Polavaram project to Krishna River upstream of Vijayawada anicut thereby displace in the discharges from Nagarjunasagar project for Krishna Delta, thus enabling use of said 80 TMC for the projects upstream of Nagarjunasagar project. Out of this 80 TMC, 35 TMC was earmarked to Maharashtra and Karnataka who have taken up projects on the basis of above stated 35 TMC. Therefore, Telangana is entitled for Inter basin utilisation of balance 45 TMC u/s of Nagarjunasagar project. In view of this the water availability can be considered from the available underutilised consumption of 45.66 MCM and 45 TMC u/s of Nagarjunsagar project, since the CWC has already cleared Polavaram Project vide 95th TAC in 2009. In this perspective the Government of Telangana vide its G.O. Rt. No. 246 Dt: 18.08.2022 has accorded approval for utilisation of 90 TMC towards Palamuru Rangareddy LIS.

Court case details:

Court Case	Case Matter	Present Stage of Case
Before NGT Southern Bench at Chennai O.A No.147,2021 Kosgi Venkataiah S/o Kosgi Balaiah Vs	Illegal mining in Udandapur Reservoir under Palamuru Rangareddy Lift Irrigation scheme	Final hearings completed and final orders reserved.

Union of India & 4 Others		
Before NGT Southern Bench at Chennai O.A No.148,2021 D. Chandramouleswara Reddy & 8 Others Vs Union of India & 5 Others	Construction of Palamuru Rangareddy Lift Irrigation Scheme, State of Telangana in violation of the provisions of the environmental laws and against the undertaking given by them in the earlier proceedings.	
Additional information (if any)	The Joint Committee, constituted by the Hon'ble NGT made certain recommendations in their report after inspection of site against which the comments of the PP on behalf of 5th respondent provided in Executive Summary.	

Status of other statutory clearances:

Particulars	Letter no. and date
Status of Stage- I FC	Not applicable for Phase-II (Irrigation Component) as no forest land is to be diverted. However, However, for Phase-I works, Stage-I and Stage-II Clearances have been accorded for diversion of 205.48 ha forest land by MoEF&CC vide F.N.8-43/2017-FC, dated 3.4.2018 and vide F.N.8-43/2017-FC, dated 25.1.2019 respectively.
Approval of Central Water Commission	Not yet
Approval of Central Electricity Authority	Not yet
Additional detail (If any)	-
Is FRA (2006) done for FC-I	Yes.

Details of the EMP:

S.N.	Plans	Cost (Rs lakh)	Capital cost (Rs lakh)	Annual Recurring (Rs lakh)
1	Catchment Area Treatment Plan	00.00	00.00	00.00
2	Command Area Development Plan	74985	57945.00	5680.00
3	Compensatory Afforestation Scheme	00.00	00.00	00.00
4	Wildlife and Bio-diversity Management plan	*539.00 **80.00	*269.00 **23	*90.00 **19
5	Fisheries Management Plan	100.00	100.00	0.00
6	Resettlement & Rehabilitation Plan	156686.00	156686.00	0.00
7	Green Belt Development Plan	2964.00	2424.00	180.00
8	Reservoir Rim Treatment Plan	00.00	00.00	00.00
9	Muck Management Plan	7125.00	6690.00	145.00
10	Landscape and Restoration Plan	76.00	40.00	12.00
11	Restoration Plan for Quarry Sites	76.00	31.00	15.00
12.	Disaster Management Plan	35.00	32.00	1.00
13	Water, Air and Noise Management Plan	540.00	45.00	165.00
14	Public Health Delivery Plan	600.00	102.00	166.00
`15	Labour Management Plan	345.00	135.00	70.00

16	Sanitation and Solid Waste Management Plan	1080.00	540.00	180.00
17	Local Area Management Plan	3950.00	3635.00	105.00
18	Environmental Safeguards Including Road Construction	320.00	32.00	96.00
19	Energy Conservation Measures	400.00	121.00	93.00
20	Environmental Monitoring Plan	228.00	0.00	76.00
Grand Total (As per information submitted by PP through email)		**250049.00**	**228827.00**	**7074.00**
As per EMP Report		249590.00	228581.00	7003

***** Information presented before the EAC
** Information given in EIA/EMP report

viii. **Project benefit:**

Project benefits inter alia shall include the benefits like (i) Irrigation potential shall be created in area (4,97,976ha), (ii) Improved Market Facilities (70 No. Market Sheds) and road (iii) Employment Potential (Temporary employment during construction 7000; Permanent employment during operation 300 and Temporary employment during operation 200), (iv) Sustained Water Availability for Agriculture (82.515 TMC), (v) Increased Green cover by planting 14.82 lakh saplings along canal bank.

ix. **Public hearing:** Public Hearing was conducted by Telangana State Pollution Control Board on 10th August, 2021 simultaneously in six districts. The notice for conducting of public hearing was published in 'Namesthe Telangana', Telugu Newspaper and in 'Telangana Today' English Newspaper on 10.07. 2021.All meetings were presided by the District Collector and Magistrate of respective district. The main issues raised were related to adequate compensation to the land losers, employment opportunity, promotion of solar energy, petty contract to the local people. development of Women Associations, micro irrigation. fisheries development and timely completion of work in time bound manner.

The Project proponent assured the local stake-holders that their grievances and logical demands shall be properly addressed as per prevalent norms and rules. The project proponent also stated to adhere to Environmental norms and standards in project activities. The respondents were clearly told that compensation for land and other assets to be acquired and other R&R grants shall be as per provisions enshrined under "The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013".

x. **Status of other statutory clearances:**

Statutory clearances like Forest Clearance, Wildlife Clearance are not warranted in respect of Phase-II works (Irrigation Component).
However, for Phase-I works, diversion of 205.48 ha of forest land in Achampet Division of Nagarkurnool District for works of Lift-I Pumphouse, formation of Anjanagiri Reservoir, tunnel in between Anjanagiri reservoir at Narlapurand Veerajanya Reservoi at Yedula was involved for which Stage-I and Stage-II Clearances have been accorded by MoEF&CC vide F.N.8-43/2017-FC, dated 3.4.2018 and vide F.N.8-43/2017-FC, dated 25.1.2019 respectively.

34.2.3: The EAC during deliberations noted the following:
The proposal is for grant of Environmental Clearance to the project for Palamuru Rangareddy Lift Irrigation Scheme (Phase II: Irrigation) of Culturable Command Area (CCA) of 497976 Ha in Districts of Mahbubnagar, Rangareddy & Nalgonda, Telangana by M/s Irrigation and CAD Department, Government of Telangana.

At present two cases viz., (i) Kosgi Venkataiah S/o Kosgi Balaiah vs Union of India & 4 Others (O.A No.147 of 2021 and (ii) D. Chandramouleswara Reddy & 8 Others vs Union of India & 5 Others (O.A No.148 of 2021), are pending before NGT, Southern Bench at Chennai.

The Hon'ble NGT has constituted a Joint Committee of 6 members. The joint Committee has filed a report dated 30.09.2021, e-filed on 02.10.2021, though hard copy was produced on 01.10.2021. According to said report, this project requires prior environmental clearance as it falls under item 1(c(ii) of the Notification. In the present case, the envisaged command area is 497976 ha Prior EC Clearance has to be accorded at central level. MoEF&CC has accorded Terms of Reference to project proponent vide letter 11.10.2017 for carrying out pre-construction activities only. Hence, the committee except members at Sl. N. 4 & 5, is of the view that the provisions of EIA Notification,2006 were violated in carrying out the construction activities. The final order of the Hon'ble court is still awaited.

Earlier, the Ministry issued ToR for the Phase-II of the project i.e. Irrigation component and it was informed by the PP that Phase I is related to construction of barrages related to drinking water supply and for the same prior EC is not required. However, as per the report of Joint committee the complete project attracts the provisions of EIA Notification, 2006 and requires prior EC. The EAC was also of the view that the project proponent has done the construction without prior environmental clearance and accordingly project involves violation of EIA Notification, 2006. The EAC noted the difference in budget allocation for EMP submitted in EIA/EMP report and information presented before the EAC.

33.2.4 The EAC after detailed deliberations found that the project involves violation of the provisions of the EIA Notification, 2006 and project will be appraised as per the SoP issued vide OM dated 7.07.2021 for consideration of Violation cases under EIA Notification, 2006, as amended. The EAC further co-opted Shri K. Gowarappan, ex-member of the Violation Committee, MoEF&CC for calculating/ revisiting damage cost as per SoP after submission of information on following points: -

(i) The project proponent shall be required to submit a bank guarantee equivalent to the amount of remediation plan and natural and community resource augmentation plan with the SPCB prior to the grant of EC. The quantum shall be recommended by the EAC and finalized by the regulatory authority. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the EAC and approval of the regulatory authority.

(ii) Assessment of ecological damage with respect to air, water, land and other environmental attributes shall be carried out by the accredited consultant of the PP. The collection and analysis of data shall be done by an environmental laboratory duly notified under the Environment (Protection) Act, 1986, or an environmental laboratory accredited by NABL, or a laboratory of a Council of Scientific and Industrial Research (CSIR) institution working in the field of environment.

(iii) The PP has to obtain clearance from inter-state aspect from the designated authorities as per procedure.

(iv) Preparation of EMP comprising remediation plan and natural and community resource augmentation plan corresponding to the ecological damage assessed and economic benefits derived due to violation to be done.

(v) The remediation plan and the natural and community resource augmentation plan to be prepared as an independent chapter in the EIA report by the accredited consultants.

(vi) Socio Economic Study following standard procedures to be included, impacts due to project activities need to be assessed and remedial measures to be proposed based on the Field Study and issues raised during Public Hearing.

(vii) As the area is on fluoride affected zone, therefore, provisions should be made to recharge the groundwater through proposed reservoirs to dilute fluoride levels.

The proposal is therefore **deferred**.

Agenda Item No. 34.3

Tarali Pumped Storage Project 1500 MW in an area of 108.95 ha in Patan Tehsil, Satara District of Maharashtra by M/s Adani Green Energy Limited – Terms of Reference (TOR) - reg.

[Proposal No. IA/MH/RIV/289096/2022; F. No. J-12011/14/2022-IA.I(R)]

34.3.1: The proposal is for grant of terms of reference to Tarali Pumped Storage Project 1500 MW in an area of 108.95 ha in Patan Tehsil, Satara District of Maharashtra by M/s Adani Green Energy Limited.

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

i. The proposed 1500 MW (4x300 MW + 2x150 MW) Tarali Pumped Storage Hydroelectric Project (the Project) with a storage capacity of 9000 MWH consists of utilising the existing Tarali reservoir across Tarali River in Patan Taluka of Satara District (Lower Reservoir) and involves construction of Upper Reservoir near Nivade village, Patan taluka, Satara District in Maharashtra State along with other project components.

ii. The existing Tarali Reservoir constructed in 2006 for irrigation purposes provides an opportunity for constructing a pumped storage scheme between this reservoir as lower reservoir and a new reservoir to be constructed as upper reservoir on nearby high ground for creating the desired gross storage capacity of 10.73 MCM by constructing a concrete dam.

iii. Out of total 10.73 MCM, the live storage capacity is 10.1 MCM and the dead storage capacity is 0.63 MCM by keeping FRL & MDDL at EL 1101.00m & EL 1060.00m respectively. For creating this storage, it is proposed to construct concrete dam for the average height of around 30.00m (with maximum height of 60m) for the length of 650m. The lower reservoir is an existing large reservoir constructed for irrigation purposes. It has a gross storage capacity of 165.7 MCM and live storage of 165.44 MCM which is more than adequate to serve as lower reservoir with a requirement of 10.1 MCM storage for the proposed Pumped Storage Scheme.

iv. **Project location (Coordinates):**
Upper dam (proposed): Latitude 17°30'16.76"N & Longitude 73°53'10.77"E
Lower dam (existing): Latitude 17°32'0.57"N & Longitude 73°53'30.51"E

v. **Project Components details:** The project comprises following major components
   a) Concrete dam with ungated spillway for upper reservoir
   b) Approach channel to turbine intake (50m long)
   c) HRTs - 2 numbers, each 460m long, 10m and 8m dia
   d) Surge shafts – 2 numbers, each 90m deep
   e) Pressure shafts – 2 numbers, 1696 m long & 8.3m and 1710 m long & 6.8m dia
   f) Underground Powerhouse (well shaft and cavern type) – 4x300MW and 2x150 MW
   g) Tailrace tunnels – 2 number, each 200m long and 8.7m dia

h) Pump approach channel – 70m wide and 1000m long
i) Adits
j) Construction facility areas & approach roads

vi. The total land required for the construction of various components including infrastructure facilities for Tarali PSP is estimated to be around 108.95 ha, out of which 45.85 ha is non-forest land and 63.10 ha is forest land. Diversion of forest land for non-forest purpose will be involved for construction of Tarali project components. Therefore, Forest Clearance is required to be obtained under Forest Conservation Act.

vii. **Details on Ecological Sensitive Area, if any within 10km of project site (WLS, Tiger/elephant corridor, Critically Pollute Area etc):** Sahyadri Tiger Reserve, which comprises of protected areas of Koyna WLS and Chandoli NP, is the nearest protected area. Proposed project is located around 1.5 Km away from boundary of Sahyadri Tiger Reserve and about 3.2 Km from Koyna WLS. ESZ has not been notified for Sahyadri Tiger reserve, therefore wildlife NOC from NBWL will be applicable.

viii. **Project benefit:**
a) The project will facilitate energy storage and balance variable power from renewable energy sources (predominately large-scale solar plants) available during day time effectively for meeting the energy requirement during peak hours and thereby ensuring grid balancing.
b) The project will generate 1500 MW by utilizing a design discharge of 450.66 cumec.
c) Employment generation for technical staff & workmen category (including locals)

ix. **Project cost and Employment Generation:**
a) Capital cost: Rs. 6009.63 (approx. 6010) Crores (including IDC of Rs 822.63 Crores)
b) Employment Generation: The project will provide employment opportunities for both technical staff and workmen category during the construction period of 3.5 years.

x. **R & R details**

The landowner family may be losing part of their total land, none of the landowners is losing any house or any other assets such as borewell, Cattle shed, trees etc. None of the landowner family is displaced due to the proposed project.

In view of the above it is noted that the total private land proposed to be purchased through private negotiations. If the total private land required exceeds the specified limits by the relevant rules notified by the State Government, if any related to rehabilitation and resettlement under RFCTLARR, 2013 shall apply for the proposed Project.

The detailed requirements for the R&R plan, if applicable, will be based on the social-economic survey and land utilization for the project. Due consideration ought to be given to the societal requirements in developing the R&R plan.

34.3.3: The EAC during deliberations noted the following:

The EAC deliberated on the information submitted (Form 1, PFR, kml file, etc.) and as presented in the meeting and observed that the proposal is for grant of terms of reference to the project for Tarali Pumped Storage Project 1500 MW in an area of 108.95 ha in Patan Tehsil, Satara District of Maharashtra by M/s Adani Green Energy Limited.

The EAC noted that the proposed project comes under Western Ghats of Maharashtra. However, in the Form-I, there is not mention any details regarding Western Ghats. The EAC also noted that as per direction issued by the Ministry vide dated 13.11.2013, certain projects/ activities including mining, quarrying and all red category industry will be prohibited in ESA from date of issue of said directions and no fresh case shall be considered by the EACs/ MoEF or SEACs/ SEIAAs from the date of issue of these directions. Further, as per OM dated 20.12.2013, the hydro power projects,

being a clean source of energy, has been recommended by the HLWG and the said recommendations was accepted by the Ministry.

34.3.4 The EAC after detailed deliberation on the information submitted and as presented during the meeting ***recommended*** for grant of Standard ToR for conducting EIA study for Tarali Pumped Storage Project 1500 MW in an area of 108.95 ha in Patan Tehsil, Satara District of Maharashtra by M/s Adani Green Energy Limited, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:

[A] Environmental Management and Biodiversity Conservation:

i. Alternative site analysis shall be carried out in terms of ecological aspects viz. loss of Forest ecosystem due to diversion of Forest land/ loss of biodiversity and its impacts on productivity of the ecosystem, water availability, eco-sustainability of water source be used for generation of hydro power and Ecological flows in the small stream/ Nallah. Preference shall be given to minimize forest land.
ii. Impact zone decided prior to base line data generation and accordingly, sampling location shall be finalized. Baseline data as mentioned in Standard ToR shall be collected for preparation of EIA/ EMP report along with soil characteristics which shall be studied at minimum 10 locations. The ground water level at 10 locations shall be measured in project area in all three seasons.
iii. A study shall be carried out on impact of project activity on the aquatic and terrestrial ecosystem, within project area classifying the impact zones (highly impact/low impact zone) based on seasonal variations and covering the aspects related to impacts on aquatic ecosystem/ primary productivity due to quantity of water to be lifted for power generation and thermal stratification. Accordingly, Environment Management plan shall be prepared.
iv. Sampling locations be located to cover villages situated near the reservoir and around boundary of forest area for collection of baseline data and data to be incorporated in EIA/ EMP report.
v. The study shall be conducted and approved by CWC regarding assessment of E-Flow of water in the river Tarali in terms of draft notification S.O. 3072(E) dated 6th July, 2022 issued by the Ministry for Western Ghats.
vi. Details about other projects located on the river basin of river Tarali along with their longitudinal distance between two projects be submitted. In case of more than one project a detailed Cumulative Impact Assessment and Carrying Capacity study covering aspects related to impact of each project on the flow pattern of the rivers and forest and biodiversity shall be conducted through a reputed Government institute having expertise in the area.
vii. Identify the sand mining/ quarrying sites in submergence area and downstream of reservoir.
viii. Source of construction material and its distance from the project site along with detailed transportation plan for construction material in view of the project site location in Western Ghats be submitted.
ix. A detailed reclamation/ restoration plan of quarrying site/sites be incorporated in the EIA/EMP report.
x. Certificate and certified map from Chief Wildlife Warden shall be submitted mentioning that project boundary is located outside the Eco Sensitive Zone (ESZ) and no Wildlife Sanctuary falls within 10 km of Project site.
xi. A detailed wildlife conservation plan for Schedule –I species be prepared duly approved by the Chief Wild Life Warden be submitted.
xii. In case any Wildlife Corridor is located within 10 km radius of the project site a detailed study shall be conducted to assess the impact of project on safe movement of wild animals.
xiii. Reservoir/ River banks protection plan all along the submergence need to be prepared and incorporated in EIA/ EMP.
xiv. Scope of watershed development in the 10 km radius of the project shall be studied in consultation with Govt. institutions/ Indian Council of Agriculture Research (ICAR)and

accordingly a detailed Water Shed Development Plan shall be prepared and incorporated in EIA/ EMP report.

xv. MoU for water uses for the project shall be signed and approved by concerned authority.

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

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

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

xix. 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.

xx. Project impact on avi-fauna shall be studied and incorporated in EIA/ EMP report.

xxi. Impact assessment on the fish diversity based on the hydrological alteration at the water drawing sources shall be studied.

xxii. Stage-1 Forest Clearance shall be obtained.

[B] Socio-economic Study

xxiii. Declaration by the project proponent by way of affidavit that "No" Inter-state issue/ policies issue is involved with any state in the project. Consent from other state for drawing of water from Narmada River, if required.

xxiv. 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.

xxv. 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.

xxvi. Tentative no. of project affected families shall be identified and accordingly appropriate Rehabilitation & Resettlement plan shall be prepared.

[C] Muck Management/ Disaster Management

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

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

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

[D] Miscellaneous.

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

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

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

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

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

xxxv. The PP has to obtain clearance from inter-state aspect from the designated authorities as per procedure.

The meeting ended with vote of thanks to the Chair.

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ANNEXURE-I

ATTENDANCE LIST

Sr. No.	Name & Address	Role	Attendance
1.	Dr. K. Gopakumar	Member (Chairman)	P
2.	Dr. A. K. Malhotra	Member	P
3.	Dr. Uday Kumar R.Y.	Member	P
4.	Shri Sharvan Kumar	Member (Representative of CEA)	P
5.	Shri Ashok Kharya	Representative of CWC	P
6.	Dr. J. A. Johnson	Representative of WII	P
7.	Dr. N. Lakshman	Member	P
8	Shri Yogendra Pal Singh	Member Secretary	P
9	Dr Saurabh Upadhyay	Scientist C, MoEF&CC	P

APPROVAL OF THE CHAIRMAN

From: kgopa@iisc.ac.in
To: "Yogendra Pal Singh" <yogendra78@nic.in>
Sent: Tuesday, October 4, 2022 3:20:37 PM
Subject: Re: Draft minutes of the 34th EAC (RIV&HEP) meeting held on 14.09.2021-reg

Dear Sir
Yes I approve this.

With warm regards

Prof. K.Gopakumar, FIEEE, FNAE

DESE, Indian Institute of Science

Bangalore-560012, INDIA

From: Yogendra Pal Singh <yogendra78@nic.in>
Sent: Tuesday, October 4, 2022 9:49 AM
To: Gopakumar K <kgopa@iisc.ac.in>
Subject: Fwd: Draft minutes of the 34th EAC (RIV&HEP) meeting held on 14.09.2021-reg

External Email

Dear Sir,

The draft minutes of the 34th EAC (RIV&HEP) meeting held on 14.09.2021 were forwarded to all EAC members on 30th September, 2022. No comments received so far. Accordingly, the attached draft MOM of the said meeting may please be approved.