

Minutes of the 3rd Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects held on 29th October, 2020 from 11 a.m.- 04:30 p.m. through Video Conference.

In the 3rd meeting of the re-constituted EAC for River Valley & Hydroelectric Projects which was held on 29/10/2020 under the Chairmanship of Dr. K. Gopakumar in the Ministry of Environment, Forest & Climate Change through video conference (VC). The following members participated in the video conference:

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|-----|--------------------------|---|-------------------------|
| 1. | Dr. K. Gopakumar | - | Chairman |
| 2. | Dr. N. Lakshman | - | Member |
| 3. | Dr. Mukesh Sharma | - | Member |
| 4. | Dr. Chandrahas Deshpande | - | Member |
| 5. | Dr. A.K. Malhotra | - | Member |
| 6. | Dr. Uday Kumar R.Y. | - | Member |
| 7. | Dr. Narayan Shenoy K. | - | Member |
| 8. | Shri Balraj Joshi | - | Member |
| 9. | Shri Sharvan Kumar | - | Representative of CEA |
| 10. | Shri A.K. Singh | - | Representative of CWC |
| 11. | Dr. J.A. Johnson | - | Representative of WII |
| 12. | Dr. A.K. Sahoo | - | Representative of CIFRI |
| 13. | Dr. S. Kerketta | - | Member Secretary |

Item No. 3.0 Confirmation of the minutes of 2nd EAC meeting.

The minutes of the 2nd EAC (River Valley Hydroelectric Project) meeting held on 31st August, 2020 were confirmed.

Item No. 3.1 Discussion on Project Proposals

Item No. 3.1.1 Discussion on the order dated 20.10.2020 of Hon'ble NGT Principal Bench New Delhi in the Appeal No. 20/2018 (Md. Hayath Udin v/s UOI and Ors.) - for Kaleshwaram Lift Irrigation Scheme (KLIS) project in Karimnagar District of Telangana by Irrigation & Command Area Development (I & CAD) Department, Government of Telangana
Proposal No. IA/TG/RIV/61225/2016 File No. J-12011/1/2017-IA-I (R)

Project Background

This case pertains to Kaleshwaram Lift Irrigation Scheme (KLIS) in Telangana State. The project was formulated to irrigate 7,38,851 ha in thirteen districts in the project out of fifteen districts i.e. Jayashankar Bhupalpalli, Peddapalli, Mancherial, Karimnagar, Jagityal, Nirmal, Nizamabad, Kamaraeddy, Rajanna Siricilla, Siddipet, Medak, Sangareddy, Yadadri-Bhongiri, Nalgonda and Medchal districts of Telangana by diverting 180 TMC of water from River Godavari. The source point is near Medigadda Village, below the point of confluence of Pranahita river with Godavari River, about 20 km from Kaleshwaram. The project is also proposed to provide drinking water facility to Hyderabad and Secunderabad cities. This is an Interstate project and boundary of the project is nearer to Maharashtra state and 302 ha of area likely to be submerged in Maharashtra. Total land requirement is about 37852 ha, out of which 3168 ha is forest land. The total submergence area is about 18,302 ha. Total estimated cost of the project is about Rs. 80,499.71 Crores.

Apart from providing irrigation facilities to its own command area of 7,38,851 ha Kaleshwaram project would also enable to stabilize the existing command area of Sri Ram Sagar Project (SRSP) Stage-I (3,92,008 ha), SRSP Stage-II (1,78,062 ha), Nizam Sagar Project (NSP) (94,830 ha), Singur Project (16,187 ha) and Flood Flow canal (80,937 ha) totalling to 7,62,024 ha.

The project consists of various components like:

- i. Three barrages across River Godavari between Yellampally and Medigadda viz. Medigadda Barrage on Godavari near Medigadda (Kaleshwaram), Annaram Barrage on Godavari downstream of the confluence of Manair River with Godavari river near Annaram and Sundilla Barrage on Godavari downstream of Yellampally barrage near Sundilla.
- ii. Water conveyance system consisting of gravity canals and tunnels. The entire project has been divided into seven links. The total length of the canals is 1,832 km.
- iii. Online storages In order to utilize the diverted water of Godavari River and store it en-route, 17 online storage tanks with a capacity of 147.71 TMC have been proposed which would provide irrigation for a command area of 7,38,851 ha in the project.
- iv. Distributary Network System It is proposed to provide distributary network to the command area of 7,38,851 ha (18,25,700 acres) covering thirteen districts to irrigate the entire area

The project was considered by EAC in its meeting held during 30-31st January, 2017. The EAC **recommended** for grant of scoping/ToR clearance. ToR issued on 31st March, 2017. The following additional TOR in addition to the standard TOR prescribed by the committee:

- i. Hydrological studies/data as approved by CWC shall be utilized in the preparation EIA/EMP report. Actual hydrological annual yield may also be given in the report.
- ii. Flow series, 10 daily with 90%, 75% and 50% dependable years discharge are to be presented in EIA report.
- iii. For sedimentation rate, direct sampling of river flow is to be done during EIA study. The study should be conducted for minimum 1 year.
- iv. Set-up a G-D monitoring station and few rain gauge stations in the catchment area for collecting the data during investigation.

The public hearings were conducted in 15 Districts (i.e. Karimnagar on 22.8.2017, Nizamabad on 22.8.2017, Medchal-Malkajgiri on 22.8.2017, Yadagdri-Bhunanjgiri on 22.8.2017; Peddapally on 23.8.2017, Nalgonda on 23.8.2017, Sangareddy on 23.8.2017, Kamareddy on 23.8.2017; Nirmal on 24.8.2017, Jagityal on 24.8.2017, Medak on 24.8.2017; Medak on 26.8.2017, Jayashankar-Bhupalapally on 26.8.2017, Manchiryal on 26.8.2017, Rajanna Sircilla on 26.8.2017 & Siddipet on 26.8.2017) of Telangana and 1 District (Gadchiroli on 27.9.2017) of Maharashtra as per the provisions of EIA Notification, 2006.

The main issues raised during public hearing are – lack of irrigation facilities in the region, improving socio-economic conditions, stabilization of SRSP ayacut (command area), drinking water facility, resolve land acquisition issues at the earliest, rehabilitation benefits for SC/ST communities, R&R should be as per the R&R LA Act, 2013, compensation should be 10 times the basic value of land, inclusion of lakes at Muraharipally villages to fill-up, storage facility should be increased, water supply to semi-arid zones, employment in the villages, compensation should be as per Mallanasagar

project and project should benefit in the region, reasons for redesigning the project & increasing the reservoir capacity, impact on environment etc. The project proponent clarified all the queries/issues pertaining to them. Majority expressed happiness over the implementation of the project.

The Ministry granted Stage-1 FC clearance on 24.10.2017 and Stage-II FC clearance on 24.11.2017. Project was considered by the EAC in the meeting held on 05.12.2017. EAC recommended the proposal for grant of EC. The Ministry accorded Environmental Clearance for the Project on 22.12.2017.

EAC while recommending the project proposal for EC also took the cognizance of Court case filed in the NGT (OA No. 372 of 2017) and subsequent appeal made in the High Court by the PP with regard to the commencement of construction of Kaleshwaram Project. The NGT vide interim order dated 05.10.2017 has pronounced restraining the project authorities from carrying out any construction activities for this Scheme. Meanwhile, the State of Telangana has filed a Writ Petition No. 34458/2017 in the Hon'ble High Court of Telangana on the above interim order of the Hon'ble NGT. The Hon'ble High Court of Telangana has given order on 8.11.2017 setting aside the order of NGT and ordered as follows:

- works shall be confined strictly to the drinking water component of the project.
- not to take up any works in reserve forests till final forest clearance is obtained from the Government of India.
- not to commence construction of distributaries and channels, relating to the irrigation component of the project without obtaining environmental clearance from the Union of India

Court Case pertains to Kaleshwaram Project

A case has been filed before the NGT, Principal Bench, New Delhi by Md. Hayath Uddin (**OA No. 372 of 2017**) in which Union of India is also arrayed as Respondent Number 1. In the present case, it was alleged that the construction activities have been commenced both in the forest and non-forest land without requisite clearance under the EIA Notification 2006 and Section 2 of Forest (Conservation) Act, 1980. Regional Office, Chennai has made a site visit for the proposed Kaleshwaram Project during 06.08.2017 to 09.08.2017 and submitted a factual report on 11.08.2017 (received in the Ministry on 16.08.2017) and report reveals status of construction work at site. Diversion of forestland is also involved in the project and a proposal has been submitted for taking Forest Clearance as 2,866 ha of forestland is proposed for diversion.

A Writ Petition has also been filed in the High Court of Hyderabad by T. Srinivas (**Writ Petition No. 24983 of 2017, disposed of**) in which Union of India is arrayed as Respondent Number 10. The contention in this case is that the construction is in violation of the provision of The Right to Fair Compensation and Transparency in Land Acquisition and Rehabilitation and Resettlement Act, 2013. In the present petition validity of Rule 6 to 10 of Telangana State Land Acquisition (Consent Award, Voluntary Acquisition and Lump sum payment towards Rehabilitation and Resettlement) Rules, 2017 have also been challenged.

Subsequently, an Appeal (20 of 2018) along with an application for condonation of delay has been filed by Md. Hayath Uddin in the NGT, New Delhi challenging Environmental Clearance accorded by the Ministry on 22.12.2017. The Ministry had filed its objection to the application seeking condonation of delay, however, delay was condoned in favour of Appellant. Thereafter, Ministry filed two affidavits (Short and Counter) in the matter before the Hon'ble NGT.

The Ministry through the affidavit had filed that the EC for irrigation purpose was granted after detailed scrutiny of EIA report submitted by the Project proponent and also taken into consideration the issue raised during Public Hearing. Further, the Ministry had submitted the details of total land requirement, forest area, details of public hearing conducted in the affected districts and had also submitted that the project affected Families, Project Displaced Families and Families belonging to Below Poverty Level shall be given benefits under The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013.

The Appeal 20 of 2018 was last listed for hearing on 12.10.2020 before the Tribunal. The Tribunal after hearing the counsels for all the parties in detail has passed an order for disposal of the Appeal, wherein the Ministry is directed to constitute a seven-member Expert Committee preferably out of EAC members with relevant sectorial expertise. *The Expert Committee may be constituted within one month and it may complete its exercise within six months thereafter. Further, it was directed that the Committee may assess the extent of damage caused in going ahead with the project without EC (from 2008 to 2017) and identify the restoration measures necessary. Relief and Rehabilitation measures adopted and required to be further adopted may also be looked into.*

Observation and recommendation of the EAC in the present meeting (3rd meeting)

EAC noted the Hon'ble NGT in Appeal 20 of 2018 directed Ministry to constitute a seven-member Expert Committee preferably out of EAC members with relevant sectorial expertise. The Expert Committee may be constituted within one month and it may complete its exercise within six months thereafter. Further, it was directed that the Committee may assess the extent of damage caused in going ahead with the project without EC (from 2008 to 2017) and identify the restoration measures necessary. Relief and Rehabilitation measures adopted and required to be further adopted may also be looked into.

EAC opined that let Ministry take up the matter separately for constitution of the Committee however, it was suggested that one additional member from the Expert Appraisal Committee dealing with Violation cases in the Ministry, may also be included in the Committee for contribution and to achieve the work specified by the Hon'ble NGT within the time frame.

Item No. 3.1.2 Saundatti HEP (1200 MW) Integrated Renewable Energy with Pumped Storage Project by M/s Greenko Solar Energy Pvt. Ltd. at village Karlakatti, Tehsil-Saundatti, District-Belgaum, Karnataka – regarding reconsideration of Environmental Clearance **Proposal No. IA/KA/RIV/74600/2018, File No. J-12011/11/2018-IA.I(R)**

Project Proponent alongwith the Consultant (R. S Envirolink Technologies Ltd) made the detailed presentation before the EAC and submitted the following to the EAC:

Standalone Pumped Storage Project (1260 MW/13734 MWH Storage Capacity) is a part of Saundatti Integrated Renewable Energy Project (IREP). The other components of Saundatti IREP include Wind and Solar Energy Projects. EC is being sought only for development of 1260 MW/13734 MWH Storage Capacity Standalone Pumped Storage component. The Standalone Pumped Storage Component of Saundatti IREP envisages construction of upper reservoir/submergence involving about 128.58 ha in Karlakatti forest area near Yekkundi Gram Panchayat whereas existing Renuka Sagar reservoir near Naviluteertha Dam, Vatnala village in Saundatti Taluk of Belagavi District will be the lower reservoir. The water in the Renuka Sagar reservoir (existing lower reservoir) will be pumped up and stored in the proposed Pumped Storage component of Saundatti IREP reservoir (upper

Reservoir) and will be utilized for power generation. Project is located in Belagavi district of Karnataka. The total project cost including IDC is estimated to be about Rs. 5,965.33 Cr.

Proposed Standalone Pumped storage component of Saundatti Integrated Renewable Energy Project (IREP) is located near Karlakatti, Chakrageri and Kagihala villages of Belagavi district of Karnataka. It envisages creation of upper reservoir, which is located away from all existing natural systems and have almost negligible catchment area. The project is about 80 km from district headquarters Belagavi via Yeragatti. Nearest railhead and Airport are located at Dharwad, Hubli and Belagavi, respectively. This scheme envisages gross storage of 1.03 TMC with 0.03 TMC as dead storage and non-consumptive re-utilization of 1 TMC of water of the Renuka Sagar reservoir by recirculation for power generation. The water in the Renuka Sagar reservoir (existing lower reservoir) will be pumped up and stored in the proposed Pumped Storage component of Saundatti PSP reservoir (upper Reservoir) and will be utilized for power generation. The Geographical co-ordinates of the proposed Standalone Pumped Storage component of Saundatti IREP reservoir are at longitude 75°00'19.50" East and latitude is 15°51'21.84" North and that of Renuka Sagar reservoir (existing) are 15°49'17.15"N N and 75° 05'48.23"E

Study area for environmental study has been delineated as project area or the direct impact area within 10 km radius of the main project components like, Pump house, Powerhouse, Dam, Reservoirs, approach roads, etc. The project is not located on river and therefore catchment area is not delineated. Submergence area created by upper reservoir is about 128.58 ha; lower reservoir already exists and therefore project is not creating any additional submergence area.

First Scoping Clearance for Saundatti Pumped Storage Scheme with capacity of 1200 MW (as part of Integrated Renewable Energy Project) was issued on 18.05.2018. Revised Scoping Clearance due to change in project capacity from 1200 MW to 1260 MW was issued vide letter No. J-12011/12/2018-IA.I (R) dated 25.09.2018. Public Hearing was conducted by Karnataka State Pollution Control Board (KSPCB) on 7.01.2019 at project site adjacent to Mallur Electrical Sub-Station, Karlakatti Village, Yakkundi Gram Panchayat, Saundatti Taluk, Belagavi District, Karnataka. Thereafter, final report was submitted online for appraisal and project was discussed in EAC meeting held on 27.02.2019. EAC after detailed deliberation recommended the project for environment clearance.

Post EAC recommendation for environment clearance, Ministry sought additional information vide its letter No.-J-12011/11/2018-IA-I dated 13.06.2019. Detailed response to the queries was submitted vide letter No. IRE-Saundatti/MOEF&CC/EC/191097 dated 09.10.2019. It was also mentioned that during DPR studies, it was evaluated that the project can be further optimized with minor change in upper reservoir location without any change in EIA study area, which has already been recommended by EAC for environmental clearance. Accordingly, optimization studies have been carried out.

Based on the optimization studies it was evaluated that by shifting the Upper Reservoir to the adjacent hillock having gradually sloping surface from the earlier proposed gorge/valley, the project shall result in

- An increase in MWH from earlier 8.0 h to 10.90 h with the same quantity of water.
- The Gross Storage capacity has been optimized from 1.75 TMC to 1.03 TMC.
- Dead Storage reduces from 0.74 TMC to 0.03 TMC.
- Storage Capacity increased from 10,080 MWH to 13,734 MWH.
- Except shifting of Upper Reservoir, all other project component locations remain same.
- The total land requirement has been reduced from 228.97 ha to 213.70 ha.

- Forestland has been reduced from 169.97 ha to 160.40 ha. The density of forestland also changes from Medium Dense Forest type to Open Forest type.
- All the Project Affected Villages and the Project Affected Persons remains the same.

With the shift of the Upper Reservoir, total land requirement has slightly reduced to 213.70 ha from earlier estimated land requirement of 228.97 ha. Forest land required to be diverted for the project is reduced to 160.40 ha from 169.65 ha and private land requirement from 37.34 ha to 34.64 ha as can be seen from comparative table below:

Break-up of the land (ha)	Updated Land (ha)	As per EIA Report (ha)
Forest Area	160.40	167.65
Surface	153.93	162.63
Underground	6.47	5.02
Non-Forest	53.3	61.32
Private	34.64	37.34
Govt/PWD	18.66	23.98
Total	213.70	228.97

Necessary application for diversion of forestland due to change in location of upper reservoir has been submitted online to State Forest Dept. /MoEF&CC.

The comparative statement of salient features of the project with reference to earlier proposal and revised proposal is given below:

		Particulars	Standalone pumped storage component of Saundatti IREP [As per Oct-2019 MoM]	Standalone pumped storage component of Saundatti IREP [Revised Proposal as per New Layout-Modified]
1		Project	Standalone Pumped Storage Project	Standalone Pumped Storage Project
2		Location		
	a	Country	India	India
	b	State	Karnataka	Karnataka
	c	District	Belagavi	Belagavi
3		Geographical Co-Ordinates		
	a	Saundatti IREP Reservoir - Upper (Now Proposed)		
		Latitude	15° 51' 21.84" N	15° 51' 21.84" N
		Longitude	75° 00' 19.50" E	75° 00' 19.50" E
	b	Renuka Sagar Reservoir -Lower (Existing)		
		Latitude	15° 49' 17.15" N	15° 49' 17.15" N
		Longitude	75° 05' 48.23" E	75° 05' 48.23" E
4		Access to Project Site		
	a	Airport	Belagavi	Belagavi

		Particulars	Standalone pumped storage component of Saundatti IREP [As per Oct-2019 MoM]	Standalone pumped storage component of Saundatti IREP [Revised Proposal as per New Layout-Modified]
	b	Rail head	Dharwad	Dharwad
	c	Road	Dharwad (45 Km)	Dharwad (45 Km)
	d	Port	Karwar	Karwar
5		Project		
	a	Type	Standalone Pumped Storage Project	Pumped Storage Project
	b	Storage Capacity	13734 MWH	14616 MWH
	c	Rating	1260 MW	1260 MW
	d	Peak operation duration	10.90 Hours daily	11.60
6		Saundatti IREP Reservoir-Upper (Now Proposed)		
	a	Live Storage	1.00 TMC	1.00 TMC
	b	Dead Storage	0.03 TMC	0.03 TMC
	c	Gross Storage	1.03 TMC	1.03 TMC
	d	Full Reservoir level (FRL)	EL +855.00 m	EL +858.00 m
	e	Top of bund level	EL + 858.00 m	EL +855.00 m
	f	Min. Draw Down Level (MDDL)	EL +825.00 m	EL +825.00 m
	g	Type of Dam	Rock fill Embankment with central clay core	Rock fill Dam with central clay core
	h	Height of Dam from Deepest foundation level	38.00 m	43.00 m
	i	Total length at the top of dam/Embankment	5177.00 m	5776 m
	j	Top width of the dam	10.0 m	10.0 m
7		Renuka Sagar Reservoir -Lower (Existing)		
	a	Catchment Area	2176 Sq. KM	2176 Sq. KM
	b	Max. flood discharge	5239 cumecs	5239 cumecs
	c	Live Storage	29.34 TMC (830.81 M Cum)	830.81 MCum (29.34 TMC)
	d	Dead Storage	8.35 TMC (236.46 MCum)	236.46 MCum (8.35 TMC)
	e	Gross Storage	37.69 TMC (1067.27 MCum)	1067.27 MCum (37.69 TMC)
	f	Full Reservoir level (FRL)	EL +633.832 m	EL +633.83 m
	g	Min. Draw Down Level (MDDL)	EL +623.93 m	EL +623.93 m
	h	Length of Dam	154.53 m	154.53 m
	i	Height of Dam	40.23 m	40.23 m

		Particulars	Standalone pumped storage component of Saundatti IREP [As per Oct-2019 MoM]	Standalone pumped storage component of Saundatti IREP [Revised Proposal as per New Layout-Modified]
8		Power Intake Structure		
	a	Type	Diffuser Type	Diffuser Type
	b	No. of Vents	5 nos.	5 nos.
	c	Size of Each Intake	23.50m (W) x 7.50 m (H) including piers	23.50m (W) x 7.50 m (H) including piers
	d	Length of each Intake	36.45 m (covered with RCC slab at top up to Intake Gate)	39.55 m (covered with RCC slab at top up to Intake Gate)
	e	Elevation of Intake centre line	EL 814.10m	
	f	Elevation of bell mouth bottom	EL +811.10 m	EL +811.40 m
	g	Design Discharge of each Intake (Turbine mode)	142.31 Cumec	136.49 Cumec for units 3 to 6 136.88 Cumec for units 1 & 2
	h	Trash rack type	Vertical with inclination of 15°	-
	i	Size of Trash Rack	3 nos. of 6.83m(W) x 7.71m(H) for each unit	-
	j	Numbers & Size of Intake Service Gate	5 Nos. – 4.95 m (W) x 6.0 m (H) with Rope drum Hoist	-
	k	Numbers & Size of Intake Emergency Gate	1 No. – 4.95 m (W) x 6.0 m (H) with Rope drum Hoist	-
9		Head Race Tunnel	--	-
	a	Head Race Tunnel – 2No's	--	
	b	Type of tunnel	--	
	c	Diameter of Tunnel	--	
	d	Length of Tunnel	--	
	e	Bed Slope	--	
10		Surge Chamber		-
	a	Type	--	
	b	Dimensions	--	
11		Penstock Tunnel/Pressure Shafts		
	a	Type	Finished steel lined - circular	Steel lined – circular
	b	Number of Penstocks	5 Nos Independent Penstocks Wherein 1 No Independent Penstock bifurcated in to 2	5 Nos
	c	Diameter of penstock	6.0 m	6.0 m dia
	d	Length of penstock	929.34 m	1029.9 m (173.50 +235.31+620.69)

		Particulars	Standalone pumped storage component of Saundatti IREP [As per Oct-2019 MoM]	Standalone pumped storage component of Saundatti IREP [Revised Proposal as per New Layout-Modified]
12		Powerhouse		
	a	Type	Surface Powerhouse	Surface Powerhouse
	b	Dimensions	L 200.00m x B 24.00 m x H 51.12 m	L 196.50m x B 24.00 m x H 51.10 m
	c	Centre line of Unit	EL 587.00 m	EL 587.00 m
13		Tail Race Channel	Trapezoidal Unlined	Trapezoidal Unlined
	a	Length of the channel	1688 m	1749 m
	b	Bed width	70m	45m
	c	Full supply depth	5.10m	-
	d	Bed fall /Slope	1 in 10000	-
14		Tail Race Tunnel		
	a	Type	Concrete Lined – Circular	Concrete Lined – Circular
	b	No. of Tunnel	6 nos.	6 nos. (4 individual tunnels for Larger units & 2 individual tunnels for Smaller units)
	c	Dia. of Tunnel	7m for larger unit & 5m for Smaller unit	7.0m for larger units & 5.0m for Smaller units
	d	Length of Tunnel	250.85 m	225.47 m
	e	Design Discharge	142.31 Cumec for larger units & 71.16 Cumec for Smaller units	136.49 Cumecs for larger units & 136.88 for smaller units
15		Tail Race Outlet		
	a	Type	Diffuser Type	Diffuser Type
	b	No. of Outlet	6 Nos.	6 Nos.
	c	Size of Outlet	23.50 m (W) x 8.0 m (H) for Larger Unit 20.0m (W) x 5.20m (H) for Smaller Unit	23.50 m (W) x 8.0 m (H) for Larger Unit 20.0m (W) x 5.20m (H) for Smaller Unit
	d	Length of each Outlet	34.36 m (covered with RCC slab at top up to Intake Gate)	37.40 m (covered with RCC slab at top up to Intake Gate)
	e	Elevation of Outlet Centre line	EL +614.10m for Larger Unit EL +613.10 for Smaller Unit	EL +614.10m
	f	Elevation of Outlet bottom	EL +610.60m	EL +610.60m for Larger Unit EL +611.60 for Smaller Unit
	g	Tailrace outlet Service Gate	4nos. of 5.80 m (W) x 7.00 m (H) for large unit & 2 nos. of 4.20 m (W) x 5.00 m (H) for smaller unit with Hydraulic Hoist	-

		Particulars	Standalone pumped storage component of Saundatti IREP [As per Oct-2019 MoM]	Standalone pumped storage component of Saundatti IREP [Revised Proposal as per New Layout-Modified]
	h	Tail Race outlet Emergency Gate	1 No. – 5.80 m (W) x 7.0 m (H) for Larger Units & 1 No. – 4.20 m (W) x 5.0 m (H) for Smaller Units With Rope Drum Hoist	-
16		Tailrace Trash rack		
	a	Type	Vertical with inclination of 15°	-
	b	Size of Trash rack	3nos. of 6.83m(W) x 8.23m(H) for each Larger Unit 3 nos. of 5.67m (W) x 5.32m (H) for each Smaller Unit	-
	C	Sill Level		-
	d	Top of trash rack		-
17		Electro Mechanical Equipment		
	a	Pump Turbine	Francis type, vertical shaft reversible pump-turbine	Francis type, vertical shaft reversible pump- turbine
	b	Total No of units	6 nos. (4 X 252MW & 2 X 126 MW)	6 nos. (4 X 252MW & 2 X 126 MW)
	c	Centreline of Unit	EL +587.00m	EL +587.00m
	d	Total Design Discharge (Turbine Mode)	711.56 Cumec	--
	i	252 MW Turbines		
	a	Pump Turbine	Francis type, vertical shaft reversible pump-turbine	Francis type, vertical shaft reversible pump-turbine
	b	Total No of units	4 Units (All units are Variable speed)	4 Units (All units are Variable speed)
	c	Rated Pumping Head	218.12 m	216.12 m
	d	Pump Capacity	303 MW	297 MW
	e	Rated Head in Turbine mode	205.12 m	206.82 m
	f	Turbine Capacity	252 MW	252 MW
	g	Turbine Design Discharge	142.31 Cumec for each unit	136.49 Cumec for each unit
	h	Synchronous speed	187.50 rpm	--
	ii	Generator-Motor		
	a	Type	Three phase, alternating current asynchronous, generator motor semi umbrella type with vertical shaft	Three phase, alternating current asynchronous, generator motor semi umbrella type with vertical shaft
	b	Number of units	12 Units i.e 3 Nos. per unit	4 units
	c	Rated Capacity	Generator – 252 MW Pump Input – 303 MW	Generator – 252 MW Pump Input – 297 MW

		Particulars	Standalone pumped storage component of Saundatti IREP [As per Oct-2019 MoM]	Standalone pumped storage component of Saundatti IREP [Revised Proposal as per New Layout-Modified]
	d	Rated Voltage	18 KV	--
	iii	Main Power Transformer		
	a	Type	Outdoor Single-Phase Power transformers with Off-Circuit tap changer (OCTC)	Indoor Single-Phase Power transformers with Off-Circuit tap changer (OCTC)
	b	Number of units	12 Units	12 Units i.e 3 Nos. per unit
	c	Rated Capacity of each unit	Single Phase 125 MVA	Single Phase 125 MVA
	d	Rated Voltage	Primary – 18 KV ; Secondary - 400 kV adjustable range of the secondary voltage: -10% to +10%(3kV/tap)	
	iv	126 MW Turbines		
	a	Pump Turbine	Francis type, vertical shaft reversible pump-turbine	Francis type, vertical shaft reversible pump-turbine
	b	Total No of units	2 Units (Both are Variable speed)	2 Units (Both are Variable speed)
	c	Rated Pumping Head	218.12 m	217.42 m
	d	Pump Capacity	170 MW	170 MW
	e	Rated Head in Turbine mode	205.12 m	206.22 m
	f	Turbine Capacity	126 MW	126 MW
	g	Turbine Design Discharge	71.16 Cumec	68.44 Cumec
	h	Synchronous speed	250.00 rpm	--
	vii	Generator-Motor		
	a	Type	Three phase, alternating current asynchronous, generator motor semi umbrella type with vertical shaft	Three (3) phase, alternating current Asynchronous, generator motor semi umbrella type with vertical shaft
	b	Number of units	2 Units	2 Units
	c	Rated Capacity	Generator – 126MW; Pump Input - 170MW	Generator – 126MW; Pump Input - 170MW
	d	Rated Voltage	18 KV	-
	viii	Main Power Transformer		

		Particulars	Standalone pumped storage component of Saundatti IREP [As per Oct-2019 MoM]	Standalone pumped storage component of Saundatti IREP [Revised Proposal as per New Layout-Modified]
	a	Type	Indoor, 3-Ph transformers with Off-Circuit tap changer (OCTC)	Indoor, 1-Ph transformers with Off-Circuit tap changer (OCTC)
	b	Number of units	6 Units i.e. 3 Nos. per unit	6 Units i.e. 3 Nos. per unit
	c	Rated Capacity of each unit	Single Phase 70 MVA	Single Phase 70 MVA
	d	Rated Voltage	Primary – 18 KV ; Secondary - 400 kV adjustable range of the secondary voltage: -10% to +10%(3kV/tap)	-
18		420KV Gas Insulated Switchgear		
	a	Type of GIS	Indoor Type	Indoor Type
	b	No. of GIS units	One No. with bus sectionaliser	One No. with bus sectionaliser
	c	Location	Inside GIS Building above ground	Inside GIS Building above ground
	d	Scheme	Double Busbar Arrangement with bus sectionaliser	Double Busbar Arrangement with bus sectionaliser
19		POWER EVACUATION		
	a	Voltage Level (KV)	400 KV	400 kV
	b	Length (KM)		
		No. of Transmission lines	One Double Circuit Transmission Line	One Double Circuit Transmission Line
	c	Structure		
	d	Terminating at	Central Pooling Substation (CPSS)	Central Pooling Substation (CPSS)
20		Estimated Cost		
	a	Civil Works	3294.94 Cr.	3294.94 Cr
	b	E & M Works incl. transmission	2118.67 Cr.	2031.25 Cr
		Sub-Total	5413.61 Cr	5326.19 Cr
	c	IDC & Others	639.14 Cr.	639.14 Cr
		Total Project Cost	5965.33 Cr.	5965.33 Cr

The Project envisages re-utilization of 1 TMC of water of the Renuka Sagar reservoir by recirculation. The water in the Renuka Sagar reservoir (existing lower reservoir) will be pumped up and stored in the proposed Pumped Storage component of Saundatti IREP reservoir (upper Reservoir) and will be utilized for power generation. Therefore, there is no intended catchment of this project and hydrological assessment is not required.

The Primary data for Baseline Environmental Conditions was collected through field surveys for three seasons of the year: Winter / Lean season (January 2018), Summer season (May 2018), Monsoon season (August 2018) and additional one season data (December 2019).

- **Ambient Air Quality:**

Ambient Air Quality Monitoring was carried out at 6 locations in the study area. The level of pollutant observed at various sampling stations was much lower than the permissible limit of the National Ambient Air Quality Standard notified by CPCB.

- **Ambient Noise Levels:**

The sound levels on an average ranged from 48.0 to 55.9 dB(A) (day time observations), which are within the Ambient Noise Standards ranging from 55 dB(A) during day time in residential area to 65 dB(A) during day time in commercial area.

- **Soil:**

Clayey Loamy soils are predominant in the study area. The soil fertility in general varies from Low to Medium category. Based upon Nutrient Index in terms of NPK in case of Nitrogen and Potassium is Medium (2.00), in case of Phosphorus is Low i.e. NI is 1.00.

- **Water:**

The data on water quality has been collected to evaluate surface water (reservoir and pond) and ground water quality (tube-wells, hand pumps, wells, etc.) in study area. The water quality in the study area in general is good. Except for agricultural activities there are no sources of pollution of water bodies in the area. According to BIS standards for Drinking Water (2012) all the ground water samples collected from the study area fall within permissible by CPCB.

- **Flora:**

Quadrat sampling was undertaken for carrying out phyto-sociological surveys of the vegetation in the study area. The conservation status (Rare, Endangered and Threatened) of all species of plants recorded from the study area was assessed based on IUCN Red list of Threatened Species. Based upon earlier field surveys an inventory of 170 flowering plant species belonging to 51 families was prepared. This list includes 65 species of trees, 35 species of shrubs and 70 herbaceous species. During additional study survey 66 species of trees, 25 species of shrubs and 51 herbaceous species were recorded from the study area. In addition to 170 species recorded during earlier survey 10 new species (1 tree, 3 shrubs and 6 herbs) viz; *Macaranga peltata*, *Cassia auriculata*, *Randia dumetorum*, *Wattakaka volubilis*, *Vernonia cinerea*, *Mimosa pudica*, *Erianthus munja*, *Setaria glauca*, *Thysanolaena agrostis* and *Hedyotis puberula* were observed in the study area. All the species recorded during additional study survey are under least concern category of IUCN Red List 2020.1.

- **Fauna:**

As per IUCN Red list of Threatened Species (Version 2018.2) all the mammalian and avifaunal species reported from the study area are under Least Concern (LC) category. During field study survey species like *Semnopithecus entellus* (Grey Langur), *Macaca* (Rhesus

macaque) *Funarbulus palmarum* (Indian Palm Squirrel), *Herpestes auropunctatus* (Small Indian Mongoose) and *Lepus nigricollis* (Common hare) etc. are sighted from the study area. All these species are common in study area. A total of 41 species of bird species belonging to 28 families were reported based on Three seasons survey in the study area. During additional study survey 32 bird species were sighted from the study area. Among these 32 bird species 16 species were sighted only during additional study survey. As per IUCN Red list of Threatened Species. Version 2020.1 all species reported during additional study are under Least Concern (LC) category of IUCN Red List of Threatened species. According to 1WPA 1972 all species recorded from the study area are under Schedule IV and V, only one bird species falls under Schedule I i.e. *Pavo cristatus* (Indian Peafowl).

During the Project construction & operation phase various short & long-term Impacts are envisaged like immigration of Construction Workers, Muck Disposal: impacts due to road construction, Impact on Water Quality, Sewage from Construction worker Camps, Effluent from Construction Plants and Workshops, Impact on Terrestrial Flora, Impact on Terrestrial Fauna, Disturbance to Wildlife, Impact on Noise Environment, Impact on Air Quality, Impact on Socio-economic Environment etc. For effective mitigation of the envisaged impacts detailed management measures were proposed under Environmental Management Plan like Biodiversity Conservation & Wildlife Management Plan, Muck Management Plan, Solid Waste Management Plan, Public Health Delivery System, Energy Conservation Measures, Landscaping, Restoration & Green Belt Development Plan, Compensatory Afforestation Plan, Air & Water Management Plan along with Environmental Monitoring Plan, Rehabilitation & Resettlement Plan, Disaster Management Plan and Corporate Environment Responsibility Plan. An amount of Rs. 8762.34 lakhs has been allocated for the implementation of Environmental Management Plan and Corporate Environment Responsibility Plan

In order to visualize the worst-case scenario, Dam Break Modeling was undertaken, and an inundation map was prepared. Based upon the outputs generated from this modeling, a Disaster Management Plan has been formulated.

All project components as well as entire study area falls under Saundatti taluka (Parasgad) in Belagavi district. The private land identified for the project falls in two revenue villages viz. Chakrageri and Karlakatti under Saundatti Tehsil. The village Chakrageri is inhabited and the owners of the identified land reside in Karlakatti Village. The R&R Plan has been prepared in line with The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (RFCT_LARR) and The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Karnataka) Rules, 2015.

Observation and recommendation of the EAC in earlier meetings

EAC in the 28th meeting held on 31.10.2019, observed that project was earlier discussed in 22nd EAC meeting held on 27.02.2019 and recommended the project for environment clearance subject to submission of Stage I Forest clearance. Now PP informed to the Ministry that during DPR studies, it was evaluated that the project can be further optimized with minor changes in upper reservoir location, which has already been recommended by EAC for environmental clearance.

EAC noted that there are the changes proposed in the project configuration especially location of the dam site however Installation Capacity of the project (1260 MW) is same. EAC based on the information as presented and submitted to the Ministry by the PP, decided to revisit the recommendation made in the meeting held on 27.02.2019 and deferred the project for following:

1. One season baseline data to be collected a fresh for all the environmental attributes and compared with the existing BLD.
2. Approved Hydrology studies and layout from CWC shall be submitted to the Ministry.
3. Approved Power Potential Studies from CEA to be submitted.
4. Consolidated report based on the fresh one season baseline data to be prepared and uploaded on the State PCB website for inviting the comments/suggestion from the stake holders. EIA/EMP report incorporating the compliance on the comments/suggestion received shall be submitted to the Ministry for further necessary action.

Project Proponent submitted the above information to the Ministry on 25.09.2020, accordingly proposal was listed in the agenda of 3rd EAC meeting. Project Proponent alongwith consultant made the detailed presentation before the EAC on the additional information sought in 28th meeting held on 31.10.2019 and apprised following to EAC:

- Ensuring compliance to the EAC's recommendations, baseline data was collected covering physio-chemical and biological parameters during December 2019.
- EIA Report updated to include additional baseline data and revised project features.
- Updated draft final report was submitted to Karnataka State Pollution Control Board (KSPCB) for display on website inviting comments/suggestions from general public on 11.06.2020.
- The report was uploaded on PCB website on 26.06.2020 for a period of 30 days; no comments and suggestions have been received from the public in 30 days period as confirmed by KSPCB's letter No. PCB/462/17 Cat/EPH-HPI/Greenko Solar Energy Ltd/2020-21 dated 27.08.2020.
- Accordingly, the updated EIA/EMP report was submitted to MoEF & CC on 25.09.2020 for consideration of the project for environmental clearance.

Observation and recommendation of the EAC in present meetings

Total private land required for various construction activities is about 37.34 ha. The private land to be procured for the Project does not have any habitation. The private land required for the project is proposed to be purchased through direct negotiations between land owners and Project Proponent. Private land acquisition will be as per the provisions of RFCTLARR, 2013 and RFCTLARR issued by the Government of Karnataka vide Notification RD 152 AQB 2013, dated 17-10-2015.

PP further informed that as recommended by EAC during its meeting held on October 31, 2019; the field surveys were carried out for the collection of additional one season data in the study area during December 2019 covering data/ information on physical and biological environment parameters.

An amount of Rs. 4624.50 lakhs excluding CER has been allocated for the implementation of Environmental Management Plan and are summarized in the table as below:

SI. No	Component of EMI)	Capital Cost (Rs. in lakh)	Recurring Cost (Rs. in lakh)			Total Cost (Rs.in lakh)
			Year 1	Year 2	Year 3	
1	Biodiversity Conservation & Wildlife Management Plan	280.00	-	-	-	280.00
2	Muck Dumping and Management Plan	-	162.64	162.64	60.00	385.28
3	Solid Waste Management Plan	115.00	23.72	23.72	23.72	186.16

4	Public Health Delivery System	60.00	29.00	29.00	29.00	147.00
5	Energy Conservation Measures	65.00	40.00	40.00	40.00	185.00
6	Landscaping, Restoration and Green Belt Development Plan	17.50	0.00	0.00	132.00	149.50
7	Environmental Monitoring Program	4.00	28.30	28.30	28.30	88.90
8	Rehabilitation and Resettlement Plan	517.50	-	-	-	517.50
9	Disaster Management Plan		25.00	25.00	225.00	275.00
	Total	1059.00	308.66	308.66	538.02	2214.34
	Other Costs					
11	Compensatory Afforestation (estimated cost)	3565.50				3565.50
	Total	4624.50				

The EAC deliberated on the information submitted by the PP (EIA/EMP report, Form 2, Public hearing issues etc.) along with information submitted in compliance of EAC recommendation in 28th meeting. EAC noted that the as per the provisions of EIA notification, 2006, Public Hearing was conducted by the Karnataka State Pollution Control Board, on 07/01/2019 at the Project location adjacent to Mallur Electrical Sub-station, Karlakatti village, Yakkundi Panchayat, Saundatti taluk, Belagavi District, Karnataka. Further modified /amended EIA/EMP report incorporating the additional One season data was uploaded on SPCB website for a period of 30 days for inviting public comments, if any, as part of public consultation as per the directions of MoEF & CC. and no comments and suggestions have been received from the public in 30 days period as confirmed by KSPCB's letter No. PCB/462/17 Cat/EPH-HPI/Greenko Solar Energy Ltd/2020-21 dated 27.08.2020.

EAC further noted that instant project involves 160.40 ha and application for 160.40 ha of forest land has been submitted to MoEF&CC vide proposal No.: FP/KA/HYD/37723/2018 dated 11.10.2019 for forest clearance. EAC also noted that there is no National Park, Sanctuary, Biosphere Reserve etc. located within the Study area (i.e. 10 km radii) of the Project. EA after detailed deliberation on the information submitted by the PP and as presented recommended the proposal for grant of Environmental Clearance subject to compliance of applicable Standard EC conditions with the following additional conditions:

1. The Environmental Management Plan (EMP) shall be revised incorporating CER activities under local area development plan under EMP. Revised EMP shall be submitted to the Ministry at the earliest.
2. Stage I Forest Clearance shall be submitted to the Ministry prior to grant of Environmental Clearance.
3. After 5 years of the commissioning of the project, a study shall be undertaken regarding impact of the project on the environment. The study shall be undertaken by an independent agency.
4. Any other clearances from any other organization/department as applicable to the proposed project shall be obtained.

5. Solid waste generated, especially plastic waste, etc. should not be disposed of as landfill material. It should be treated with scientific approach and recycled. Use of single-use plastics may be discouraged.
6. Wildlife Conservation plan for all Schedules I species shall be implemented with the approval of the Competent Authority.
7. 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.
8. PP shall procure construction material only from those Organizations having all valid legal/statutory clearances/permissions or necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and as amended thereof.

Item No. 3.1.3 Lower Orr project at village Didoni in Shivpuri District, Madhya Pradesh by National Water Development Agency – Regarding reconsideration of Environmental Clearance
Proposal No. IA/MP/RIV/40729/2013, File No. J-12011/31/2011-IA-I (R)

Project Proponent alongwith the Consultant (WAPCOS Limited, 76C, Institutional Area, Sector-18, Gurugram, Haryana-15) made the presentation before the EAC and informed following to the EAC:

The project envisages construction of a 45 m high and 2,218 m long dam across Orr river near village Didauni on the border of Shivpuri and Ashok Nagar District of Madhya Pradesh to provide irrigation facility to 90,000 ha of area. Total land requirement is 3730 ha, out of which 968.24 ha is forestland, 1332.24 ha government land and 1429.52 ha is private land. Total submergence area is about 2723.70 ha. A total of 7 fully affected villages and 5 partial villages consisting of 1,285 families are likely to be affected by this project. The total cost of the project is about Rs. 3,065.14 Crores and it is proposed to be completed in 5 years.

The main project components include construction of a 45 m high and 2,218 m long dam across river Orr and 91.260 km long main canal at left bank of this river. Bridges shall be provided at suitable location along the canal alignment. Apart from this, Canal Aqueduct/Drainage syphon structure shall be constructed. A head regulator is to be provided at the head of Lower Orr main canal. The project will provide annual irrigation to 90,000 ha area in Shivpuri and Datia districts of MP. Besides, 6 MCM water will be provided for drinking water supply to the enroute villages and towns in the vicinity of the canal. About 1.65 lakh people will get drinking water at a consumption rate of 100 lpcd.

The coordinates of the dam site are 24°50'50" N and 78°05'55" E. The proposed dam site is located at a tributary of Betwa River near Didauni village in Khaniadhana tehsil on the border of Shivpuri and Ashok Nagar District of Madhya Pradesh which is at a distance of about 6 km from Chanderi - Pichhore Road.

The total land to be acquired for the project is 3,730 ha. The ownership status of land to be acquired for the Lower Orr Project is given in Table on next page:

Table: Details of Land Requirement

S. No.	Land Use Details	Submergence Area (ha)	Canal Network (ha)	Total Land (ha)
1.	Forest	968.243	70.0	1038.243
2.	Culturable Area	853.287	475.0	1328.287
3.	Unculturable Area	556.605	375.0	931.605
4.	Built up Area	19.614	86.0	105.614
5.	Other lands	325.951	-	325.951
	Total	2723.700	1006.0	3729.7 say 3730 ha

The submergence area of proposed Lower Orr Reservoir is 2,723.70 ha which affects 12 villages. Seven villages will be fully submerged while 5 villages shall be partially submerged. In partially affected villages, only agriculture land is coming under submergence. A total of about 944 families will be affected due to submergence.

The project section is not passes through any sanctuary or ecological sensitive area within 10 km area of the project site and command area except some sites of reserve forests and protected forests.

The total catchment area of the basin is 43,895 km², out of which 30,217 km² lies in M.P. and the remaining 13,678 km² lies in U.P. The dependable flows for various dependable years like 50%, 75% and 90% are 501.15 MCM, 361.965 MCM and 263.98 MCM, respectively. Likewise, the water demand and environmental flows requirement are 293.45 MCM and 44.898 MCM, respectively. From the simulation studies, it is seen that about 329.67 MCM water can be utilized from the reservoir for irrigation (apart from 6 MCM for drinking water supply and 44.9 MCM environmental releases) at 371.80 MCM storage capacity.

Brief of base line Environment:

Soils: The pH in various soil samples ranged from 7.26 to 7.95. The Electrical Conductivity (EC) ranged from 0.140 to 0.220 mS/cm. The EC level indicates the non-saline nature of soil. The Bulk density ranged from 1.22 to 1.42 g/cc and the nitrogen level ranged from 152 to 250 kg/ha.

Water Quality: The pH level in various seasons ranged from 7.6 to 7.8 indicating neutral nature of water. The TDS level ranged from 156 to 178 mg/l, 131 to 139 mg/l and 155 to 175 mg/l in pre-monsoon, monsoon and winter seasons, respectively. The EC levels were well below the permissible limit of 2250 μ S/cm specified for irrigation water requirements. The hardness and BOD values are well within the permissible limits, which indicate the absence of organic pollutants.

Ground Water Quality: The pH level ranges from 7.1 to 8.0 which indicates alkaline nature. The chlorides level ranged from 30.4 to 92.4.6 mg/l well below the permissible limit of 200 mg/l. The sulphates level ranged from 21.5 to 47.4 mg/l well below the permissible limit. The TDS levels and BOD values are well within the permissible limit, which indicates the absence of organic pollutants loading.

Ambient Air Quality: The ambient air quality with respect to the study zone of 10 km radius around the proposed site forms the baseline data. There are no major sources of air pollution in the project area. The sources of air pollution in the region are due to vehicular traffic, dust emissions from unpaved village roads and domestic fuel burning. The ambient air quality was monitored at various locations in the study area, and the ambient air quality was found to be well within the permissible limits.

Noise Environment: The noise level in winter and pre-monsoon seasons at various sampling stations ranged from 36.6 to 38.1 dB(A) and 38.4 to 40.3 dB(A), respectively. The day time equivalent noise level in monsoon season at various sampling stations ranged from 36 to 38 dB(A). The noise levels monitored at various locations in three seasons are well within the permissible limit specified for residential areas.

Land Use Pattern: The land use pattern of the study area has been done through digital satellite imagery data. Remote sensing satellite data of Resource Sat-2 Satellite (LISS-III, Sensor) data was procured from National Remote Sensing Agency (NRSA), Hyderabad. The data was processed through ERDAS software package available with WAPCOS. With ERDAS imagine, the processors, regardless of their GIS background, can visualize, manipulate, analyze, measure and integrate any type of geographic imagery and geospatial information into 2D and 3D environments.

Flora: The Forest cover of Ashoknagar district is about 19.01% of its total geographical area. Out of the total forest area, 0.33% is teak forest and the rest 99.67% is mixed forests. The present study revealed that out of 198 flowering plants, the biggest lifeform of plants was herbs, contributed 78 species (39.39%) which is followed by trees with 48 species (24.24%), shrubs with 34 species (17.17%), grasses with 21 species (10.61%), sedges with 5 species (2.53%), climbers with 9 species (4.54%), epiphytes with 2 species (1.01%) and parasite with single species (0.51%)

Fauna: Some of the common mammals found in the area are Blue Bull-Neel Gai, Wild Bora, Musk-Shrew, Hedgehog, Bearded Sheath Tailed Bat and Short nose fruit bat. A total of 82 species of birds were recorded during the survey. Dominant bird species observed during the survey are magpie robin, spotted dove, Brahmini myna, house crow, etc. Total of nine species of amphibians were recorded from the study area. These species belong to four families namely Bufonidae, Microhylida, Ranidae and Rhacophozidae

Aquatic Ecology: The 4 species of fishies viz., juveniles of *Catla* spp., *Cirrhinus mrigala* (Mrigal), *Labeo* spp., *Notopterus notopterus* (Patra), *Chana* spp., and *Mastacembelus armatus* (Baam) have been spotted at study area. In addition, interaction with local fishermen revealed the confirmation of some other fish species which are *Labeo* sp., *Channa striatus* (Sanwal), Putty and Naren (mrigal) species. These are commonly distributed species in Madhya Pradesh. None of the species falls under the endangered or threatened categories.

Brief description on Anticipated Environment Impacts and Mitigation measures:

The **impacts on water Environment** include sewage from labour camps, effluent from run off and project colony, reservoir water quality and changes in water quality due to increased use of fertilizers. The mitigation measures includes provision for mobile sewage treatment plants, construction of community latrines and sewage treatment plant during operation phase, Improved Agricultural Practices Integrated Plant and Nutrient Management

The **Impacts on air environment** include pollution due to fuel combustion from various equipment, emissions from crushers, fugitive emissions from various sources, blasting operations and pollution due to increased vehicular movement. The mitigation measures include turning off construction equipment and vehicles when not used for extended periods of time, effective traffic management to be undertaken to avoid significant delays in and around the project area and prohibition of unnecessary idling of construction vehicles.

The **impacts on noise environment** include operation of construction equipment, due to increased vehicular movement and impacts on labour, due to drilling and blasting. The mitigation measures include vehicles to be equipped with mufflers, staging of construction equipment and unnecessary idling of equipment within noise sensitive areas to be avoided

The **Impacts on land environment** includes environmental degradation due to immigration of labour population, operation of construction equipment, soil erosion, construction of roads, change in land use pattern and acquisition of land. The mitigation measures include Restoration Plan for quarries, filling of depressions lying of the top soil, rocks for landscaping and barbed wire fencing.

The **impacts on flora and fauna** include increased human interferences during construction phase, cutting of trees to meet their requirements for construction of houses and other needs, collection of non-timber forest produce, noise from operation of various construction equipment, etc. The mitigation measures include provision of Free Fuel, Compensatory Afforestation and Biodiversity Conservation Plan

Brief note on Risk Management and disaster Management:

The following measures have been covered in disaster and risk management plan:

Dam Safety and Maintenance Manual that should be eloquent in respect of quantum of specific construction material needed for emergency repair along with delineation of the suitable locations for its stocking, identify the much needed machinery and equipment for executing emergency repair work and for accomplishing the evacuation plan.

Emergency Action Plan (EAP) include all potential indicators of likely failure of the dam, since the primary concern is for timely and reliable identification and evaluation of existing of potential emergency.

Evacuations Plans includes evacuation plans and procedures for implementation based on local needs. These could be demarcation / prioritization of areas to be evacuated, notification procedures and evacuation instructions, safe routes, transport and traffic control, safe areas/shelters and Functions and responsibilities of members of evacuation team

Public awareness for disaster mitigation via listening to the radio for obtaining information

Social Impact Assessment and Rehabilitation and Resettlement Plan:

The Lower Orr Project likely to affect land in 12 Villages of Ashok Nagar and Shivpuri Districts. Seven villages will be fully submerged and rest five shall be partially submerged. The social risks due to proposed project include landlessness, joblessness, homelessness, marginalization, increased morbidity and mortality, food insecurity, loss of access to common property, and social (community) disarticulation.

The R&R plan has been devised using the norms and guidelines of the “Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013”. There are no families losing homesteads hence there is no Resettlement Plan needs to be prepared. As per the data there are 1285 families that are affected due to the proposed project. The Rehabilitation Plan is prepared for the 1285 families that will be losing land only. The total budget earmarked for implementation of R&R Plan shall be Rs. 25565.17 lakh.

Environmental Management Plan with budget breakup (Capital & Recurring) in Tabular form:

The following Environmental Management Plan were covered in the study along with their budget break up:

S. No.	Item	Cost (Rs. crore)
1.	Environmental Management in labour camp	10.80
2.	Control of Water Pollution	0.35
3.	Air Pollution Control Measures	0.53
4.	Public health delivery system	5.19
5.	Restoration and Landscaping of construction sites	4.66
6.	Energy Conservation measures	0.50
7.	Catchment Area Treatment Plan	47.39
8.	Disaster Management Plan	3.00
9.	Compensatory Afforestation and Bio-diversity conservation	41.37
10.	Greenbelt development	0.99
11.	Fisheries Management	8.09
12.	Environmental Monitoring during construction phase	1.30
13.	Purchase of noise meter	0.015
14.	Purchase of meteorological instruments	0.070
15.	Water Quality Testing Kits	0.10
16.	Resettlement and Rehabilitation	255.651
17.	Local Area Development Plan	4.98
18.	Livelihood Plan for PAFs	16.90
19.	Monitoring & Evaluation of R&R Plan	0.60
	Total	402.486

Project benefit including employment details: The main project benefits include:

- (i) Irrigation Benefits
- (ii) Drinking Water Supply
- (iii) Flood Control Benefits
- (iv) Other incidental benefits like recharge of ground water in command area, development of agro based industries/food processing units, employment generation in construction phase and afterwards, development of tourist spots, development of infrastructure etc.
- (v) About 190 families can be provided employment through reservoir fisheries
- (vi) Due to increase in food grain production, the socio-economic condition of farmers will improve in general, agricultural labourers will get employment in the nearby area
- (vii) The employment potential in with out -project phase for a cropped area of 45047 ha has about 4.5 million which will increase to 13.5 million mandays in project operation phase.

Public hearing details (including brief on the issues raised):

The advertisement for conducting the public hearing in Shivpuri and Ashok Nagar districts was published on 18.08.2015 in the Patrik, Nai Duniya and Hindustan Times. The main issues that were raised during public hearing were provision of Employment to project affected families, land for resettlement, Compensation cost for the submerged villages and loss of livelihood.

Status of other statutory clearances.

Stage-I clearance/in-Principle approval has been accorded by Forest Advisory Committee (FAC) of MoEF&CC for diversion of 968.24 ha of Forest Land in favour of National Water Development Agency vide its letter F.No. 8-08/2016-FC dated 12.02.2019.

Observation and Recommendation of the EAC in the present (03rd) meeting:

EAC after detailed presentation by the PP observed following:

- i. Lower Orr dam, Madhya Pradesh proposed to be developed as a National Project under Ken-Betwa Link Project, Phase-II by Water Resources Department, Government of Madhya Pradesh and National Water Development Agency, Ministry of Water Resource, RD&GR. The Ken-Betwa Link Project, Phase-II envisages construction of following projects: • Lower Orr • Neemkheda Barrage • Kotha Barrage • Kesari Barrage.
- ii. Total land to be acquired for the project is 3730 ha out of which 2723.70 ha of land is coming under the submergence. However, the latter involves 968.24 ha of forest land only. Environmental Clearance to the Lower Orr Dam was first appraised by the Expert Appraisal Committee (EAC), River Valley and Hydroelectric Projects in its 91st and 93rd meeting held on 8th -9th February, 2016 and 2nd May, 2016, respectively. Further, the EAC has recommended the project for grant of Environmental Clearance in its 93rd meeting held on 2nd May, 2016. As the instant project involved forest land, Ministry vide letter dated 29.07.2016 requested PP to submit the Stage I FC for 1038.243 Ha of forestland, to process the recommendation of the EAC for grant of EC.
- iii. Stage-I Forest Clearance/In-Principle Approval has been accorded by the Forest Advisory Committee (FAC) of MoEF&CC for diversion of 968.24 ha of forest land in favour of National Water Development Agency, Ashoknagar and Shivpuri Districts for construction of Lower Orr Major Irrigation Project (Ken-Betwa Link Project), Madhya Pradesh State vide its letter F.No. 8-08/2016-FC dated 12.02.2019 with certain conditions. Project Proponent submitted the Stage I FC online on 16.10.2020 for grant of Environmental Clearance.

EAC deliberated on the information submitted by the PP and regulatory provisions. EAC noted that Ministry's OM dated 19.06.2014 stipulates following provision to deal with cases wherein Stage I FC is submitted by the PP after 18 months:

“In the eventually that the stage I FC is not submitted by the Project Proponent within the prescribed time limit of 18 months (12 months + 06 months), as and when the stage I FC is submitted thereafter such project would be referred to the EAC for having a relook, in case the primary data used in the preparation of EIA report is more than three years old. In such a situation, the EAC may get the fresh data collected and on that basis and after due diligence, either reiterate its earlier recommendations, or decide for reappraising the project proposal on account of valid reasons, a the case may be. In case it is decided to reappraise the project, the committee may also decide on the requirements of documents/information for reappraisal as also the need for a fresh public hearing”

EAC in view of the above provision observed that in the instant project, Stage I FC was granted on 12.02.2019 for 968.24 ha of forest land, after almost 31 months of Ministry's letter dated 29.07.2016 and Primary data used for the EIA/EMP preparation is more than three years old. EAC therefore considering all facts related to the project and regulatory provisions, **deferred** the project for want of following information to decide whether reappraisal including need of Public Hearing is required or not:

- i. One season fresh base line data shall be collected for all the environmental attributes. Sampling location should not be less than six. Anticipated environmental impacts shall be studied using fresh baseline data.
- ii. Updated EIA/EMP report in Generic Structure (Appendix III & IIIA) given in the EIA Notification, 2006 shall be submitted.
- iii. Details of the commitment made by the Project Proponent to address the concerns raised during Public Hearing.
- iv. Details of Wildlife Sanctuary/National Park/ Eco Sensitive area, if any, within the study area shall be submitted.
- v. Details of Schedule I species, if any, in the study area shall be submitted. Conservation plan for Schedule I species shall be prepared and submitted for approval of CWLW.
- vi. Details of land acquisition alongwith status of R&R.
- vii. Form 2 shall be filled and submitted online.

Item No. 3.1.4 Shongtong-Karcham Hydroelectric Power Project in District Kinnaur of Himachal Pradesh by M/s Himachal Pradesh Power Corporation Ltd.- Regarding revalidation of the installed capacity vis-à-vis Satluj River Basin Study
Proposal No.: IA/HP/RIV/10098/2007 File No. J-12011/58/2007-IA-1 (R)

Observation and Recommendation of the EAC in earlier meeting (2nd EAC, 31.08.2020)

The project proponent has sent an email to MoEF&CC mentioning its inability to appear before EAC. The proposal is for revalidation of the installed capacity vis-à-vis Satluj River Basin Study. However, the Member Secretary briefed the in the EAC meeting that the project is under construction based on earlier EC issued during 2011 for an installed capacity of 402 MW, whereas DPR was approved for 450 MW and therefore, project proponent has requested to amend the EC for installed capacity of 450 MW in 2013. The matter was discussed in earlier EAC meetings and proponent was advised to carry out environment flow assessment, complete Public Consultation process for revised installed capacity of 450 MW before appraisal. Satluj basin study has been recommended for approval by EAC during December 2019, which has reassessed the installed capacity of Shongtong Karcham HEP as 387 MW, keeping in view its recommendations on environment flow and inter-project distance. In the meeting, the EAC opined that project proponent should immediately finalize the installed capacity keeping in view the recommendations of Satluj basin study; apply for amendment of EC accordingly to get scoping for updating EIA study, complete the public consultation process and then come for appraisal. Ministry may take a separate call whether the PP can continue with construction during the period of study and appraisal.

Observation and Recommendation of the EAC in the present meeting (3rd)

Project Proponent did not attend the meeting, however EAC opined that project proponent should immediately finalize the installed capacity keeping in view the recommendations of Satluj basin study and complete the public consultation process and then come for appraisal.

Item No. 3.1.5 Bhagpur Lift Irrigation Scheme in Jalgaon district, Maharashtra by Executive Engineer, Lift Irrigation Construction Division, Jalgaon regarding validity extension of Environmental Clearance
New Proposal: IA/MH/RIV/179585/2020; File No. J-12011/10/2000-IA-1 (R)

Project Proponent made the presentation before the EAC and informed following to the EAC:

Tapi Irrigation Development Corporation (TIDC) Jalgaon has proposed to lift, store and utilize the back water of flood from Shelgaon Project for irrigation purpose under Bhagpur Lift Irrigation Scheme. The project is designed to help meet irrigation water requirement in the district namely Jalgaon which are drought prone and backlog areas.

The Project envisages construction of a 66.53 M high & 2560 M long dam. It is proposed to lift the water from Tapi river by constructing Jack well near village Kadgaon and Storage tank is near village Bhagpur Tal. & Dist. Jalgaon. This site situated about 25 Km from district place Jalgaon. This project will provide irrigation facility to 17830 Ha. Total land requirement is 742 ha (ICA) out of which 279 ha is forest land, 4 ha is government land and 459 Ha. Total Submergence is about 613 ha. One village Bhagpur consisting 370 Nos population (As per 2011 Census) are likely to be affected by this project. The total cost of the project is about 1561.73 Crores and it is proposed to be completed in 7 Years.

The objective of the project is to irrigate two taluka Jalgaon and Jamner in Jalgaon District Irrigable command area is 17830 ha, against CCA of 22288 ha. Hence in these two taluka from 32 villages will be benefited.

The total area required for Bhagpur Lift Irrigation Scheme is about 742 ha, whereas the self-catchment of the reservoir at Bhagpur is 1015 Ha. Forest area under catchment is 477.75 Ha, non forest area under catchment is 537.25 Ha. Total Submergence area is 613 ha. The Catchment Area Treatment Plan is proposed for Bhagpur Storage Tank.

The project was accorded EC on dated vide letter no J-12011/10/2000-IA-I dt. 03/10/2002. Online application for amendment in EC was submitted on 18/10/2020 for extension of validity of EC. The land accusation process is under progress and forest & CWC clearances were obtained including compliance of forest clearance 279 ha. Physical work was commenced on 09/12/2019. The project is ongoing and due to paucity of funds, the works couldn't be taken-up fully. It is to inform that an amount of 82.86Cr. has been incurred for project expenditure so far.

Observation and recommendation of the EAC in the present meeting:

After detailed presentation by the Project Proponent, EAC observed the following:

The project was accorded EC on dated vide letter no J-12011/10/2000-IA-I dated 03/10/2002. Online application for amendment in EC was submitted on 18/10/2020 for extension of validity of EC. The land accusation process is under progress and forest & CWC clearances were obtained including compliance of forest clearance 279 ha. The project is ongoing. Reason behind delay are 1) the forest land was handed over to water resources department in February 2020. 2) paucity of funds the work couldn't take up fully. EAC further observed that physical work of the project was commenced by the PP on 9th December 2019 on private acquired land.

EAC deliberated on the information and noted EC granted on 03.10.2002 was having validity of 5 years for commissioning of the project, however PP could commence construction work in 2019. EAC therefore, opined that Environmental Clearance granted on 03.10.2002 is now invalid. Further,

PP has commenced construction in February 2019 and since then excavation work of dam, embankment construction and other miscellaneous work are 43.0%, 7.0% and 8.0% completed, respectively without having valid EC which amounts to the violation of the provisions of the EIA Notification 2006 and as amended thereof.

EAC further noted that as per Ministry's OM dated 09.09.2019, *proposals which were submitted in the respective sectoral committees for regular appraisal during or prior to violation window period (14.03.2017 to 13.09.2017 & 14.03.2018 to 13.04.2018) and Sectoral committee while deliberating on the proposals, identified these as violation of EIA Notification. These proposals are termed as "lateral entry proposals" and to be appraised as per the provisions laid in Ministry's Notification dated 14.03.2017.*

EAC opined that instant proposal is submitted and under consideration in the Ministry prior to violation window period and therefore should be considered as lateral entry proposal and to be appraised as per the provisions mentioned in the Ministry Notification 14.03.2017. EAC further opined that since PP is not having any valid Environmental Clearance therefore, they should not carry any construction activities without having valid environmental clearances. EAC therefore after detailed deliberation considered this case as violation of the EIA Notification and advised the project proponent to submit the application for Terms of Reference through Parivesh Portal for consideration as per the provisions mentioned in the Ministry's Notification 14.03.2017.

Item No. 3.2 Any other items with the permission of the Chair

As there being no agenda item left, the meeting ended with a vote of thanks to the Chair.
