



Government of India
Ministry of Environment, Forest and Climate Change
IA Division
(Thermal Projects)



**Minutes of 45TH MEETING Expert Appraisal Committee meeting Thermal
 Projects held from 16/08/2023 to 16/08/2023**

Date: 30/08/2023

MoM ID: EC/MOM/EAC/512680/8/2023
Agenda ID: EC/AGENDA/EAC/512680/8/2023
Meeting Venue: N/A
Meeting Mode: Virtual
Date & Time:

16/08/2023	10:30 AM	01:30 PM
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1. Opening remarks

The 45th Meeting of the re-constituted EAC (Thermal Power) organized by the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi was held on 16th August, 2021 through video conference under the Chairmanship of Shri Gururaj P. Kundargi.

2. Confirmation of the minutes of previous meeting

The Minutes of the 44th EAC (Thermal Power) meeting held on 20th July, 2023 were confirmed in the meeting.

3. Details of proposals considered by the committee

Day 1 -16/08/2023

3.1. Agenda Item No 1:

3.1.1. Details of the proposal

Proposed expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh by Adani Power Limited. by Adani Power Ltd. located at RAIGARH, CHHATTISGARH

Proposal For		Fresh ToR	
Proposal No	File No	Submission Date	Activity (Schedule Item)

IA/CG/THE/438173/2023	J-13012/57/2008.IA.II (T)	31/07/2023	Thermal Power Plants (1(d))
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3.1.2. Project Salient Features

45.2.1 The proposal is for grant of Terms of Reference to Expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amlī Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh by M/s Adani Power Limited.

45.2.2 The Project Proponent and the accredited Consultant M/s Greencindia Consulting Private Limited made a detailed presentation on the salient features of the project and informed that:

1. M/s Adani Power Limited proposes to developed as an expansion by adding 1600 (2x800) MW to the existing 600 (1x600) MW units.
2. All the necessary infrastructure to cater the requirement of the enhanced capacity will be developed while also using the facilities of the existing plant. The identified plot is located besides existing unit (Tentatively Latitudes 21°44' to 21°45' North/ Longitude 83°17' to 83°17' East).
3. The Environmental Clearance granted for Coal Based Thermal Power Plant of capacity 600 (1X600) MW at Villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amlī Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh from Ministry of Environment, Forest & Climate Change (MoEF&CC) vide letter no J-13012/57/2008-IA.II (T) dated: 20.05.2010 and its subsequent amendments dated 16.04.2015, 26.11.2019, 30.07.2020 & EC transferred dated; 22.10.2019 (KWPCCL to REGL) & 24.04.2023 (REGL to APL). The CECB has granted Consent to Operate (CTO) with validity up to 31.03.2025. The project was commissioned in March'2014 and plant/unit is operational.
4. Earlier, the proposal for expansion of existing 600 MW TPP to 2200 MW by addition 1600 (2x800) MW Coal based TPP for Terms of Reference (ToR) was considered at 52nd Meeting of EAC (Thermal) MoEFCC, New Delhi held on 29th February & 01st March' 2016 and Terms of Reference (ToR) was issued vide no. J-13012/02/2016-IA.I (T) dated; 17.03.2016. The development of proposal/project was not executed due to business strategy.
5. Land Area of about 879 Acres has been identified for the Project which includes the existing 1x600 MW Unit and land area for accommodation of coal stockyard, water reservoir, roads, township & green belt etc.
6. The estimated project cost is Rs. 16,500 Crores including existing investment of Rs. 2,900 crores. Total capital cost earmarked towards environmental pollution control measures is Rs. 2110.33 crores and the Recurring cost (operation and maintenance) will be about Rs 2.10 crores per annum.
7. Total Employment will be 396 persons as direct & 500 persons indirect after expansion. Industry proposes to allocate Rs. 37.75 crores @ of 0.28 % towards CER (as per Ministry's OM Dated 01.05.2018).
8. There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. River/ water body Mand River is flowing at a distance of 1.4 km in SW direction.
9. The salient features of the project are as under: -

Name of the Proposal	Proposed Expansion of Raigarh Thermal Power Plant by adding 1600 (2x 800) MW Ultra Super-Critical to existing 600 (1x600) MW at Villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amlī Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh.
Location (Including coordinates)	<p>Pillar No.</p> <p>Latitude (N)</p> <p>Longitude (E)</p> <p>A</p> <p>21°45'07.92"N</p> <p>83°16'25.37"E</p> <p>B</p>

	21°45'05.19"N
	83°16'42.40"E
	C
	21°45'04.59"N
	83°16'46.64"E
	D
	21°44'59.76"N
	83°16'54.97"E
	E
	21°44'47.67"N
	83°17'08.40"E
	F
	21°44'40.52"N
	83°17'06.11"E
	G
	21°44'29.86"N
	83°17'02.82"E
	H
	21°44'17.40"N
	83°16'59.75"E
	I
	21°44'09.42"N
	83°17'10.55"E
	J
	21°44'02.09"N
	83°17'03.93"E
	K
	21°44'03.99"N
	83°16'53.96"E
	L

	21°43'50.43"N
	83°16'49.33"E
	M
	21°43'44.19"N
	83°16'46.05"E
	N
	21°43'37.64"N
	83°16'38.27"E
	O
	21°43'50.1"N
	83°16'22.98"E
	P
	21°43'41.32"N
	83°16'20.53"E
	Q
	21°43'49.15"N
	83°16'02.52"E
	R
	21°44'02.77"N
	83°15'54.55"E
	S
	21°44'21.75"N
	83°15'55.35"E
	T
	21°44'29.30"N
	83°15'59.48"E
	U
	21°44'46.69"N
	83°16'5.021"E
	V

	<p>21°44'52.46"N</p> <p>83°16'21.52"E</p>
Inter- state issue involved	No
Seismic zone	Seismic Zone II (as per IS:1893)
Capacity / Cultural command area (CCA)	1600 (2x 800) MW
Attracts the General Conditions (Yes/No)	No
Powerhouse Installed Capacity	1600 MW, Configured as 2x 800 MW
Generation of Electricity Annually	1600 MWh
No. of Units	3 no. of Units (Existing: 1 no. & Proposed: 2 no.)
Cost of project	<p>Project Cost:</p> <ul style="list-style-type: none"> Existing EC: 2900 Crore Proposed Expansion (2x800) MW is 13,600 Crore
Total area of Project	<p>It is an expansion project, proposed within the existing plant boundary.</p> <ul style="list-style-type: none"> The land is already in possession with APL, Raigarh TPP. The total area of the project site 355.71 Ha. (879 Acres) including the existing facility.
Details of consultant and status of accreditation	<p>Accredited Consultant: GREENCINDIA CONSULTING PRIVATE LIMITED, Accreditation Certificate No.: NABET/EIA/2023/SA0155 Extension Letter: QCI/NABET/ENV/ACO/23/2772, valid upto: 05.09.2023</p>
Project Benefits	<p>The proposed expansion project will improve the power supply position in the state as well as in India, which is vital for economic growth as well as improving the quality of life.</p> <ul style="list-style-type: none"> Infrastructure development. Direct & indirect employment opportunity Revenue generation to central & state government. Trickledown effect of enhance profitability to the local populace Skill development and capacity building like vocational training, income generation programmes and entrepreneurship development program Awareness programme and community activities, like health camps, medical aides, family welfare camps, sanitization/ cleanliness awareness programme, immunization camp, sports & cultural activities, plantation, etc. Awareness about water borne diseases and pandemic diseases etc. will be done to local villagers. <p>The project will also attract the high-income groups to invest in the region and thus bring about economic growth of the region.</p>
Status of other statutory clearances	The Environmental Clearance granted for Coal Based Thermal Power Plant of capacity 600 (1X600) MW at Villages Chhote

	<p>Bhandar, Bade Bhandar, Sarvani, & Amli Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh from Ministry of Environment, Forest & Climate Change (MoEF&CC) vide letter no J-13012/57/2008-IA.II (T) dated: 20.05.2010 and its subsequent amendments dated 16.04.2015, 26.11.2019, 30.07.2020 & EC transferred dated; 22.10.2019 (KWPCCL to REGL) & 24.04.2023 (REGL to APL).</p> <p>Subsequently, CECB has granted Consent to Operate (CTO) with validity up to 31.03.2025.</p> <p>Earlier, the proposal for expansion of existing 600 MW TPP to 2200 MW by addition 1600 (2x800) MW Coal based TPP for Terms of Reference (ToR) was considered at 52nd Meeting of EAC (Thermal) MoEF&CC, New Delhi held on 29th February & 01st March'2016 and Terms of Reference (ToR) was issued vide no. J-13012/02/2016.IA.I (T) dated; 17.03.2016.</p>
R&R details	Not Applicable
Any litigation/Court case pertaining to the project	WP (Civil) – High Court of Chhattisgarh, Bilaspur - The matter was heard on 10.03.2022 wherein the Hon'ble Court granted an interim order staying the effect and operation of RO, CECB's order dated 04.12.2021 (levy of environmental compensation of Rs. 18.9 lakhs). Further, the respondent authorities are restrained from taking any coercive steps against Raigarh TPP.
Any violation case pertaining to the project:	Not Applicable
Certified EC compliance report (if applicable)	IRO Raipur, MoEF&CC has submitted compliance status report vide file no. 4-12/2010(ENV)/1063 dated: 24.11.2022. Raigarh TPP has submitted point wise compliance report to IRO, Raipur MoEF&CC vide letter no. REGL/ENV/22-23/75 dated: 28th January'2023.
Status of Stage- I FC	Not Applicable. The proposed expansion is within the existing land. The land is already under possession with Adani Power Limited.
Additional detail (If any)	It is an expansion project, proposed within the existing plant boundary.
Is FRA (2006) done for FC-I	Not Applicable.
Fuel to be used:	Coal and Auxiliary Fuel
Quantity of Fuel required per Annum:	Annual Coal requirement for the 2x800 MW units is about 8.15 MTPA, considering Design coal GCV as 3100 kcal/kg. Auxiliary liquid fuels, viz. LDO/HSD requirement per annum: 5000 kilo litres.
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Nearby Commercial Coal Mines in Raigarh & Korba area for proposed expansion.
Details of mode of transportation of coal from coal source to the plant premises along with distances	Coal transportation at Plant shall be through existing Rail facility. Distance: about 30 Km
Fly Ash Disposal System Proposed	Fly ash will be collected in dry form for utilization, while bottom ash will be collected in wet form. There would be provision for dry disposal of fly ash from storage silos to closed

	tankers for utilization in cement industries, abandoned mine reclamation, road construction, aggregate replacement in concrete, for manufacturing bricks, etc. as per Fly Ash Notification, 31st December’2021 and amendments. Provision would be kept for HCSD disposal of both bottom and fly ash to ash pond in case of exigency. In this case, both bottom ash and fly ash will be disposed through HCSD system to the proposed ash dyke.															
Ash Pond/ Dyke (Area, Location & Co-ordinates) Average height of area above MSL (m)	Ash Dyke Area: 180 Acres <table><thead><tr><th>Pillar No.</th><th>Latitude (N)</th><th>Longitude (E)</th></tr></thead><tbody><tr><td>1</td><td>21°44’24.37"</td><td>83°16’5.40"</td></tr><tr><td>2</td><td>21°44’22.32"</td><td>83°16’28.20"</td></tr><tr><td>3</td><td>21°43’51.30"</td><td>83°16’25.26"</td></tr><tr><td>4</td><td>21°43’52.93"</td><td>83°16’1.74"</td></tr></tbody></table> Average height of area: 230 m above MSL	Pillar No.	Latitude (N)	Longitude (E)	1	21°44’24.37"	83°16’5.40"	2	21°44’22.32"	83°16’28.20"	3	21°43’51.30"	83°16’25.26"	4	21°43’52.93"	83°16’1.74"
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Quantity of c. Fly Ash to be generated d. Bottom Ash to be generated:	Ash (Fly Ash & Bottom Ash): 3.83 MTPA Fly ash: 3.064 MTPA Bottom ash: 0.766 MTPA															
Fly Ash utilization (details)	Road Construction, Cement Industries, abandoned mines reclamation, aggregates replacement in concrete and manufacturing of bricks (As per Fly ash notification December 2021 and its amendments)															
Stack Height (m) & Type of Flue	120 m & Bi flues with FGD and low NOx/SCR.															
Expansion / Green Field (new): (IPP / Merchant / Captive):	Expansion (IPP)															
If expansion, the details of ECs (including amendments and extension of validity) of	<table><thead><tr><th>S. No.</th><th>Description of Environmental Clearance</th></tr></thead></table>	S. No.	Description of Environmental Clearance													
S. No.	Description of Environmental Clearance															

existing Units etc.	Date
	Letter No
	1.
	Environmental Clearance 1x600 MW Coal Based Thermal Power Plant at villages Bade Bhandar, Chote Bhandar, Sarvani; & Amali Bhona, In Tehsil & District, Raigarh, in Chhattisgarh.
	20.05.2010
	J-13012/57/ 2008-IA.II (T)
	1.
	Amendment in Environmental Clearance w.r.t temporary permission for road transportation of coal
	16.04.2015
	1.
	Environmental Clearance Transfer (KWPCCL to REGL)
	22.10.2019
	1.
	Amendment in Environmental Clearance w.r.t Extension of permission for road transportation of coal
	26.11.2019
	1.
	Amendment in Environmental Clearance w.r.t permission for road transportation of coal
	30.07.2020
	1.
	Environmental Clearance Transfer (REGL to APL)
	24.04.2023

	<p>1.</p> <p>Granted Terms of Reference (ToR) for Expansion 2x800 MW</p> <p>17.03.2016</p> <p>J-13012/02 /2016-IA.I (T)</p>
If expansion, whether the application is under 7(ii) of the EIA Notification, 2006.	No
If expansion, the date of latest monitoring done by the Regional Office (R.O) of MoEF&CC for compliance of the conditions stipulated in the environmental and CRZ clearances of the previous phases. A certified copy of the latest R.O. monitoring report shall also be submitted.	<p>Latest Six-Monthly EC compliance report for the period October'2022 to March'2023 is submitted to MoEF&CC, CPCB and CECB vide letter no. APL/REGL/EMD/MoEFCC/EC/211/05/23 dated; 25.05.2023.</p> <p>IRO Raipur, MoEF&CC has submitted compliance status report vide file no. 4-12/2010(ENV)/1063 dated: 24.11.2022. Raigarh TPP has submitted point wise compliance report to IRO, Raipur MoEF&CC vide letter no. REGL/ENV/22-23/75 dated: 28th January'2023</p>
Location of TPP	
Village :	Chhote Bhandar, Bade Bhandar, Sarvani & Mali Bhanuna
Taluk :	Pussore
District :	Raigarh
State :	Chhattisgarh
Co-ordinates of all four corners:	<p>Pillar No.</p> <p>Latitude (N)</p> <p>Longitude (E)</p> <p>A</p> <p>21°45'07.92"N</p> <p>83°16'25.37"E</p> <p>B</p> <p>21°45'05.19"N</p> <p>83°16'42.40"E</p> <p>C</p> <p>21°45'04.59"N</p> <p>83°16'46.64"E</p> <p>D</p> <p>21°44'59.76"N</p>

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	J
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	83°17'03.93"E
	K
	21°44'03.99"N
	83°16'53.96"E
	L
	21°43'50.43"N
	83°16'49.33"E
	M
	21°43'44.19"N
	83°16'46.05"E
	N
	21°43'37.64"N

	<p>83°16'38.27"E</p> <p>O</p> <p>21°43'50.1"N</p> <p>83°16'22.98"E</p> <p>P</p> <p>21°43'41.32"N</p> <p>83°16'20.53"E</p> <p>Q</p> <p>21°43'49.15"N</p> <p>83°16'02.52"E</p> <p>R</p> <p>21°44'02.77"N</p> <p>83°15'54.55"E</p> <p>S</p> <p>21°44'21.75"N</p> <p>83°15'55.35"E</p> <p>T</p> <p>21°44'29.30"N</p> <p>83°15'59.48"E</p> <p>U</p> <p>21°44'46.69"N</p> <p>83°16'5.021"E</p> <p>V</p> <p>21°44'52.46"N</p> <p>83°16'21.52"E</p>
Average height of (a) TPP site, (b) ash pond site etc. above MSL (m)	<p>TPP site: 230 m</p> <p>Ash Pond: 230 m</p>
Whether the project is in the Critically Polluted Area(CPA) or within 10 km of CPA. If so,	No

the details thereof:	
Capacity & Unit Configurations:	Electricity Generation capacity: 1600 MW, Configured as 2x 800 MW
Land requirement: a) TPP site b) Ash Pond c) Township d) MGR etc. (if expansion state additional land requirement)	<p>Land requirement (In acres)</p> <p>Existing</p> <p>Proposed</p> <p>Total</p> <p>BTG (including FGD(Ph II), Switchyard, Transformer yard etc.</p> <p>25</p> <p>55</p> <p>80</p> <p>Coal & Ash Facility (Including Stockyard & AHP facility)</p> <p>58</p> <p>60</p> <p>118</p> <p>Water System (Including raw water reservoir, Cooling Tower, CW Pump house, DM Water System, Clarified, Industrial Wastewater Treatment facility)</p> <p>18</p> <p>28</p> <p>46</p> <p>Raw water reservoir</p> <p>45</p> <p>20</p> <p>65</p> <p>Green Belt</p> <p>290 (117.4 ha.)</p> <p>290</p> <p>Ash dyke</p> <p>180</p> <p>0</p> <p>180</p>

	<p>Misc. Facility (Including Plant Road/Patrolling road, OHS ,Env. Laboratory Misc. Building etc. vacant space)</p> <p>18</p> <p>82</p> <p>100</p> <p>Total</p> <p>879 Acres</p>
Status of Land acquisition:	The proposed expansion is within the existing land. The land is already under possession with Adani Power Limited.
Status of the project:	The existing plant is in operation. The project was commissioned in March'2014 and plant/unit is operational.
Break-Up of Land-Use of TPP site:	<p>(Acres / Hectares)</p> <p>Forests land (Type and density): 0</p> <p>Double Crop agricultural land: 0</p> <p>Single crop agricultural land: 0</p> <p>Waste/Barren land: 0</p> <p>Grazing/Community land: 0</p> <p>Others (specify): The proposed expansion is within the existing land. The land is already under possession with Adani Power Limited. The total area of the project site 355.71 Ha. (879 Acres) including the existing facility.</p>
Fuel to be used:	Coal and Auxiliary Fuel
Quantity of Fuel Required per Annum:	<p>Annual Coal requirement for the 2x800 MW units is about 8.15 MTPA, considering Design coal GCV as 3100 kcal/kg.</p> <p>Auxiliary liquid fuels, viz. LDO/HSD requirement per annum: 5000 kilo litres.</p>
Coal Linkage / Coal Block: <i>(If Block allotted, status of EC & FC of the Block)</i>	<p>Quantity and details of Linkage:</p> <p>Nearby Commercial Coal Mines in Raigarh & Korba area for proposed expansion.</p> <p>Available: 8.15 MTPA</p> <p>Name of Block: Nearby Commercial Coal Mines in Raigarh & Korba area for proposed expansion.</p> <p>The method of obtaining remaining coal: (LOA issued on...)</p> <p>Ash content in coal: 41 % (in Design Coal)</p> <p>Sulphur in coal: 0.5 %</p> <p>Moisture: 12.40 (%)</p> <p>GCV in coal: 3100 Kcal/Kg</p>
Details of mode of transportation of coal from coal source to the plant premises along with distances.	<p>Coal receipt at Plant shall be through Rail.</p> <p>Distance: 30 Km</p>
Fly Ash Disposal System proposed:	Fly ash will be collected in dry form for utilization, while bottom ash will be collected in wet form. There would be provision for dry disposal of fly ash from storage silos to closed tankers for utilization in cement industries, abandoned mine filling, road construction, aggregate replacement in concrete, for

	<p>manufacturing bricks, etc. as per Fly Ash Notification, 31st December'2021 and amendments.</p> <p>Provision would be kept for HCSD disposal of both bottom and fly ash to ash pond in case of exigency. In this case, both bottom ash and fly ash will be disposed through HCSD system to the proposed ash dyke.</p>
<p>Ash Pond / Dyke: (Area, Location & Coordinates) Average height of area above MSL (m)</p>	<p>Area 180 acres</p> <p>Latitude</p> <p>Longitude</p> <p>Fly ash Pond 21°44'24.37"N 83°16'5.40"E</p> <p>Bottom ash pond 1 21°44'22.32"N 83°16'28.20"E</p> <p>Bottom ash pond 2 21°43'51.30"N 83°16'25.26"E</p> <p>Average height 230 m</p>
Quantity of Fly Ash to be Generated:	3.064 MTPA
Quantity of Bottom Ash to be Generated:	0.766 MTPA
Fly Ash utilisation percentage with details:	Cement Industries, Road Construction, mines filling, aggregates replacement in concrete and manufacturing of bricks (As per Fly ash notification December 2021 and its amendments)
Stack Height (m) & Type of Flue	120 m & Bi flues with FGD and low NOx/SCR.
Source of Water:	Existing Mahanadi River approx. at 05 km from Plant Site.
Quantity of water requirement:	4000m3/hr or 35.04 MCM/year
Distance of source of water from Plant:	05 km
Mode of conveyance of water:	Existing Pipelines
Status of water linkage:	WRD permission for the existing water demand of 15 MCM is obtained and the WRD permission for the water demand of proposed expansion will be obtained

(If source is Sea water) Desalination Plant Capacity	Not Applicable																														
Cooling system	Closed recirculating condenser cooling system with Induced Draft Cooling Tower.																														
CRZ Clearance	Not Applicable																														
Names & distance of National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites Rivers, Tanks, Reserve Forests etc. Located within 10 Km from the plant boundary:	<div>No any National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites exist within the 10 km radius of the plant. Following Reserve Forest/ Protected Forest Land and water bodies falling within 10 km radius of the plant:</div> <table><thead><tr><th>Particulars</th><th>Distance (In km)</th><th>Direction</th></tr></thead><tbody><tr><td colspan="3">Reserve Forest (R.F), Protected Forest (P.F)</td></tr><tr><td>Damka PF</td><td>5.4</td><td>SW</td></tr><tr><td>Devtongri PF</td><td>8</td><td>SSW</td></tr><tr><td>RF near Kandola</td><td>9.7</td><td>SSE</td></tr><tr><td colspan="3">WATER BODIES</td></tr><tr><td>Mahanadi River</td><td>3.5</td><td>S</td></tr><tr><td>Mand River</td><td>1.4</td><td>SW</td></tr><tr><td>Kutari Nala</td><td>3.3</td><td>SW</td></tr><tr><td>Lath Nala</td><td>5.4</td><td></td></tr></tbody></table>	Particulars	Distance (In km)	Direction	Reserve Forest (R.F), Protected Forest (P.F)			Damka PF	5.4	SW	Devtongri PF	8	SSW	RF near Kandola	9.7	SSE	WATER BODIES			Mahanadi River	3.5	S	Mand River	1.4	SW	Kutari Nala	3.3	SW	Lath Nala	5.4	
Particulars	Distance (In km)	Direction																													
Reserve Forest (R.F), Protected Forest (P.F)																															
Damka PF	5.4	SW																													
Devtongri PF	8	SSW																													
RF near Kandola	9.7	SSE																													
WATER BODIES																															
Mahanadi River	3.5	S																													
Mand River	1.4	SW																													
Kutari Nala	3.3	SW																													
Lath Nala	5.4																														

	SW
Kantang Nala	
	5.6
	S
Gayasagar Nala	
	8.7
	SE
Kamrel Nala	
	8
	NNW
Any litigation/Court case pertaining to the project:	WP (Civil) – High Court of Chhattisgarh, Bilaspur - The matter was heard on 10.03.2022 wherein the Hon'ble Court granted an interim order staying the effect and operation of RO, CECB's order dated 04.12.2021 (levy of environmental compensation of Rs. 18.9 lakhs). Further, the respondent authorities are restrained from taking any coercive steps against Raigarh TPP.

3.1.3. Deliberations by the EAC in previous meetings

N/A

3.1.4. Deliberations by the EAC in current meetings

The proposal is for grant of Terms of Reference to Expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh by M/s Adani Power Limited.

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

The EAC noted that the Ministry has granted EC vide letter no J-13012/57/2008-IA.II (T) dated 20.05.2010 and its subsequent amendments dated 16.04.2015, 26.11.2019, 30.07.2020 & EC transferred dated; 22.10.2019 (KWPCCL to REGL) & 24.04.2023 (REGL to APL).to Coal Based Thermal Power Plant of capacity 600 (1X600) MW at Villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh.

The EAC further noted that currently transportation of coal is being carried out by Road from MCL mines and PP proposed Fuel Supply Agreements (FSA) for proposed expansion of existing TPP from nearby Commercial Coal Mine in Raigarh & Korba area and it will be carried through Rail transportation. The rail transportation system is under construction.

It was noted that the total water requirement is 95996 m3/day of which freshwater requirement of 95996 m3/day will be met from Surface Water from River Mahanadi at 05 km. Also, the Mand River is 1.4 km from the project boundary in southwest direction.

3.1.5. Recommendation of EAC

Recommended

3.1.6. Details of Terms of Reference

3.1.6.1. Specific

Environmental Management and Biodiversity Conservation

1. Cumulative Environmental Impact Assessment study of all the existing and proposed projects in the 15-km radius of the proposed project shall be conducted.
2. PCCF letter shall be obtained stating that no wildlife corridor is passing through the project boundary.
3. Wildlife conservation plan shall be prepared, in consultation with State forest and wildlife department, with adequate fund for wildlife habitat management, preserving wildlife and its corridors and be submitted along with EIA/EMP report. Human-Wildlife Conflict issue shall be studied and such incidences reported in the study area during last 10 years shall be submitted. No provision for purchasing the vehicle shall be made in the wildlife conservation plan.
4. Details of the existing rail, road networks and alignment of transmission lines along with quantity of coal being transported/to be transported for existing units and proposed expansion, its source and transportation mode shall be submitted.
5. Radioactivity studies along with coal analysis to be provided (sulphur, ash percentage and heavy metals including Pb, Cr, As and Hg). Details of auxiliary fuel, if any including its quantity, quality, storage, etc should also be given.
6. A comparative chart shall be prepared with changes observed from previous baseline study and present baseline study.
7. Existing green plantation carried out by the project proponent along with its survival rate shall be submitted and a plan shall be made to maintain survival rate upto 90%.
8. Detailed action plan shall be prepared for maintenance of air pollution control equipment.
9. An action plan for reclamation plan of existing Ash pond shall be prepared be submitted along with EIA/EMP report.
10. Details of Ash management of existing and proposed project shall be submitted, along with 5-year plan for 100 % ash utilization.
11. Details of Dry Ash handling system along with supplementary coal handling system shall be submitted.
12. Proper protection measures like HDPE lining, appropriate height of bund and adequate distance between proposed Ash pond and water body (minimum 60 meter) etc. shall be planned so as to reduce the possibility of mixing of leachate with any fresh water body for under construction ash pond. High Density Slurry disposal plan shall be prepared.
13. Pond and ground water quality (10 locations within 2 km radius of the plant boundary) shall be studied and report be submitted along with EIA/EMP. Action plan for Ground water monitoring stations on all hotspots like schools/hospitals within 2 km radius of the plant boundary be submitted.
14. Baseline Study for Heavy metals in Ground water, Surface water and soil to be carried out and incorporated in EIA/EMP report.
15. Details pertaining to water source, treatment and discharge should be provided.
16. Zero Liquid Discharge plan shall be submitted.
17. Action plan for development of green belt (33% of total project cover area) along the periphery of the project boundary shall be provided with a video clip of existing green belt.
18. PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.
19. Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
20. An action plan shall be prepared for Water shed development within 10 km radius of the plant boundary in consultation with reputed government institution.
21. Details of tree to be cut need to be provided for railway siding construction and need to be incorporated in EIA/EMP report.
22. A detailed plan need to be submitted for undertaking extensive green plantation within 10 km radius of the plant focusing on water reservoir, school, hospital and other institutional area and same need to be incorporated in EIA/EMP report.

Disaster Management	
1.	Disaster Management Plan shall be prepared and incorporated in EIA/EMP report.
Miscellaneous	
1.	<ol style="list-style-type: none"> Public Consultation shall be carried out by uploading the draft EIA/EMP report on Pollution Control Board's website, District collector website/office and publishing notice in newspapers (both in Hindi and English) for seeking comments from the general public. The comments received so shall be addressed in the final EIA report along with time bound action plan and financial budget allocation. Certified compliance report of previous EC to be submitted certified by Regional office of the MoEF&CC. IRO shall provide specific observations on the status of OCMS and emission control equipment of all units of the plant. PP shall submit details of court cases and its status for the project. The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples. Aerial view video of project site shall be recorded through drone and be submitted. Undertaking from the project proponent that commitment regarding 100% ash utilization as per action plan presented by the PP during the EAC meeting and submitted vide letter no. RVUN/CE (TD-NPP)/SE(TD-NPP)/F./D. 223 dated 19.05.2023 along with table shall be submitted.

3.1.6.2. Standard

1(d)	Thermal Power Plants
Statutory compliance	
1.	The proposed project shall be given a unique name in consonance with the name submitted to other Government Departments etc. for its better identification and reference.
2.	Vision document specifying prospective long term plan of the project shall be formulated and submitted.
3.	Latest compliance report duly certified by the Regional Office of MoEF&CC for the conditions stipulated in the environmental and CRZ clearances of the previous phase(s) for the expansion projects shall be submitted.
Details of the Project and Site	
1.	The project proponent needs to identify minimum three potential sites based on environmental, ecological and economic considerations, and choose one appropriate site having minimum impacts on ecology and environment. A detailed comparison of the sites in this regard shall be submitted.
2.	Executive summary of the project indicating relevant details along with recent photographs of the proposed site (s) shall be provided. Response to the issues raised during Public Hearing and the written representations (if any), along with a time bound Action Plan and budgetary allocations to address the same, shall be provided in a tabular form, against each action proposed.
3.	Harnessing solar power within the premises of the plant particularly at available roof tops and other available areas shall be formulated and for expansion projects, status of implementation shall also be submitted.
4.	The geographical coordinates (WGS 84) of the proposed site (plant boundary), including location of ash pond along with topo sheet (1:50,000 scale) and IRS satellite map of the area, shall be submitted. Elevation of plant site and ash pond with respect to HFL of water body/nallah/River and high tide level from the sea shall be specified, if the site is located in proximity to them.

5.	Layout plan indicating break-up of plant area, ash pond, green belt, infrastructure, roads etc. shall be provided.
6.	Land requirement for the project shall be optimized and in any case not more than what has been specified by CEA from time to time. Item wise break up of land requirement shall be provided.
7.	Present land use (including land class/kism) as per the revenue records and State Govt. records of the proposed site shall be furnished. Information on land to be acquired including coal transportation system, laying of pipeline, ROW, transmission lines etc. shall be specifically submitted. Status of land acquisition and litigation, if any, should be provided.
8.	If the project involves forest land, details of application, including date of application, area applied for, and application registration number, for diversion under FCA and its status should be provided along with copies of relevant documents.
9.	The land acquisition and R&R scheme with a time bound Action Plan should be formulated and addressed in the EIA report.
10.	Satellite imagery and authenticated topo sheet indicating drainage, cropping pattern, water bodies (wetland, river system, stream, nallahs, ponds etc.), location of nearest habitations (villages), creeks, mangroves, rivers, reservoirs etc. in the study area shall be provided.
11.	Topography of the study area supported by toposheet on 1:50,000 scale of Survey of India, along with a large scale map preferably of 1:25,000 scale and the specific information whether the site requires any filling shall be provided. In that case, details of filling, quantity of required fill material; its source, transportation etc. shall be submitted.
Ecology biodiversity and Environment	
1.	A detailed study on land use pattern in the study area shall be carried out including identification of common property resources (such as grazing and community land, water resources etc.) available and Action Plan for its protection and management shall be formulated. If acquisition of grazing land is involved, it shall be ensured that an equal area of grazing land be acquired and developed and detailed plan submitted.
2.	Location of any National Park, Sanctuary, Elephant/Tiger Reserve (existing as well as proposed), migratory routes / wildlife corridor, if any, within 10 km of the project site shall be specified and marked on the map duly authenticated by the Chief Wildlife Warden of the State or an officer authorized by him.
3.	A mineralogical map of the proposed site (including soil type) and information (if available) that the site is not located on potentially mineable mineral deposit shall be submitted.
4.	The water requirement shall be optimized (by adopting measures such as dry fly ash and dry bottom ash disposal system, air cooled condenser, concept of zero discharge) and in any case not more than that stipulated by CEA from time to time, to be submitted along with details of source of water and water balance diagram. Details of water balance calculated shall take into account reuse and re- circulation of effluents.
5.	Water body/Nallah (if any) passing across the site should not be disturbed as far as possible. In case any Nallah / drain is proposed to be diverted, it shall be ensured that the diversion does not disturb the natural drainage pattern of the area. Details of proposed diversion shall be furnished duly approved by the concerned Department of the State.
6.	It shall also be ensured that a minimum of 500 m distance of plant boundary is kept from the HFL of river system / streams etc. and the boundary of site should also be located 500 m away from railway track and National Highways.
7.	Hydro-geological study of the area shall be carried out through an institute/ organization of repute to assess the impact on ground and surface water regimes. Specific mitigation measures shall be spelt out and time bound Action Plan for its implementation shall be submitted

8.	Detailed Studies on the impacts of the ecology including fisheries of the River/Estuary/Sea due to the proposed withdrawal of water / discharge of treated wastewater into the River/Sea etc shall be carried out and submitted along with the EIA Report. In case of requirement of marine impact assessment study, the location of intake and outfall shall be clearly specified along with depth of water drawl and discharge into open sea.
9.	Source of water and its sustainability even in lean season shall be provided along with details of ecological impacts arising out of withdrawal of water and taking into account inter-state shares (if any). Information on other competing sources downstream of the proposed project and commitment regarding availability of requisite quantity of water from the Competent Authority shall be provided along with letter / document stating firm allocation of water.
10.	Detailed plan for rainwater harvesting and its proposed utilization in the plant shall be furnished. In addition, wherever ground water is drawn, PP shall submit detailed plan of Water charging activity to be undertaken.
11.	Feasibility of near zero discharge concept shall be critically examined and its details submitted.
12.	Optimization of Cycles of Concentration (COC) along with other water conservation measures in the project shall be specified.
13.	Plan for recirculation of ash pond water and its implementation shall be submitted.
14.	Detailed plan for conducting monitoring of water quality regularly with proper maintenance of records shall be formulated. Detail of methodology and identification of monitoring points (between the plant and drainage in the direction of flow of surface / ground water) shall be submitted. It shall be ensured that parameter to be monitored also include heavy metals. A provision for long-term monitoring of ground water table using Piezometer shall be incorporated in EIA, particularly from the study area.
15.	Hazards Characterization: Past incidents of hazard events within 10km radius of project area with detailed analysis of causes and probability of reoccurrence

Environmental Baseline study and mitigation measures

1.	One complete season (critical season) site specific meteorological and AAQ data (except monsoon season) as per latest MoEF&CC Notification shall be collected along with past three year's meteorological data for that particular season for wins speed analysis and the dates of monitoring shall be recorded. The parameters to be covered for AAQ shall include PM10, PM2.5, SO2, NOx, CO and Hg. The location of the monitoring stations should be so decided so as to take into consideration the upwind direction, pre-dominant downwind direction, other dominant directions, habitation and sensitive receptors. There should be at least one monitoring station each in the upwind and in the pre - dominant downwind direction at a location where maximum ground level concentration is likely to occur.
2.	In case of expansion project, air quality monitoring data of 104 observations a year for relevant parameters at air quality monitoring stations as identified/stipulated shall be submitted to assess for compliance of AAQ Standards (annual average as well as 24 hrs).
3.	A list of industries existing and proposed in the study area shall be furnished.
4.	Cumulative impacts of all sources of emissions including handling and transportation of existing and proposed projects on the environment of the area shall be assessed in detail. Details of the Model used and the input data used for modelling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any. The windrose and isopleths should also be shown on the location map. The cumulative study should also include impacts on water, soil and socio-economics.
5.	Radio activity and heavy metal contents of coal to be sourced shall be examined and submitted along with laboratory reports.
6.	Fuel analysis shall be provided. Details of auxiliary fuel, if any, including its quantity, quality, storage etc

	should also be furnished.
7.	Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished. The Ministry's Notification dated 02.01.2014 regarding ash content in coal shall be complied. For the expansion projects, the compliance of the existing units to the said Notification shall also be submitted
8.	Details of transportation of fuel from the source (including port handling) to the proposed plant and its impact on ambient AAQ shall be suitably assessed and submitted. If transportation entails a long distance it shall be ensured that rail transportation to the site shall be first assessed. Wagon loading at source shall preferably be through silo/conveyor belt.
9.	For proposals based on imported coal, inland transportation and port handling and rail movement shall be examined and details furnished. The approval of the Port and Rail Authorities shall be submitted.
10.	Details regarding infrastructure facilities such as sanitation, fuel, restrooms, medical facilities, safety during construction phase etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase should be adequately catered for and details furnished.
Environmental Management Plan	
1.	EMP to mitigate the adverse impacts due to the project along with item - wise cost of its implementation in a time bound manner shall be specified.
2.	A Disaster Management Plan (DMP) along with risk assessment study including fire and explosion issues due to storage and use of fuel should be prepared. It should take into account the maximum inventory of storage at site at any point of time. The risk contours should be plotted on the plant layout map clearly showing which of the proposed activities would be affected in case of an accident taking place. Based on the same, proposed safeguard measures should be provided. Measures to guard against fire hazards should also be invariably provided. Provision for mock drills shall be suitably incorporated to check the efficiency of the plans drawn.
3.	The DMP so formulated shall include measures against likely Fires/Tsunami/Cyclones/Storm Surges/Earthquakes etc, as applicable. It shall be ensured that DMP consists of both On-site and Off-site plans, complete with details of containing likely disaster and shall specifically mention personnel identified for the task. Smaller version of the plan for different possible disasters shall be prepared both in English and local languages and circulated widely.
4.	Details of fly ash utilization plan as per the latest fly ash Utilization Notification of GOI along with firm agreements / MoU with contracting parties including other usages etc. shall be submitted. The plan shall also include disposal method / mechanism of bottom ash along with monitoring mechanism.
Green belt development	
1.	Detailed scheme for raising green belt of native species of appropriate width (50 to 100 m) and consisting of at least 3 tiers around plant boundary not less than 2000 tree per ha with survival rate of more than 85% shall be submitted. Photographic evidence must be created and submitted periodically including NRSA reports in case of expansion projects. A shrub layer beneath tree layer would serve as an effective sieve for dust and sink for CO ₂ and other gaseous pollutants and hence a stratified green belt should be developed.
2.	Over and above the green belt, as carbon sink, plan for additional plantation shall be drawn by identifying blocks of degraded forests, in close consultation with the District Forests Department. In pursuance to this the project proponent shall formulate time bound Action Plans along with financial allocation and shall submit status of implementation to the Ministry every six months
Socio-economic activities	
1.	Socio-economic study of the study area comprising of 10 km from the plant site shall be carried out through a reputed institute / agency which shall consist of detail assessment of the impact on livelihood of the local

	communities.
2.	Action Plan for identification of local employable youth for training in skills, relevant to the project, for eventual employment in the project itself shall be formulated and numbers specified during construction & operation phases of the Project.
3.	If the area has tribal population, it shall be ensured that the rights of tribals are well protected. The project proponent shall accordingly identify tribal issues under various provisions of the law of the land.
4.	A detailed CER plan along with activities wise break up of financial commitment shall be prepared in terms of the provisions OM No. 22-65/2017-IA.III dated 30.09.2020. CER component shall be identified considering need based assessment study and Public Hearing issues. Sustainable income generating measures which can help in upliftment of affected section of society, which is consistent with the traditional skills of the people shall be identified.
5.	While formulating CER schemes it shall be ensured that an in-built monitoring mechanism for the schemes identified are in place and mechanism for conducting annual social audit from the nearest government institute of repute in the region shall be prepared. The project proponent shall also provide Action Plan for the status of implementation of the scheme from time to time and dovetail the same with any Govt. scheme(s). CER details done in the past should be clearly spelt out in case of expansion projects.
6.	R&R plan, as applicable, shall be formulated wherein mechanism for protecting the rights and livelihood of the people in the region who are likely to be impacted, is taken into consideration. R&R plan shall be formulated after a detailed census of population based on socio economic surveys who were dependant on land falling in the project, as well as, population who were dependant on land not owned by them.
7.	Assessment of occupational health and endemic diseases of environmental origin in the study area shall be carried out and Action Plan to mitigate the same shall be prepared.
8.	Occupational health and safety measures for the workers including identification of work related health hazards shall be formulated. The company shall engage full time qualified doctors who are trained in occupational health. Health monitoring of the workers shall be conducted at periodic intervals and health records maintained. Awareness programme for workers due to likely adverse impact on their health due to working in non-conductive environment shall be carried out and precautionary measures like use of personal equipments etc. shall be provided. Review of impact of various health measures undertaken at intervals of two to three years shall be conducted with an excellent follow up plan of action wherever required.
Corporate Environment Policy	
1.	Does the company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.
2.	Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.
3.	What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions. Details of this system may be given.
4.	Does the company has compliance management system in place wherein compliance status along with compliances / violations of environmental norms are reported to the CMD and the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism should be detailed in the EIA report.
Miscellaneous	
1.	All the above details should be adequately brought out in the EIA report and in the presentation to the Committee.

2.	Details of litigation pending or otherwise with respect to project in any Court, Tribunal etc. shall invariably be furnished.
3.	In case any dismantling of old plants are envisaged, the planned land use & land reclamation of dismantled area to be furnished.
Additional TOR for Coastal Based Thermal Power Plants Projects (TPPs)	
1.	Low lying areas fulfilling the definition wetland as per Ramsar Convention shall be identified and clearly demarcated w.r.t the proposed site.
2.	If the site includes or is located close to marshy areas and backwaters, these areas must be excluded from the site and the project boundary should be away from the CRZ line. Authenticated CRZ map from any of the authorized agencies shall be submitted.
3.	The soil levelling should be minimum with no or minimal disturbance to the natural drainage of the area. If the minor canals (if any) have to be diverted, the design for diversion should be such that the diverted canals not only drains the plant area but also collect the volume of flood water from the surrounding areas and discharge into marshy areas/major canals that enter into creek. Major canals should not be altered but their embankments should be strengthened and desilted.
4.	Additional soil required for levelling of the sites should as far as possible be generated within the site itself in such a manner that the natural drainage system of the area is protected and improved.
5.	Marshy areas which hold large quantities of flood water to be identified and shall not be disturbed.
6.	No waste should be discharged into Creek, Canal systems, Backwaters, Marshy areas and seas without appropriate treatment. Wherever feasible, the outfall should be first treated in a Guard Pond and then only discharged into deep sea (10 to 15 m depth). Similarly, the Intake should be from deep sea to avoid aggregation of fish and in no case shall be from the estuarine zone. The brine that comes out from Desalinization Plants (if any) should not be discharged into sea without adequate dilution.
7.	Mangrove conservation and regeneration plan shall be formulated and Action Plan with details of time bound implementation shall be specified, if mangroves are present in Study Area.
8.	A common Green Endowment Fund should be created by the project proponents out of EMP budgets. The interest earned out of it should be used for the development and management of green cover of the area.
9.	Impact on fisheries at various socio economic level shall be assessed.
10.	An endowment Fishermen Welfare Fund should be created out of CER grants not only to enhance their quality of life by creation of facilities for Fish Landing Platforms / Fishing Harbour / cold storage, but also to provide relief in case of emergency situations such as missing of fishermen on duty due to rough seas, tropical cyclones and storms etc.
11.	Tsunami Emergency Management Plan shall be prepared wherever applicable and Plan submitted prior to the commencement of construction work.
12.	There should not be any contamination of soil, ground and surface waters (canals & village pond) with sea water in and around the project sites. In other words necessary preventive measures for spillage from pipelines, such as lining of Guard Pond used for the treatment of outfall before discharging into the sea and surface RCC channels along the pipelines of outfall and intake should be adopted. This is just because the areas around the projects boundaries could be fertile agricultural land used for paddy cultivation.

4. Any Other Item(s)

N/A

5. List of Attendees

Sr. No.	Name	Designation	Email ID	Remarks
1	Shri Gururaj P Kundargi	Chairman, EAC	gpkundargi@gmail.com	
2	Shri Suramya Dolarray Vora	Member (EAC)	suramya.vora@gmail.com	
3	Dr Narmada Prasad Shukla	Member (EAC)	shuklanp55@gmail.com	
4	Dr Santoshkumar Hampannavar	Member (EAC)	santoshkumar777@yahoo.com	
5	Dr Umesh Jagannathrao Kahalekar	Member (EAC)	ukahalekar@rediffmail.com	
6	Shri K B Biswas	Member (EAC)	biswaskiriti@gmail.com	
7	Dr Nandini N	Member (EAC)	sai.nandinin@gmail.com	
8	Dr Unmesh Patnaik	Member (EAC)	unmesh.patnaik@tiss.edu	Absent
9	Dr Nazimuddin	Member (EAC)	nazim.cpcb@nic.in	
10	Shri Mahi Pal Singh	Member (EAC)	mpsingh.cea@nic.in	
11	Dr R K Giri	Member (EAC)	rk.giriccs@gmail.com	Absent
12	Professor Sheo Shanker Rai	Member (EAC)	sheoshankar@iitism.ac.in	Absent
13	Yogendra Pal Singh	Scientist E	yogendra78@nic.in	

MINUTES OF THE 45TH MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD ON 16TH AUGUST, 2023

The 45th Meeting of the re-constituted EAC (Thermal Power) organized by the Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi was held on 16th August, 2021 through video conference under the Chairmanship of Shri Gururaj P. Kundargi. The list of Members participated in the meeting is at **Annexure**.

Agenda Item No.45.1: Confirmation of the Minutes of the 43rd EAC meeting

The Minutes of the 43rd EAC (Thermal Power) meeting held on 19th June, 2023 were confirmed in the meeting.

Agenda Item No. 45.2

Expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh by M/s Adani Power Limited - Terms of References (TOR) – reg.

[Proposal No. IA/CG/THE/438173/2023; F. No. J-13012/57/2008-IA.II (T)]

45.2.1 The proposal is for grant of Terms of Reference to Expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh by M/s Adani Power Limited.

45.2.2 The Project Proponent and the accredited Consultant M/s Greencindia Consulting Private Limited made a detailed presentation on the salient features of the project and informed that:

- i. M/s Adani Power Limited proposes to developed as an expansion by adding 1600 (2x800) MW to the existing 600 (1x600) MW units.
- ii. All the necessary infrastructure to cater the requirement of the enhanced capacity will be developed while also using the facilities of the existing plant. The identified plot is located besides existing unit (Tentatively Latitudes 21°44' to 21°45' North/ Longitude 83°17' to 83°17' East).
- iii. The Environmental Clearance granted for Coal Based Thermal Power Plant of capacity 600 (1X600) MW at Villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh from Ministry of Environment, Forest & Climate Change (MoEF&CC) vide letter no J-13012/57/2008-IA.II (T) dated: 20.05.2010 and its subsequent amendments dated 16.04.2015, 26.11.2019, 30.07.2020 & EC transferred dated; 22.10.2019 (KWPCCL to REGL) & 24.04.2023 (REGL to APL). The CECB has granted Consent to Operate (CTO) with validity up to 31.03.2025. The project was commissioned in March'2014 and plant/unit is operational.
- iv. Earlier, the proposal for expansion of existing 600 MW TPP to 2200 MW by addition 1600 (2x800) MW Coal based TPP for Terms of Reference (ToR) was considered at 52nd Meeting of EAC (Thermal) MoEFCC, New Delhi held on 29th February & 01st

March' 2016 and Terms of Reference (ToR) was issued vide no. J-13012/02/2016-IA.I (T) dated; 17.03.2016. The development of proposal/project was not executed due to business strategy.

- v. Land Area of about 879 Acres has been identified for the Project which includes the existing 1x600 MW Unit and land area for accommodation of coal stockyard, water reservoir, roads, township & green belt etc.
- vi. The estimated project cost is Rs. 16,500 Crores including existing investment of Rs. 2,900 crores. Total capital cost earmarked towards environmental pollution control measures is Rs. 2110.33 crores and the Recurring cost (operation and maintenance) will be about Rs 2.10 crores per annum.
- vii. Total Employment will be 396 persons as direct & 500 persons indirect after expansion. Industry proposes to allocate Rs. 37.75 crores @ of 0.28 % towards CER (as per Ministry's OM Dated 01.05.2018).
- viii. There are no national parks, wildlife sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors etc. within 10 km distance from the project site. River/ water body Mand River is flowing at a distance of 1.4 km in SW direction.
- ix. The salient features of the project are as under: -

Name of the Proposal	Proposed Expansion of Raigarh Thermal Power Plant by adding 1600 (2x 800) MW Ultra Super-Critical to existing 600 (1x600) MW at Villages Chhote Bhandar, Bade Bhandar, Sarvani, & Aml Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh.		
Location (Including coordinates)	Pillar No.	Latitude (N)	Longitude (E)
	A	21°45'07.92"N	83°16'25.37"E
	B	21°45'05.19"N	83°16'42.40"E
	C	21°45'04.59"N	83°16'46.64"E
	D	21°44'59.76"N	83°16'54.97"E
	E	21°44'47.67"N	83°17'08.40"E
	F	21°44'40.52"N	83°17'06.11"E
	G	21°44'29.86"N	83°17'02.82"E
	H	21°44'17.40"N	83°16'59.75"E
	I	21°44'09.42"N	83°17'10.55"E
	J	21°44'02.09"N	83°17'03.93"E
	K	21°44'03.99"N	83°16'53.96"E
	L	21°43'50.43"N	83°16'49.33"E
	M	21°43'44.19"N	83°16'46.05"E
	N	21°43'37.64"N	83°16'38.27"E
	O	21°43'50.1"N	83°16'22.98"E
	P	21°43'41.32"N	83°16'20.53"E
	Q	21°43'49.15"N	83°16'02.52"E
	R	21°44'02.77"N	83°15'54.55"E
	S	21°44'21.75"N	83°15'55.35"E
	T	21°44'29.30"N	83°15'59.48"E
	U	21°44'46.69"N	83°16'5.021"E

	V	21°44'52.46"N	83°16'21.52"E	
Inter- state issue involved	No			
Seismic zone	Seismic Zone II (as per IS:1893)			
Capacity / Cultural command area (CCA)	1600 (2x 800) MW			
Attracts the General Conditions (Yes/No)	No			
Powerhouse Installed Capacity	1600 MW, Configured as 2x 800 MW			
Generation of Electricity Annually	1600 MWh			
No. of Units	3 no. of Units (Existing: 1 no. & Proposed: 2 no.)			
Cost of project	Project Cost: <ul style="list-style-type: none"> Existing EC: 2900 Crore Proposed Expansion (2x800) MW is 13,600 Crore 			
Total area of Project	It is an expansion project, proposed within the existing plant boundary. <ul style="list-style-type: none"> The land is already in possession with APL, Raigarh TPP. The total area of the project site 355.71 Ha. (879 Acres) including the existing facility. 			
Details of consultant and status of accreditation	Accredited Consultant: GREENCINDIA CONSULTING PRIVATE LIMITED, Accreditation Certificate No.: NABET/EIA/2023/SA0155 Extension Letter: QCI/NABET/ENV/ACO/23/2772, valid upto: 05.09.2023			
Project Benefits	The proposed expansion project will improve the power supply position in the state as well as in India, which is vital for economic growth as well as improving the quality of life. <ul style="list-style-type: none"> Infrastructure development. Direct & indirect employment opportunity Revenue generation to central & state government. Trickledown effect of enhance profitability to the local populace Skill development and capacity building like vocational training, income generation programmes and entrepreneurship development program Awareness programme and community activities, like health camps, medical aides, family welfare camps, sanitization/ cleanliness awareness programme, immunization camp, sports & cultural activities, plantation, etc. 			

	<ul style="list-style-type: none"> Awareness about water borne diseases and pandemic diseases etc. will be done to local villagers. <p>The project will also attract the high-income groups to invest in the region and thus bring about economic growth of the region.</p>
Status of other statutory clearances	<p>The Environmental Clearance granted for Coal Based Thermal Power Plant of capacity 600 (1X600) MW at Villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh from Ministry of Environment, Forest & Climate Change (MoEF&CC) vide letter no J-13012/57/2008-IA.II (T) dated: 20.05.2010 and its subsequent amendments dated 16.04.2015, 26.11.2019, 30.07.2020 & EC transferred dated; 22.10.2019 (KWPCL to REGL) & 24.04.2023 (REGL to APL).</p> <p>Subsequently, CECB has granted Consent to Operate (CTO) with validity up to 31.03.2025.</p> <p>Earlier, the proposal for expansion of existing 600 MW TPP to 2200 MW by addition 1600 (2x800) MW Coal based TPP for Terms of Reference (ToR) was considered at 52nd Meeting of EAC (Thermal) MoEF&CC, New Delhi held on 29th February & 01st March'2016 and Terms of Reference (ToR) was issued vide no. J-13012/02/2016.IA.I (T) dated; 17.03.2016.</p>
R&R details	Not Applicable
Any litigation/Court case pertaining to the project	<p>WP (Civil) – High Court of Chhattisgarh, Bilaspur - The matter was heard on 10.03.2022 wherein the Hon'ble Court granted an interim order staying the effect and operation of RO, CECB's order dated 04.12.2021 (levy of environmental compensation of Rs. 18.9 lakhs). Further, the respondent authorities are restrained from taking any coercive steps against Raigarh TPP.</p>
Any violation case pertaining to the project:	Not Applicable
Certified EC compliance report (if applicable)	<p>IRO Raipur, MoEF&CC has submitted compliance status report vide file no. 4-12/2010(ENV)/1063 dated: 24.11.2022. Raigarh TPP has submitted point wise compliance report to IRO, Raipur MoEF&CC vide letter no. REGL/ENV/22-23/75 dated: 28th January'2023.</p>
Status of Stage- I FC	Not Applicable. The proposed expansion is within the existing land. The land is already under possession with Adani Power Limited.
Additional detail (If any)	It is an expansion project, proposed within the existing plant boundary.

Is FRA (2006) done for FC-I	Not Applicable.															
Fuel to be used:	Coal and Auxiliary Fuel															
Quantity of Fuel required per Annum:	Annual Coal requirement for the 2x800 MW units is about 8.15 MTPA, considering Design coal GCV as 3100 kcal/kg. Auxiliary liquid fuels, viz. LDO/HSD requirement per annum: 5000 kilo litres.															
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Nearby Commercial Coal Mines in Raigarh & Korba area for proposed expansion.															
Details of mode of transportation of coal from coal source to the plant premises along with distances	Coal transportation at Plant shall be through existing Rail facility. Distance: about 30 Km															
Fly Ash Disposal System Proposed	Fly ash will be collected in dry form for utilization, while bottom ash will be collected in wet form. There would be provision for dry disposal of fly ash from storage silos to closed tankers for utilization in cement industries, abandoned mine reclamation, road construction, aggregate replacement in concrete, for manufacturing bricks, etc. as per Fly Ash Notification, 31st December'2021 and amendments. Provision would be kept for HCSD disposal of both bottom and fly ash to ash pond in case of exigency. In this case, both bottom ash and fly ash will be disposed through HCSD system to the proposed ash dyke.															
Ash Pond/ Dyke (Area, Location & Co-ordinates) Average height of area above MSL (m)	Ash Dyke Area: 180 Acres <table><tr><th>Pillar No.</th><th>Latitude (N)</th><th>Longitude (E)</th></tr><tr><td>1</td><td>21°44'24.37"</td><td>83°16'5.40"</td></tr><tr><td>2</td><td>21°44'22.32"</td><td>83°16'28.20"</td></tr><tr><td>3</td><td>21°43'51.30"</td><td>83°16'25.26"</td></tr><tr><td>4</td><td>21°43'52.93"</td><td>83°16'1.74"</td></tr></table> Average height of area: 230 m above MSL	Pillar No.	Latitude (N)	Longitude (E)	1	21°44'24.37"	83°16'5.40"	2	21°44'22.32"	83°16'28.20"	3	21°43'51.30"	83°16'25.26"	4	21°43'52.93"	83°16'1.74"
Pillar No.	Latitude (N)	Longitude (E)														
1	21°44'24.37"	83°16'5.40"														
2	21°44'22.32"	83°16'28.20"														
3	21°43'51.30"	83°16'25.26"														
4	21°43'52.93"	83°16'1.74"														
Quantity of c. Fly Ash to be generated d. Bottom Ash to be generated:	Ash (Fly Ash & Bottom Ash): 3.83 MTPA Fly ash: 3.064 MTPA Bottom ash: 0.766 MTPA															

Fly Ash utilization (details)	Road Construction, Cement Industries, abandoned mines reclamation, aggregates replacement in concrete and manufacturing of bricks (As per Fly ash notification December 2021 and its amendments)				
Stack Height (m) & Type of Flue	120 m & Bi flues with FGD and low NOx/SCR.				
Expansion / Green Field (new): (IPP / Merchant / Captive):	Expansion (IPP)				
If expansion, the details of ECs (including amendments and extension of validity) of existing Units etc.	S. No.	Description of Environmental Clearance	Date	Letter No	
	1.	Environmental Clearance 1x600 MW Coal Based Thermal Power Plant at villages Bade Bhandar, Chote Bhandar, Sarvani; & Amali Bhona, In Tehsil & District, Raigarh, in Chhattisgarh.	20.05.2010	J-13012/57/2008-IA.II (T)	
	2.	Amendment in Environmental Clearance w.r.t temporary permission for road transportation of coal	16.04.2015		
	3.	Environmental Clearance Transfer (KWPCCL to REGL)	22.10.2019		
	4.	Amendment in Environmental Clearance w.r.t Extension of permission for road transportation of coal	26.11.2019		
	5.	Amendment in Environmental	30.07.2020		

		Clearance w.r.t permission for road transportation of coal			
	6.	Environmental Clearance Transfer (REGL to APL)	24.04.2023		
	7.	Granted Terms of Reference (ToR) for Expansion 2x800 MW	17.03.2016	J-13012/02/2016-IA.I (T)	
If expansion, whether the application is under 7(ii) of the EIA Notification, 2006.	No				
If expansion, the date of latest monitoring done by the Regional Office (R.O) of MoEF&CC for compliance of the conditions stipulated in the environmental and CRZ clearances of the previous phases. A certified copy of the latest R.O. monitoring report shall also be submitted.	<p>Latest Six-Monthly EC compliance report for the period October'2022 to March'2023 is submitted to MoEF&CC, CPCB and CECB vide letter no. APL/REGL/EMD/MoEFCC/EC/211/05/23 dated; 25.05.2023.</p> <p>IRO Raipur, MoEF&CC has submitted compliance status report vide file no. 4-12/2010(ENV)/1063 dated: 24.11.2022. Raigarh TPP has submitted point wise compliance report to IRO, Raipur MoEF&CC vide letter no. REGL/ENV/22-23/75 dated: 28th January'2023</p>				
Location of TPP					
Village :	Chhote Bhandar, Bade Bhandar, Sarvani & Mali Bhanuna				
Taluk :	Pussore				
District :	Raigarh				
State :	Chhattisgarh				
Co-ordinates of all four corners:	Pillar No.	Latitude (N)	Longitude (E)		
	A	21°45'07.92"N	83°16'25.37"E		
	B	21°45'05.19"N	83°16'42.40"E		
	C	21°45'04.59"N	83°16'46.64"E		
	D	21°44'59.76"N	83°16'54.97"E		
	E	21°44'47.67"N	83°17'08.40"E		
	F	21°44'40.52"N	83°17'06.11"E		
	G	21°44'29.86"N	83°17'02.82"E		
	H	21°44'17.40"N	83°16'59.75"E		

	I	21°44'09.42"N	83°17'10.55"E	
	J	21°44'02.09"N	83°17'03.93"E	
	K	21°44'03.99"N	83°16'53.96"E	
	L	21°43'50.43"N	83°16'49.33"E	
	M	21°43'44.19"N	83°16'46.05"E	
	N	21°43'37.64"N	83°16'38.27"E	
	O	21°43'50.1"N	83°16'22.98"E	
	P	21°43'41.32"N	83°16'20.53"E	
	Q	21°43'49.15"N	83°16'02.52"E	
	R	21°44'02.77"N	83°15'54.55"E	
	S	21°44'21.75"N	83°15'55.35"E	
	T	21°44'29.30"N	83°15'59.48"E	
	U	21°44'46.69"N	83°16'5.021"E	
	V	21°44'52.46"N	83°16'21.52"E	
Average height of (a) TPP site, (b) ash pond site etc. above MSL (m)	TPP site: 230 m Ash Pond: 230 m			
Whether the project is in the Critically Polluted Area(CPA) or within 10 km of CPA. If so, the details thereof:	No			
Capacity & Unit Configurations:	Electricity Generation capacity: 1600 MW, Configured as 2x 800 MW			
Land requirement: a) TPP site b) Ash Pond c) Township d) MGR etc. (if expansion state additional land requirement)	Land requirement (In acres)	Existing	Proposed	Total
	BTG (including FGD (Ph II), Switchyard, Transformer yard etc.	25	55	80
	Coal & Ash Facility (Including Stock yard & AHP facility)	58	60	118
	Water System (Including raw water reservoir, Cooling Tower, CW Pump house, DM Water System, Clarified, Industrial Wastewater Treatment facility)	18	28	46

	Raw water reservoir	45	20	65
	Green Belt	290 (117.4 ha.)		290
	Ash dyke	180	0	180
	Misc. Facility (Including Plant Road/Patrolling road, OHS ,Env. Laboratory Misc. Building etc. vacant space)	18	82	100
	Total			879 Acres
Status of Land acquisition:	The proposed expansion is within the existing land. The land is already under possession with Adani Power Limited.			
Status of the project:	The existing plant is in operation. The project was commissioned in March'2014 and plant/unit is operational.			
Break-Up of Land-Use of TPP site:	(Acres / Hectares) Forests land (Type and density): 0 Double Crop agricultural land: 0 Single crop agricultural land: 0 Waste/Barren land: 0 Grazing/Community land: 0 Others (specify): The proposed expansion is within the existing land. The land is already under possession with Adani Power Limited. The total area of the project site 355.71 Ha. (879 Acres) including the existing facility.			
Fuel to be used:	Coal and Auxiliary Fuel			
Quantity of Fuel Required per Annum:	Annual Coal requirement for the 2x800 MW units is about 8.15 MTPA, considering Design coal GCV as 3100 kcal/kg. Auxiliary liquid fuels, viz. LDO/HSD requirement per annum: 5000 kilo litres.			
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Quantity and details of Linkage: Nearby Commercial Coal Mines in Raigarh & Korba area for proposed expansion. Available: 8.15 MTPA Name of Block: Nearby Commercial Coal Mines in Raigarh & Korba area for proposed expansion. The method of obtaining remaining coal: (LOA issued on...) Ash content in coal: 41 % (in Design Coal) Sulphur in coal: 0.5 % Moisture: 12.40 (%) GCV in coal: 3100 Kcal/Kg			
Details of mode of transportation of coal	Coal receipt at Plant shall be through Rail. Distance: 30 Km			

from coal source to the plant premises along with distances.			
Fly Ash Disposal System proposed:	Fly ash will be collected in dry form for utilization, while bottom ash will be collected in wet form. There would be provision for dry disposal of fly ash from storage silos to closed tankers for utilization in cement industries, abandoned mine filling, road construction, aggregate replacement in concrete, for manufacturing bricks, etc. as per Fly Ash Notification, 31 st December'2021 and amendments. Provision would be kept for HCSD disposal of both bottom and fly ash to ash pond in case of exigency. In this case, both bottom ash and fly ash will be disposed through HCSD system to the proposed ash dyke.		
Ash Pond / Dyke: (Area, Location & Coordinates) Average height of area above MSL (m)	Area	180 acres	
		Latitude	Longitude
	Fly ash Pond	21°44'24.37"N	83°16'5.40"E
	Bottom ash pond 1	21°44'22.32"N	83°16'28.20"E
	Bottom ash pond 2	21°43'51.30"N	83°16'25.26"E
	Average height	230 m	
Quantity of Fly Ash to be Generated:	3.064 MTPA		
Quantity of Bottom Ash to be Generated:	0.766 MTPA		
Fly Ash utilisation percentage with details:	Cement Industries, Road Construction, mines filling, aggregates replacement in concrete and manufacturing of bricks (As per Fly ash notification December 2021 and its amendments)		
Stack Height (m) & Type of Flue	120 m & Bi flues with FGD and low NOx/SCR.		
Source of Water:	Existing Mahanadi River approx. at 05 km from Plant Site.		
Quantity of water requirement:	4000m3/hr or 35.04 MCM/year		
Distance of source of water from Plant:	05 km		
Mode of conveyance of water:	Existing Pipelines		
Status of water linkage:	WRD permission for the existing water demand of 15 MCM is obtained and the WRD permission for the water demand of proposed expansion will be obtained		
(If source is Sea water)	Not Applicable		

Desalination Plant Capacity			
Cooling system	Closed recirculating condenser cooling system with Induced Draft Cooling Tower.		
CRZ Clearance	Not Applicable		
Names & distance of National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites Rivers, Tanks, Reserve Forests etc. Located within 10 Km from the plant boundary:	No any National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites exist within the 10 km radius of the plant. Following Reserve Forest/ Protected Forest Land and water bodies falling within 10 km radius of the plant:		
	Particulars	Distance (In km)	Direction
	Reserve Forest (R.F), Protected Forest (P.F)		
	Damka PF	5.4	SW
	Devtongri PF	8	SSW
	RF near Kandola	9.7	SSE
	WATER BODIES		
	Mahanadi River	3.5	S
	Mand River	1.4	SW
	Kutari Nala	3.3	SW
	Lath Nala	5.4	SW
	Kantang Nala	5.6	S
	Gayasagar Nala	8.7	SE
	Kamrel Nala	8	NNW
	Any litigation/Court case pertaining to the project:	WP (Civil) – High Court of Chhattisgarh, Bilaspur - The matter was heard on 10.03.2022 wherein the Hon’ble Court granted an interim order staying the effect and operation of RO, CECB’s order dated 04.12.2021 (levy of environmental compensation of Rs. 18.9 lakhs). Further, the respondent authorities are restrained from taking any coercive steps against Raigarh TPP.	

45.2.3 The EAC during deliberations noted the following:

The proposal is for grant of Terms of Reference to Expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amla Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh by M/s Adani Power Limited.

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

The EAC noted that the Ministry has granted EC vide letter no vide letter no J-13012/57/2008-IA.II (T) dated 20.05.2010 and its subsequent amendments dated 16.04.2015, 26.11.2019, 30.07.2020 & EC transferred dated; 22.10.2019 (KWPC to REGL) & 24.04.2023 (REGL to APL).to Coal Based Thermal Power Plant of capacity 600 (1X600)

MW at Villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amlı Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh.

The EAC further noted that currently transportation of coal is being carried out by Road from MCL mines and PP proposed Fuel Supply Agreements (FSA) for proposed expansion of existing TPP from nearby Commercial Coal Mine in Raigarh & Korba area and it will be carried through Rail transportation. The rail transportation system is under construction.

It was noted that the total water requirement is 95996 m³/day of which freshwater requirement of 95996 m³/day will be met from Surface Water from River Mahanadi at 05 km. Also, the Mand River is 1.4 km from the project boundary in southwest direction.

45.2.4 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 Expansion of Raigarh Thermal Power Plant Coal Based by adding 1600 (2x800) MW Ultra Super Critical Technology to existing 600 (1x600) MW at villages Chhote Bhandar, Bade Bhandar, Sarvani, & Amlı Bhanuna, Tehsil Pussore, District Raigarh, Chhattisgarh by M/s Adani Power Limited, under the provisions of EIA Notification, 2006, as amended along with the following additional/specific ToR:

[A] Environmental Management and Biodiversity Conservation

- i. Cumulative Environmental Impact Assessment study of all the existing and proposed projects in the 15-km radius of the proposed project shall be conducted.
- ii. PCCF letter shall be obtained stating that no wildlife corridor is passing through the project boundary.
- iii. Wildlife conservation plan shall be prepared, in consultation with State forest and wildlife department, with adequate fund for wildlife habitat management, preserving wildlife and its corridors and be submitted along with EIA/EMP report. Human-Wildlife Conflict issue shall be studied and such incidences reported in the study area during last 10 years shall be submitted. No provision for purchasing the vehicle shall be made in the wildlife conservation plan.
- iv. Details of the existing rail, road networks and alignment of transmission lines along with quantity of coal being transported/to be transported for existing units and proposed expansion, its source and transportation mode shall be submitted.
- v. Radioactivity studies along with coal analysis to be provided (sulphur, ash percentage and heavy metals including Pb, Cr, As and Hg). Details of auxiliary fuel, if any including its quantity, quality, storage, etc should also be given.
- vi. A comparative chart shall be prepared with changes observed from previous baseline study and present baseline study.
- vii. Existing green plantation carried out by the project proponent along with its survival rate shall be submitted and a plan shall be made to maintain survival rate upto 90%.
- viii. Detailed action plan shall be prepared for maintenance of air pollution control equipment.
- ix. An action plan for reclamation plan of existing Ash pond shall be prepared be submitted along with EIA/EMP report.
- x. Details of Ash management of existing and proposed project shall be submitted, along with 5-year plan for 100 % ash utilization.
- xi. Details of Dry Ash handling system along with supplementary coal handling system shall be submitted.

- xii. Proper protection measures like HDPE lining, appropriate height of bund and adequate distance between proposed Ash pond and water body (minimum 60 meter) etc. shall be planned so as to reduce the possibility of mixing of leachate with any fresh water body for under construction ash pond. High Density Slurry disposal plan shall be prepared.
- xiii. Pond and ground water quality (10 locations within 2 km radius of the plant boundary) shall be studied and report be submitted along with EIA/EMP. Action plan for Ground water monitoring stations on all hotspots like schools/hospitals within 2 km radius of the plant boundary be submitted.
- xiv. Baseline Study for Heavy metals in Ground water, Surface water and soil to be carried out and incorporated in EIA/EMP report.
- xv. Details pertaining to water source, treatment and discharge should be provided.
- xvi. Zero Liquid Discharge plan shall be submitted.
- xvii. Action plan for development of green belt (33% of total project cover area) along the periphery of the project boundary shall be provided with a video clip of existing green belt.
- xviii. PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.
- xix. Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.
- xx. An action plan shall be prepared for Water shed development within 10 km radius of the plant boundary in consultation with reputed government institution.
- xxi. Details of tree to be cut need to be provided for railway siding construction and need to be incorporated in EIA/EMP report.
- xxii. A detailed plan need to be submitted for undertaking extensive green plantation within 10 km radius of the plant focusing on water reservoir, school, hospital and other institutional area and same need to be incorporated in EIA/EMP report.

[B] Disaster Management

- xxiii. Disaster Management Plan shall be prepared and incorporated in EIA/EMP report.

[C] Miscellaneous

- xxiv. Public Consultation shall be carried out by uploading the draft EIA/EMP report on Pollution Control Board's website, District collector website/office and publishing notice in newspapers (both in Hindi and English) for seeking comments from the general public. The comments received so shall be addressed in the final EIA report along with time bound action plan and financial budget allocation.
- xxv. Certified compliance report of previous EC to be submitted certified by Regional office of the MoEF&CC. IRO shall provide specific observations on the status of OCMS and emission control equipment of all units of the plant.
- xxvi. PP shall submit details of court cases and its status for the project.
- xxvii. The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples.
- xxviii. Arial view video of project site shall be recorded through drone and be submitted.
- xxix. Undertaking from the project proponent that commitment regarding 100% ash utilization as per action plan presented by the PP during the EAC meeting and

submitted vide letter no. RVUN/CE (TD-NPP)/SE(TD-NPP)/F./D. 223 dated 19.05.2023 along with table shall be submitted.

Agenda Item No. 45.3:

Regularisation of 3 × 21 = 63 MW Gas-based Thermal Power Station in an area of 55.89ha at Rokhia in village Manikyanagar, Boxanagar PS, District Sepahijala, Tripura by M/s Tripura State Electricity Corporation Limited – Reconsideration for Environmental Clearance – reg.

[Proposal No. IA/TR/THE/125111/2019; F. No. J-13012/13/2019-IA.I (T)]

45.3.1 The proposal is for grant of environmental clearance to the Regularisation of 3 × 21 = 63 MW Gas-based Thermal Power Station in an area of 55.89ha at Rokhia in village Manikyanagar, Boxanagar PS, District Sepahijala, Tripura by M/s Tripura State Electricity Corporation Limited.

45.3.2: The proposal was earlier considered in the 29th EAC (Thermal) meeting held on 24/08/2022, wherein the project was deferred for want of additional details on the following points:

- (i) Revised Damage Assessment Report.
- (ii) Revised Community Resource augmentation plan.
- (iii) Activity wise breakup with time bound budgetary provisions on the issues raised during public hearing and revise CER plan accordingly
- (iv) Plan to identify the traditional knowledge with the Tribal community and to strengthen the Self-help group.
- (v) Land use/Land Cover analysis shall include the entire project area.
- (vi) The Hydro geology report shall be revisited and the annual precipitation over the project area shall be reassessed and submitted including the Rain Water /Ground Water charging potential with relevant ROC (Run of coefficient).
- (vii) Water consumption for the plant as well as domestic needs considering the standard per capita consumption shall be revised and submitted.
- (viii) Damage Assessment:(Specific T O R):
 - a) Status of Credible action initiated by TSPCB shall be submitted.
 - b) The PP has adopted the" CPCB IN HOUSE COMMITTEE REPORT " which is not applicable to this project since it is a specific case and as quoted in CPCB Report " when environment compensation is assessed based on actual damage to environment by expert organization agency" However, the PP has to rework the damages for the following attributes for operation without EC:
 - c) Air pollution Damage either by calculating by either rates per kg of emission as per EU28 Hand Book or rates per kg as per EEA report being followed as per violation committee guidelines.
 - d) Damage cost towards non maintenance of Rainwater Harvesting Structures and Ground Water Recharging system.
 - e) Cost towards consumption of Ground/Surface water without clearance and computed as per CGWA notification dated 24th September 2020.
 - f) Damage cost towards absence of Solid waste management.
 - g) Non-compliance of provision of 33% GB/Plantation of the Project area.

- h) The overall economic benefit (net profit) accrued and cost a saved in EMP if so, 3% of the total shall be added to Community Resource Augmentation plan.
- i) Being under SOP: The penalty for Capex and the operating turnover for all these years shall be calculated @0.5 % for capex (255.51 Cr) and 0.125 % for the total turnover as per para 12.3/4 of SOP.

45.3.2 The PP submitted the above mentioned information vide communication dated 08.05.2023, 05.07.2023 and 14.08.2023. **Accordingly, the proposal was reconsidered in the 45th meeting of the EAC (Thermal) held on 16.08.2023.**

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

(i) **Identification of Project Specific Impacts during Construction and Operation Phases**

Construction Phase

No new construction is involved in the project. Hence no impacts are envisaged.

Operation Phase

The Operation phase mainly includes the operation of individual units like Turbine, Pumps, Effluent treatment plant, Solid waste (Hazardous & non-hazardous) management, etc. in a Gas based thermal Power plant.

The potential significant impacts of the project on the following environmental parameters are identified as below –

- Soil Quality & Topography;
- Ambient Air Quality
- Water Quality;
- Noise Levels;
- Geology & Hydrogeology;
- Ecology;
- Demography and Socio – Economics;

(ii) **Summary of Impacts and Mitigation measures**

Sr. No.	Environment Aspects	Potential source of Impact	Mitigation measures
1.	Air Environment	Stack emissions, rawmaterial handling	<ul style="list-style-type: none"> • Effective stack height • Periodical maintenance of equipment • If required spraying of water on the road to suppress the dust emission • Regular maintenance of pipes.

2.	Water Environment	Disposal of waste water on land	Water requirement for open cycle Gas Thermal Power Plant is very less. For initial filling requirement is 1000 L. Per unit. Make-up req. is 200 L / day/ unit. Therefore, per day requirement of water for operation of 3 nos. of units is 600 L, 0.6 m ³ which is very low. Domestic Water requirement – 2500 L i.e. 0.25 m ³ per day. Domestic waste water is led down to Septic Tank followed by soakpit.
3.	Land	Land use	It is an existing plant hence no change in land use is envisaged.
4.	Soil	Disposal of waste water on the land	Domestic waste water is led down to septic tank followed by soak pit.
5.	Noise	During Operation	<ul style="list-style-type: none"> Acoustic enclosure is provided. Sound from the machineries or from other operation is being restricted within plant boundary
6.	Ecology	Release of pollutant in environment.	<ul style="list-style-type: none"> No major vegetation clearance is required All required pollution control equipment are provided to ensures the control of pollution

(iii) **Violation Period Details**

S. No.	Unit Name	Work Description	Days of Activity	Valid CTE / CTO	Total Years Without Valid CTE / CTO	Valid EC	Status of EC Violation (Yes / No)
CONSTRUCTION PHASE							
1	GT #7	HEAVY CONSTRUCTIONACTIVITY	365	CTE OBTAINED	NIL	NO	YES
2	GT #8		365	CTE OBTAINED	NIL	NO	YES
3	GT #9		365	CTE NOT OBTAINED	9 YEARS (Till 2020)	NO	YES
OPERATION PHASE							

4	GT #7	OPERATION OF GASTURBINE FOR POWER GENERATION	7447	CTO OBTAINED VALIDITY EXPIRED ON 20/12/2007	19.4	N O	YES
5	GT #8	OPERATION OF GAS TURBINE FOR POWER GENERATION	5935	CTO OBTAINED VALIDITY EXPIRED ON 11/12/2007	15.2	N O	YES
6	GT #9	OPERATION OF GASTURBINE FOR POWER GENERATION	3225	CTO NOT OBTAINED	8.8	N O	YES

(iv) **Total Consolidated Damage Cost**

The total amount of **Rs. 9.74 Cr.** as per the above Damage assessment report, shall be spent towards the Remediation / Restoration, Natural and Community Resources Augmentation Plan as per the mandate and guidelines of Violation notification of MOEF&CC dated 7th July 2021. Summary of the consolidated damage cost is given as under:

S. No.	Environmental Attribute	Amount (in Rs. Lakhs)
1	Land Environment	₹ 27,97,500.00
2	Air Environment	₹ 7,44,32,948.80
3	Water Environment	₹ 83,34,666.00
4	Noise & Vibration	₹ 15,00,000.00
5	Ecology & Biodiversity	₹ 44,00,000.00
6	Solid Waste Management	₹ 15,43,800.00
7	OHS	₹ 19,90,000.00
8	Cost Saved From EMP	₹ 23,80,000.00
9	3% of Profit Accrued	₹ 0.00
Total		₹ 973,78,914.80

(v) **Budget for Remediation Plan, Natural Resource Augmentation Plan and Community Resource Augmentation Plan**

- The objectives of remediation plan are to identify mitigation and control measures and its cost.
- The Augmentation plan includes various activities which will be done for augmentation of Natural Resources like water, land, vegetative cover, etc. and community upliftment.

(vi) **Activity-wise budgetary Commitments by PP:**

I. PH commitments Cost allocation as per OM dated 30/09/2020 superseding the CER

Sr No.	CER activities	Locations	Rate	Total Quantity	Total Cost	Year I	Year II	Year III
1	Construction of Passenger shed and other such amenities as per requirement in villages / towns nearby project area as requested in public hearing	a. Manikyanagar, b. Veluarchar, c. Boxanagar d. Putia, e. Ashabari,	1500000	5	₹ 75,00,000	₹ 30,00,000	₹ 15,00,000	₹ 30,00,000
2	Setting up of office space for few of the Self-Help Groups (SHG) in the locality like Joy Ram SHG, etc. for running of their day-to-day operations	a. Manikyanagar, b. Veluarchar, c. Boxanagar d. Putia, e. Ashabari,	600000	5	₹ 30,00,000	₹ 18,00,000	₹ 6,00,000	₹ 6,00,000
3	Upcoming materials supply tender to be made local and vendors from nearby villages / towns within 10 KM are only eligible to participate	Villages / Towns within 10 km of Project	Lump Sum	LOT	₹ 1,05,00,000	₹ 45,00,000	₹ 30,00,000	₹ 30,00,000
Grand Total (Cost considered as CER)					₹ 2,10,00,000	₹ 93,00,000	₹ 51,00,000	₹ 66,00,000

II. Remediation Plan along with Year-wise Budget

S. No.	Environment Component	Activity Description*	Location	Unit Cost (in INR)	Quantity (Nos.)	Total Budgetary Provision (in INR Lakh)			
						1 st Year	2 nd Year	3 rd Year	Total

1	Air & Noise Environment	Avenue plantation of 2500 nos. each in nearby villages and areas between project and habitation with 3 years' maintenance in consultation with State Forest Department (Range Forest Officer - Boxanagar Range, Sonamura Forest Subdivision).	a. Dayalpara , b. Veluarchar , c. Kalsimura , d. Ashabari, e. Putia f. Chelikhola	1250	15000	62.5	62.5	62.5	187.5
2	Preservation of Ecology & Biodiversity	Providing measures for conservation of local flora and fauna, like nesters and perchers for avifauna, wire mesh protection for planted trees, etc. in consultation with State Forest Department (Range Forest Officer - Boxanagar Range, Sonamura Forest Subdivision)	a. Dayalpara , b. Veluarchar , c. Kalsimura , d. Ashabari, e. Putia f. Chelikhola	250000	6	50	50	50	150
SUB TOTAL (A)						112.5	112.5	112.5	337.5

III. Natural Resource Augmentation Plan along with Year-wise Budget

S. No.	Environment Component	Activity Description*	Location	Unit Cost (in INR)	Quantity (Nos.)	Total Budgetary Provision (in INR Lakh)			
						1 st Year	2 nd Year	3 rd Year	Total
1.	Energy Conservation	Supply, Installation and 3 year maintenance of 5 Nos Solar Powered Street Lamp each in nearby villages	a. Putia b. Ashabari, c. Ghilatali, d. Chelikhola e. Dayalpara,	150000	25	15	15	7.5	37.5
2.	Ground Water Recharging	Construction of 5 nos. Rainwater harvesting structures / ponds of adequate capacity in common locations in each village with 3 years maintenance	a. Manikyana gar, b. Veluarchar, c. Kalsimura, d. Boxanagar	500000	20	50	25	25	100

3.	Solid waste management	Supply, Installation, and 3 years maintenance of solid waste management machineries for handling (Sorting, Processing & final product packing) Dry & wetwaste	a. Manikyana gar, b. Veluarchar, c. Dayalpara d. Kalsimura, e. Ashabari, f. Boxanagar, g. Putia, h. Chelikhola, i. Ghilatali, j. Bangshibari	10000 00	10	60	20	20	100
SUB TOTAL (B)						125	60	52.5	237.5

IV. Community Resource Augmentation Plan along with Year-wise Budget

S. No.	Environment Component	Activity Description*	Location	Unit Cost (in INR)	Quantity (Nos.)	Total Budgetary Provision(in INR Lakh)			
						1 st Year	2 nd Year	3 rd Year	Total
1.	Socio-economic Welfare	Providing 500 LPH capacity 2nos. each drinking water facilities, water purification systems, filters, etc. with 3 years maintenance to nearby villages in Gram Panchayat offices and other community infrastructure	a. Manikyana gar, b. Veluarchar, c. Dayalpara d. Kalsimura, e. Ashabari, f. Boxanagar, g. Putia, h. Chelikhola, i. Ghilatali, j. Bangshibari	10000 00	20	100	50	50	200
2.		Supply, installation, and 3 years maintenances of medical equipment's like X-ray machine, Vitals monitors, Stretchers, Wheelchair and Furniture; each as 1 Lot in nearby village Government primary health centers / hospital of project area	a. Manikyana gar, b. Veluarchar, c. Dayalpara d. Kalsimura, e. Ashabari, f. Boxanagar, g. Putia, h. Chelikhola, i. Ghilatali, j. Bangshibari	15000 00	10 Lots	75	45	30	150

3.	Supply of computers, AV device, projectors for upgradation to smart classroom teaching and learning for both teachers and students with power backup, improvement of toilet blocks and provision of drinking water.	Manikyana gar government school	LS	1 Lot	-	50	-	50
SUB TOTAL (C)					175	145.4	80	400
GRAND TOTAL (A + B + C)					412.5	317.5	245	975

V. Bank Guarantee Cost Summary

Sr. No.	Head	Estimated cost (in Rs. Crores)
1.	Remediation Plan	3.375
2.	Natural Resources Augmentation Plan	2.375
3.	Community Resources Augmentation Plan	4.000
Total Damage Amount to be given under bank guarantee		9.750

VI. Penalty as per OM Dated 07/07/2021

The following penalty to be paid to concerned State Pollution control board as per latest direction dated 28/07/2022 from MoEF&CC:

- Since the Project Proponent has volunteered and according to clause 12.2, 0.5% of capital cost spent till now Rs. 1.255 Cr. will be paid as a penalty.
- In addition, 0.125 % for the total turnover as per para 12.3/4 of SOP, i.e. 0.125% of total Turnover (Rs. 2030.40 Cr.) will be around Rs. 2.538 Cr.
- Thus Total Penalty as per OM dated 07/07/2021 to be paid to State Pollution Control Board is Rs. 3.79 Cr.

(vii) The summary of cost as per above mentioned budgets:

Sl. No.	Description	Estimated cost (in Rs. Crores)
1.	Calculation of bank guarantee amount as per Notification dated 07-07-2021 and OM dated 07/07/2022 (after approval of EAC, MoEF&CC)	9.75
2.	Penalty as per OM dated 07/07/2021 to be paid to State Pollution Control Board	3.79
3.	Cost Allocated towards PH Commitment to be given via affidavit as per OM dated 30/09/2020	2.10

- (viii) Plan of EMP implementation and necessary Undertaking regarding the same shall also be submitted to the TSPCB and MoEF&CC, before the grant of EC or as recommended by the EAC (Thermal).

45.3.4 The EAC during deliberations noted the following:

The proposal is for grant of Environmental Clearance to the project for Regularisation of $3 \times 21 = 63$ MW Gas-based Thermal Power Station in an area of 55.89 Acres at Rokhia in village Manikyanagar, Boxanagar PS, District Sepahijala, Tripura by M/s Tripura State Electricity Corporation Limited. Further, the EAC noted that the project will be using air cooled condensing system during the operation of thermal power plant.

The project/activity is covered under category B of item 1(d) 'Thermal Power Plants', however needs to be considered as category A, since General Condition is applicable (located within 10 km from India-Bangladesh International Boundary) as per the Schedule of the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

The proposal has been submitted under violation category. The Terms of Reference to the project was granted vide letter dated 13th April, 2022 by MoEF&CC. The Credible action has been initiated by TSPCB vide Case No: - CR(C) 93 of 2023 Tripura State Pollution Control Board & Anr. Vs. TSECL & ors. dated 14.08.2023.

The EAC examined the ecological damage assessment report and observed that the same has been revised as per SOP issued by the Ministry vide Office Memorandum no. 22-21/2020-IA.III dated 7.07.2021. EAC recommended for an amount of Rs. **9.750** crore towards Remediation plan, Natural Resources Augmentation Plan and Community Resources Augmentation Plan to be spent within a span of three years.

It was also noted that Public Hearing was conducted by Tripura State Pollution Control Board (TSPCB), at Geetanjali Multipurpose Community Hall, Manikyanagar, near the project site on the 13th June 2022 at 11:00 am, under the Chairmanship of Additional District Magistrate (ADM) of Sepahijala district, Shri S. Bandopadhyay.

The summary of amounts mode of spending each, as calculated by the EAC, is presented below,

Sl. No.	Description	Estimated cost (in Rs. Crores)
1.	Calculation of bank guarantee amount as per Notification dated 07-07-2021 and OM dated 07/07/2022 (after approval of EAC, MoEF&CC)	9.75
2.	Penalty as per OM dated 07/07/2021 to be paid to State Pollution Control Board	3.79
3.	Cost Allocated towards PH Commitment to be given via affidavit as per OM dated 30/09/2020	2.10

45.3.5 The EAC after examining the information submitted by the project proponent on PARIVESH and as presented during the meeting **recommended** the proposal for grant of Environmental Clearance for Regularisation of $3 \times 21 = 63$ MW Gas-based Thermal Power Station in an area of 55.89 Acres at Rokhia in village Manikyanagar, Boxanagar PS, District Sepahijala, Tripura by M/s Tripura State Electricity Corporation Limited, under

the provisions of EIA Notification, 2006 and as amended with subject to compliance of applicable Standard EC conditions with the following additional conditions:

[A] Environmental Management and Biodiversity Conservation:

- i. The Project Proponent shall ensure all the necessary steps towards successful implementation Remediation Plan, Natural Resources and Community Resources Augmentation Plan, as appraised by the EAC, in time bound manner.
- ii. Project Proponent shall be required to submit a bank guarantee of an amount of Rs. 9.75 crore towards Remediation plan, Natural Resources Augmentation Plan and Community Resources Augmentation Plan with the SPCB prior to the grant of EC and proof will be submitted to the MoEF&CC.
- iii. Remediation plan shall be completed in 3 years whereas bank guarantee shall be for 5 years. The bank guarantee shall be released after successful implementation of the EMP, followed by recommendations of the EAC and approval of the regulatory authority.
- iv. The project proponent shall submit Rs. 3.79 crore as penalty as per Ministry's SOP vide OM dated 7.07.2021 under Polluters Pay Principle to the State Pollution Control Board
- v. Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.
- vi. Extensive plantation of native perennial trees for developing tree layer along the plant boundary shall be developed with appropriate thickness as per CPCB guidelines and 90% survival rate. A time bound action plan in this regard to be prepared in consultation with CPCB/expert institution and submitted before Regional Office of the Ministry within 6 months.
- vii. The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. The budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also be updated proportionately.
- viii. 24x7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24x7 online monitoring system. The emission Standards for Municipal Solid Waste based Thermal Power Plants as per Municipal Solid Waste Rules, 2016 dated 8.4.2016 (S.O. 1357 (E)) shall be complied (Refer Part C of Schedule II of Municipal Solid Waste Rules, 2016 dated 8.4.2016 (S.O. 1357 (E))).
- ix. Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.
- x. A well designed rain-water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.
- xi. Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.
- xii. Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers.
- xiii. Environment Management Cell shall be created in the project consisting environmental officers having post graduate degree in environmental

sciences/Environmental Engineering to monitor implementation of Environment Management Plan in the project. The head of the Environment Cell shall report directly to the head of the project.

- xiv. Wildlife conservation plan shall be implemented after due approval of the State PCCF/CWLW. Biodiversity Management Committee (BMC) shall be constituted for Monitoring and Evaluation of implementation of Biodiversity Conservation Plan and Wildlife Conservation Plan as approved by the PCCF/CWLW. The BMC shall comprise MoEF&CC representative from concerned regional office.
- xv. Watershed development plan shall be prepared and implemented focusing on micro watershed development within 10 km radius of the project. Action taken report in this regard be submitted before regional office of the Ministry in 6 monthly compliance report.

[B] Disaster Management

- xvi. Necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and subsequent amendments thereof.
- xvii. Disposal of the excavated muck to be carried out in scientific manner. Restoration and reclamation plan of muck disposal area shall be prepared and shall be taken up pari passu with construction work and to be completed before commissioning of the project.
- xviii. Necessary control measures such as water sprinkling arrangements, and construction of paved roads shall be taken up on priority to arrest fugitive dust at all the construction sites.
- xix. 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.
- xx. The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.

[C] Socio economic

- xxi. Public grievance redressal system shall be established under supervision of project head. The functioning of the system shall be reviewed every month.
- xxii. A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation and conservation of water bodies within 5km radius of the project cover area, creation of sacred groves etc. shall be prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be reported to the Regional office in 6 monthly compliance report.
- xxiii. Epidemiological Study among population within 5 km radius of project cover area shall be carried out on regular interval (Once in two year) through independent agency. Necessary measures shall be taken as per findings of study in consultation with district administration. Action taken report shall be submitted to the Regional Office of the Ministry.
- xxiv. The Project Proponent shall submit the time- bound action plan to the concerned

regional office of the Ministry within 6 months from the date of issuance of Environmental Clearance for undertaking the CER activities, committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.

- xxv. Under CER activities, preference should be given to strengthen the basic amenities in the project affected villages like maintaining drinking water supply, providing health care facilities, etc.
- xxvi. Preference to be given to the local villagers as per the requirements and suitability, in the job/ other opportunities in the project, etc. Measures to be taken to develop skills of the local villagers particularly with respect to the trades related to construction works such as electrician, welder, fitter, etc.
- xxvii. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- xxviii. As committed, a multi-specialty Hospital with 100 beds shall be established to cater the need of population living within 10 km.
- xxix. The establishment of a robust grievance redressal mechanism to address concerns and complaints from local communities regarding the power plant's operations, environmental impacts, or social issues shall be developed. A Senior Officer shall review the functioning of the mechanism twice in a month.

[D] Miscellaneous:

- xxx. 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.
- xxxi. Solar panel be provided to the families living in rural areas within 10 km radius of project.
- xxxii. Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
- xxxiii. The compliance of above conditions shall be monitored by IRO, MoEF&CC through regular site visit twice in a year.

Agenda Item No. 45.4:

Expansion of Satpura Super-Critical Thermal Power Project by installing unit of capacity 1x660 MW at Sarni, Village Brahmanwada Ryt, Tehsil Ghoradongri, District Betul, (Madhya Pradesh) by M/s Madhya Pradesh Power Generating Co. Ltd. – Reconsideration for Environmental Clearance – reg.

[Proposal No. IA/MP/THE/410823/2022; F. No. J-13012/12/2019-IA. II(T)]

45.4.1 The proposal is for grant of environmental clearance to the Expansion of Satpura Super-Critical Thermal Power Project by installing unit of capacity 1x660 MW at Sarni,

Village Brahmanwada Ryt, Tehsil Ghoradongri, District Betul, (Madhya Pradesh) by M/s Madhya Pradesh Power Generating Co. Ltd.

45.4.2: The proposal was earlier considered by the EAC in its 35th EAC meeting held on 28th Dec 2022 and 40th Meeting of EAC held on 25th April 2023 wherein the EAC sought additional information.

The PP submitted the additional details sought by the EAC vide letter dated 18.07.2023 on the following points:

Query 1: Submit revised layout plan exercising the possibility for green plantation on 40% area of 111 ha ash pond area.

Reply: As directed, a revised layout plan for green plantation on 40% area of 111 Ha ash pond area i.e. 44 Ha is prepared. It is to mention here that plantation on 3.2 Ha land adjacent to 111 ha ash dyke is already been done in the past. For balance plantation work, a time bound Action Plan has been obtained from M.P. State Van Vikas Nigam, Betul (an M.P. Govt. Undertaking); for which a Letter of Intent (LoI) has been issued to them on 09.06.2023 with a financial implication of Rs.1.65 Cr (excluding GST). Accordingly, plantation on 10 ha land around the 111 ha ash dyke is being started very soon during current FY 23-24 with it's maintenance during the 2024-25 & 2025-26 (along with bamboo plantation and barbed wire fencing). The balance plantation on 31.2 ha land (44.4 ha -10 ha- 3.2 ha) shall be carried out after reclamation of 31.2 ha area inside the ash dyke.

Query 2: Reason with proper justification for high Fluoride content in the Ground Water samples shall be submitted.

Reply: In context to the instant observation of EAC, it is to bring to your kind notice that as per report published by CGWB-Gol and WRD-GOMP in Sept-2022 ie. "Dynamic Ground Water Resources of Madhya Pradesh (Annexure-4), in Madhya Pradesh fluoride rich water in shallow aquifer occurs in Anuppur, Betul, Bhind, Chhatarpur, Datia, Dhar, Harda, Jabalpur, Katni, Khargone, Morena, Neemuch, Shajapur, Singrauli, Ujjain and Vidisha districts (Annexure-5). The report also states that the maximum fluoride concentration (4.30 mg/l) has been observed at Junapani of Betul District.

As the Satpura TPS is only around 50 Km away from Junapani; therefore, this may be a considerable reason for high Fluoride content in the Ground Water Samples at STPS-Sarni.

Query 3: Submit action taken report duly certified from Regional Office of the Ministry on Partly complied points. Also, submit proposal for amendment in EC proposal for amendment in EC condition of earlier EC w.r.t. condition related to bi-flue stack.

Reply:

The Action taken report on Partly complied points of Environmental Clearances of units 10 & 11 and 111 hectare ash pond of STPS, MPPGCL, Sarni has been duly certified & issued by the MoEF&CC, IRO Bhopal on 16.07.2023, which shows all the points have been almost complied.

Regarding the amendment in EC condition of earlier EC (2x250 MW) w.r.t. condition related to bi-flue stack; it is to submit that that nothing was mentioned about Height of CEMS in EC

dtd. 27.02.2009. There has been a typographical error during the preparation of compliance report.

During visit of IRO-MOEF&CC, Bhopal, it was apprised him that the CEMS is installed at 45 Meter height. Flue can diameter is 5 meter. As per the CPCB guidelines for CEMS, installation requirement is downstream (8D) and upstream (2D). Therefore, CEMS could be installed anywhere at stack height from 40 m to 265 m. Installation of CEMS at 45 m height complies with above requirement of CPCB guidelines. Therefore, no amendment is required and the same is accepted by the authority while certifying the compliance report against EC of 2x250 MW units at STPS.

Query 4: Submit revise action plan for implementation of periphery green plantation with survival rate of more than 90% by adopting Scientific methodology.

Reply: Time bound. Action Plan prepared by M.P. State Van Vikas Nigam (an M.P. Govt. Undertaking) Betul, for implementation of green plantation with survival rate of more than 90% by adopting scientific methodology in respect of proposed unit 1x660 MW on 41 ha has been obtained vide their letter dtd. 26.05.2023, which indicates Action Plan of plantation as per given below:

Year	No. of plantation	Area (in ha)
2023-24	15000	13.50
2024-25	15000	13.50
2025-26	15550	14.00
Total	45550	41.00

Apart from this, it is to inform that MPPGCL have already taken up plantation of: -

- 10,000 plants to be planted during 2023-24 against the point Sl. No. (i) of point no.40.2.4 of the Minutes of Meeting dtd.25.04.2023.
- 20,750 plants during current FY 2023-24 nearby to plant and another ash dyke in the available vacant land; in compliance to the EC conditions against 2x250 MW units of STPS.

As no further vacant land is available within the plant boundary, MPPGCL shall make all-out efforts to plant above mentioned proposed plantation of 45,550 plants in the vacant land available inside the land boundary of MPPGCL.

Query 5: Submit study report on slope stability of ash pond carried out by reputed institution.

Reply: The detailed report along with recommendation has been prepared & submitted on dtd.17.05.2023 by IIT Indore. As per report the ash dyke (111 ha) is safe and in stable condition and also it is properly maintained and structurally safe.

Query 6: Revised plan for dust removal shall be submitted.

Reply: For controlling of fugitive ash dust around the siding of ash pond, spraying water using fixed sprinklers mounted in banks at intervals along the ash pond has been envisaged for suppression of ash dust, as a standard practice in line with CEA guidelines. To control fugitive dust emission typical scheme of sprinkler system envisaged for the Ash Pond. The schematic Diagram is enclosed as Annexure-11. For suppression of fugitive dust Swivel Type Sprinklers shall be provided at appropriate distance, mounted on HDPE pipelines laid inside the Ash Pond. The tapping for these HDPE pipe lines shall be taken from water pipe line laid around the Ash Pond. For pumping water to the water pipeline, suitable number of adequately sized pumps shall be provided in a permanent pump house near Ash recovery water sump. The water requirement for sprinklers shall be met from Ash recovery water sump or through Ash water sump of main plant. The actual sizing of pumps, pipelines, valves, sprinklers etc, could be finalized during detailed engineering

Query 7: Revised CER plan shall be prepared with proper justification and by conducting epidemiological survey and submit as per the points raised during public hearing along with the budget and timeline.

Reply: An order dated 31.05.2023 (Annexure-12) was placed on an agency i.e. Gram Bharti Mahila Mandal, Pathakheda, Distt- Betul for preparation of the CSR/CER plan on the basis of need-based survey. Accordingly, Gram Bharti Mahila Mandal, have conducted a need-based assessment survey work in 11 villages located within 10 kilometer radius around Satpura TPS, Sarni and prepared a detailed report). Based on the outcome of the survey and suggestions made by the agency; Gram Bharti Mahila Mandal, in their report, a CER plan has been formulated for development in the field of Health, Education, Skill Development & Training and to support woman self help Group. The plan with its budgetary provision & timeline

Query 8: Some representations are received on certain issues for which PP shall submit point wise response for further deliberations.

Reply: The point wise reply/clarification information, on the representations as provided vide email dtd. 10.05.2023; is given hereunder:

Issue Raised		Response
1.	The proposed project falls within the corridor area and the project proponent has failed to disclose the presence of wildlife corridors in the area.	As per the letter of Chief Conservator of Forest Bhopal, letter no. F-4/Vidyut/2023/10-11/2129 dated 24-5-2023 the distance of the project site from the following are as follows: 1. Bori Wildlife Sanctuary – 27.58 km 2. Satpura Tiger Reserve – 36.96 km 3. Pench Tiger Reserve – 105.09 km 4. Melghat Tiger Reserve – 91.97 km

2.	We would like to point out to the committee members that the proposed project site falls in the wildlife corridor of Bori Wildlife Sanctuary, Satpura National Park, Pench National Park, and Melghat Wildlife Sanctuary.	As per the letter of Chief Conservator of Forest Bhopal, letter no. F-4/Vidyut/2023/10-11/2129 dated 24-5-2023 the distance of the project site from the following are as follows: 1. Bori Wildlife Sanctuary – 27.58 km 2. Satpura Tiger Reserve – 36.96 km 3. Pench Tiger Reserve – 105.09 km 4. Melghat Tiger Reserve – 91.97 km
3.	As per the report titled “A Policy Framework for Connectivity Conservation and Smart Green Linear Infrastructure in the Central Indian and Eastern Ghats Tiger Landscape” published by Wildlife Conservation Trust, proposed project area falls under medium to high connectivity area.	According to the letter of Chief Conservator of Forest Bhopal, letter no. F-4/Vidyut/2023/10-11/2129 dated 24-5-2023 the distance of tiger reserve and sanctuary as mentioned above, are beyond 10 km radius of the proposed project. However, any management plan or recommendation or conservation plan that will be entrusted by any national or state regulatory authority to the project proponent; will be adhered to.
4.	Section 38-O (g) of the Wildlife Protection Act, 1972 will apply to the proposed project. Section 38-O (g) states, “Ensure that tiger reserves and areas linking one PA or Tiger Reserve areas linking another PA or Tiger Reserve are not diverted for ecologically unsustainable uses, except in public interest and the approval of the NBWL and on the advice of the NTCA”.	Noted. However, according to the letter of Chief Conservator of Forest Bhopal, letter no. F-4/Vidyut/2023/10-11/2129 dated 24-5-2023 the distance of tiger reserve and sanctuary as mentioned above, are beyond 10 km radius of the proposed project. Also, any management plan or recommendation or conservation plan that will be entrusted by any national or state regulatory authority to the project proponent; will be adhered to.
5.	We request the committee to direct the project proponent to submit the proposal to National Tiger Conservation Authority (NTCA) and National Board for Wildlife for obtaining wildlife clearance.	The Satpura TPS Plant is a running project since more than 50 years and having distance more than 10 km from the notified ESZ (Ecologically Sensitive Zone). All obligation and management plans of all regulatory agency as applicable are adhered from time to time.
6.	The wildlife corridor needs to be protected for the free movement of Tigers and other large mammals to establish a healthy population.	We ensure all conservation measures will be taken up, if applicable. It may please be noted that Satpura TPS is a running plant and it is gathered that no man-animal conflicts were/are reported in the area.

7.	Mapping of all the wildlife corridors especially concerning tigers should be scientifically undertaken by the project proponent, with the help of Wildlife Experts, and should be made available online.	The Satpura TPS plant is a running project, having distance more than 10 km from the notified ESZ (Ecologically Sensitive Zone). All obligation and management plans of all regulatory agency as applicable are adhered from time to time. Necessary steps will be taken during implementation of project
8.	The project proponent should be directed to plan its projects so that none of the project and its ancillary activities fall within, nor impact the wildlife corridors. This would include the expansion or construction of any new rail lines, roads, and transmission lines.	Dedicated railway link from Ghoradongari Railway siding to side is available for the transportation of coal and fuel oil for the power plant. No ancillary activities like construction of new rail lines, road, transmission lines fall within, nor envisages any impact on the wildlife protected area.
9.	We urge the committee to kindly consider the importance of wildlife corridors. The proposal, if permitted, will disturb the already fragmented wildlife corridor. Efforts should be undertaken by the respective authorities to restore the fragmented corridor as it will help in creating a diverse gene pool.	We understand the role of Wildlife corridor in creating a healthy and diverse gene pool and tiger population. But the project does not come within 10 km of any national park or wildlife sanctuary. We ensure any management plan or recommendation or conservation plan that will be entrusted by any national or state regulatory authority to the project proponent will be adhered to. Since this is a running plant, all conservation measures will be taken to ensure that no man-animal conflicts occur in the area.
10.	A mitigation plan to preserve the wildlife corridor should be submitted by the project proponent and should be made available online. The Mitigation plan to avoid -Wildlife Conflict should be prepared scientifically with wildlife experts help and made available online.	The project does not come within 10 km of any national park or wildlife sanctuary. We ensure any management plan or recommendation or conservation plan that will be entrusted by any national or state regulatory authority to the project proponent will be adhered to. Since this is a running plant, all conservation measures will be taken to ensure that no man-animal conflicts occur in the area.

11.	It is not clear if ash utilization for the existing units has been undertaken as per the MoEF&CC rules and guidelines.	The ash utilization in 2020-2021 was 94.20%; in 2021-22 was 99.82% and in year 2022-23 is 100%. Areas where it is used are ash based products like bricks, blocks, tiles etc. RMC plants; Cement manufacturers; road construction etc. These activities are recommended under the Fly Ash Notification, 2009 and its subsequent amendments.
12.	Radioactivity studies for the existing units, along with coal analysis should be provided (sulfur, ash percentage, and heavy metals including Pb, Cr, As, and Hg). Details of auxiliary fuel, if any including its quantity, quality, storage, etc should also be given.	Radioactivity and heavy metal content of coal is being monitored through NABL accredited labs. Presently, LDO and HFO are being used as Auxiliary fuel in existing units 2X250 MW; for start-up and for flame stabilization. LDO & HFO for Satpura TPS is being brought to the site by rail, for which HFO tank having capacity of 1000 KL and LDO tank having capacity of 500 KL are available.
13.	In the event the proposal is considered by the committee members , we request the members to kindly direct the project proponent that the FGD units for the stacks be designed with the interlocking system to ensure that the plant cannot operate when the FGD is not fully operational.	FGD system will be installed as per latest environmental stipulation. The design and layout of steam generator and its auxiliaries will consider the wet flue gas desulphurization system, taking suction from duct after ID fans and feeding the de-sulphurised flue gases to the chimney with provision for bypass the FGD system.
14.	The project proponent also fails to mention the details of the dismantling of the existing unit and the details of preparedness to achieve the new emission standards notification dated 07.12.2015	BoD of MPPGCL in its 87 th meeting dtd. 28.12.2016 has resolved to decommission/ retire 1x200 MW + 3x210 MW units (i.e. Unit numbers 6,7,8 & 9 of PH-II & PH-III) of STPS, sarni. The proposal for retirement of these units has been submitted to Energy Department, GoMP, which is under consideration. The Unit No. 8 & 9 (PH-III) have been stopped since 29.02.2020 & 22.02.2020 respectively and unit no. 6 & 7 (PH-II) have been stopped since 05.03.2021. A letter dtd. 09.01.2023 regarding technical constraints for operation of these units of PH-II & III, STPS, Sarni has been submitted to Central Electrical Authority, MoP, Gol, New Delhi.

		On receipt of the response from CEA, further course of action shall be decided accordingly.
15.	The proposed unit and the existing units, are abutting the Satpura Darn Sarni. The impact of the existing and the proposed project on the reservoir, groundwater table, and forest areas should be studied by the project proponent.	<p>Anticipated environmental impacts of proposed project on air quality, water use and quality, land-use, ecological status, soil quality and socio-economic factors has been discussed in chapter 4 of EIA report and relevant extract is given hereunder:</p> <p>Groundwater: No ground water source will be tapped for meeting the water requirements of the power plant. The ash dyke is already existing and properly lined so as to prevent any mishap.</p> <p>Surface Water: Regeneration waste from DM (Demineralized Water) Plant and CPU (Condensate Polishing Unit) will be collected in Neutralizing pit. After Neutralizing; the water will be pumped to CMB (Central Monitoring Basin).</p> <p>Boiler blow down collected in separate sump will be pumped to CMB.</p> <p>Effluent collected in CMB shall be treated in ETP.</p> <p>The Ash Water Recycle System (AWRS) shall be provided to recycle excess slurry water (up to 65% maximum) for utilization in making of ash slurry after chemical treatment, thus making system ZERO LIQUID DISCHARGE.</p> <p>Boiler & ESP area wash water will be collected in pre settling pit.</p> <p>The sewage from plant and township shall be treated in a sewage treatment plant. The treated effluent conforming to prescribed standards shall be utilized for plantation & horticulture to the extent possible.</p> <p>The existing 2x250 MW units with close cycle cooling system and wet ash</p>

		<p>disposal system is based on zero discharge.</p> <p>The proposed plant is designed for zero discharge with COC 6.</p> <p>As such there will be no impact on the reservoir due to effluents.</p>
16.	There are already many existing mines and power plants in this area. The proposed project, if permitted, will further aggravate the situation.	The project proponent has reported the presence of coal mines and existing units of Satpura TPS in the EIA report.
17.	Cumulative Environmental Impact Assessment of all the existing and proposed projects in the 10-km radius of the proposed project.	Impact assessment from the proposed project done and provided in chapter 3&4 of EIA report.
18.	The carrying capacity of a 10 km area around the plant site should be carried and the report should be made available online.	Will be done during operation phase, if required by regulator.
19.	Alignment of proposed transmission lines from power plants shall be submitted by the project proponent. The impact assessment of the same should be included in the cumulative impact assessment study.	Transmission line is already established for the running project. The same shall be utilised for the upcoming proposed unit.
20.	There are no details regarding the proceedings of the public hearing for the proposed unit. The details under the "Action Plan" document on the parivesh website mention only three comments. Whereas the short note on public hearing on the Madhya Pradesh Pollution Control Board website mentions that 47 comments were received during the hearing. The impact of this project on India's commitment to the Paris Climate Change Accord should also be examined.	Minutes of public hearing held on 08.09.2022 at Naya Samaj Kalyan Kendra, Sarni, chaired by Joint Collector, District Betul, Madhya Pradesh, has been provided as annexure 7.1 in the EIA report for which action plan has also been submitted.

21.	We would like to point out to the committee members that none of the documents on the existing project/units are available on the Parivesh website. Moreover, the compliance report link is not available. Therefore, it is not clear if the project proponent has complied with all the previous conditions.	Documents related to EC and monitoring report of existing units of Satpura TPS are available on MoEF&CC website.
22.	We would request you to kindly direct the project proponent to make available all the documents related to the proposed project under the public domain. Till then the project may please be deferred.	Documents in connection with request to grant EC for the proposed 660 MW unit of Satpura TPS are available on Parivesh portal of MoEF&CC.
23.	We would also like to point out to the PIB release 5 th April 2023, "Government declares plan to add 50 GW of renewable energy capacity annually for next 5 years to achieve the target of 500 GW by 2030"	Project is already exploring avenues for having renewable energy.
24.	We would also like to point out the news article "Power Ministry's proposal to halt new coal plants is key to delivering RE targets".	Due to high power demand right mix of power is the key for sustainable development and energy security of the country. MPPGCL is committed to adhere to the mandate of MOP, Govt. of India.
25.	We request the committee not to consider any new proposals for coal based thermal power plants until the plant is finalized by the Government of India to meet commitments made at COP26.	Due to high power demand right mix of power is the key for sustainable development and energy security of the country. MPPGCL is committed to adhere to the mandate of MOP, Govt. Of India.

45.4.3 The EAC during deliberations noted the following:

The proposal is for grant of environmental clearance to the Expansion of Satpura Super-Critical Thermal Power Project by installing unit of capacity 1x660 MW at Sarni, Village Brahmanwada Ryt, Tehsil Ghoradongri, District Betul, (Madhya Pradesh) by M/s Madhya Pradesh Power Generating Co. Ltd.

The project/activity is covered under category A of item 1(d) 'Thermal Power Plants' of the Schedule to the Environmental Impact Assessment Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.

The EAC noted that periphery plantation of the existing unit is not satisfactory therefore PP was requested to submit an undertaking on excessive plantation. Accordingly, PP vide email dated 16.08.2023 submitted an undertaking on following points:

- a. As regard **S. No. (i) of Point no. 40.2.4 of the Minutes i.e. "Submit, Revised layout plan exercising the possibility for green plantation on 40% area of 111 ha ash pond area"** it is confirmed that:
 - (i) Plantation of 10000 nos of plant in 10 Ha will be completed during current monsoon, preferably by mid of Sep-23.
 - (ii) After reclamation of 31.2 Ha area of the ash pond, plantation work on 75% reclaimed area shall be done during monsoon season of FY 2024-25, whereas plantation on balance 25% reclaimed area shall be done during monsoon season of FY 2025-26.
- b. As regard **S. No. (vii) of Point no. 40.2.4 of the Minutes i.e. "Revised CER plan shall be prepared with proper justification and by conducting epidemiological survey and submit as per the points raised during public hearing along with the budget and timeline"**;

it is confirmed that budget provision of Rs. 240 Lakhs shall be enhanced to Rs. 750 Lakhs, which is to be incurred during next three years.

The EAC noted that Chief Conservator of Forest (CCF) Bhopal vide letter no. F-4/Vidyut/2023/10-11/2129 dated 24-5-2023 informed about the distance of the project site from wildlife sanctuary and tiger reserve, whereas it has not been mentioned about the wildlife corridors. In view of the above, it was requested from PP to obtain clarification from the CCF, Bhopal about the presence/existence of wildlife corridors and Human-Wildlife Conflict issue in last few years shall be clarified by the forest department. Accordingly, the CCF's vide its letter no. 3724 dtd. 17.08.2023 indicating the distance of STPS form different Tiger Reserves/ Corridors as under:

- (i) Distance from Satpura Tiger Reserve: 28.09 Km
- (ii) Distance from Satpura - Melghat Tiger Corridor: 2.24 Km
- (iii) Distance from Satpura - Pench Tiger Corridor: 12.75 Km
- (iv) There is no separate Corridor for Bori Abhyaranya. This Abhyaranya is a part of Satpura Tiger Reserve.

Also, the Forest Officer, Forest Department Betul vide its letter no. 5906 dtd. 18.08.2023, informed that "presently no incident has been reported for loss of life by any wild animal".

45.4.4 The EAC after examining the information submitted by the project proponent on PARIVESH and as presented during the meeting **recommended** the proposal for grant of Environmental Clearance to the project for Expansion of Satpura Super-Critical Thermal Power Project by installing unit of capacity 1x660 MW at Sarni, Village Brahmanwada Ryt, Tehsil Ghoradongri, District Betul, (Madhya Pradesh) by M/s Madhya Pradesh Power Generating Co. Ltd, under the provisions of EIA Notification, 2006 and as amended with subject to compliance of applicable Standard EC conditions with the following additional conditions:

[A] Environmental Management and Biodiversity Conservation:

- i. Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.
- ii. Peripheral Green belt (Three row plantation) with Miyawaki plantation technique of along the plant boundary shall be developed with appropriate thickness as per CPCB guidelines and more than 90% survival rate of the plant species. It would be ensured that total 33% area of total project cover area is under green cover focusing on Ash Dyke area.
- iii. Extensive plantation (Sal Tree) within 10 km range of the plant boundary focusing on Tawa river banks (both sides) shall be carried out. An action plan in this regard to be prepared in consultation with CPCB/expert institution and submitted before Regional Office of the Ministry within 3 months.
- iv. 24x7 online monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server. Stack monitoring shall be done through 24X7 online monitoring system. The emission Standards for Municipal Solid Waste based Thermal Power Plants as per Municipal Solid Waste Rules, 2016 dated 8.4.2016 (S.O. 1357 (E)) shall be complied (Refer Part C of Schedule II of Municipal Solid Waste Rules, 2016 dated 8.4.2016 (S.O. 1357 (E))).
- v. Adequate dust extraction system such as cyclones/bag filters and water spray system in dusty areas such as waste delivery points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system. Water Sprinkling on roads shall be done in every 6 hours in winter season and 3 hours in summer season of roads within 1 km range approaching the plant. A logbook shall be maintained for the activity and be in six-monthly compliance report.
- vi. The Environmental Management Plan (EMP) shall be strictly adhered to as submitted in the EIA/EMP reports. The budgetary provisions for implementation of EMP, shall be fully utilized and not to be diverted to any other purpose. In case of revision of the project cost or due to price level change, the cost of EMP shall also be updated proportionately.
- vii. LED display of air quality (Continuous Online monitoring) shall be installed on the roadside (within 1 km range) and nearby hotspots viz. residential colony, Schools Hospitals; maintenance of devices shall be done on regular basis.
- viii. Everyday cleaning of road/Paved roads within 1 km range of plant site shall be ensured throughout the year through vaccum based vehicle.
- ix. Environment Audit of plant shall be done annually and report shall be submitted to Regional office of the Ministry.
- x. Project proponent shall explore the use of treated sewage water from the Sewage Treatment Plant of Municipality / local bodies/ similar organization located within 50km radius of the proposed power project to minimize the water drawl from surface water

bodies.

- xi. A detailed action plan regarding leachate handling shall be prepared and implemented in consultation with SPCB and the same shall be submitted to the Regional Office of the Ministry. Zero liquid discharge shall be adopted. Leachate shall be treated and reused. No treated leachate shall be discharged in any circumstances. Characteristics of Leachate and the treated leachate shall be monitored once in quarter and records shall be maintained.
- xii. Oil and grease recovered from the treatment plant should be disposed only through authorized recyclers.
- xiii. Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.
- xiv. Fly ash handling shall be done strictly as per extent rules/regulations of the Ministry/CPCB issued from time to time including Ministry's Notification No. S.O.5481(E) dated 31st December, 2021. No coal shall be transported through road shall be allowed.
- xv. Monitoring of surface water quality and Ground Water quality shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall also be undertaken and results/findings submitted along with half yearly monitoring report.
- xvi. A well designed rain-water harvesting system shall be put in place within six months, which shall comprise of rain water collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.
- xvii. No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up/ operation of the power plant. A list of all small and large water bodies shall be prepared after physical survey within 10 km radius of the project. A detailed conservation plan for all these water bodies shall be prepared and submitted before the Regional Office of the Ministry within 3 months. Implementation status of conservation plan be submitted in 6 monthly compliance report.
- xviii. Watershed development plan shall be prepared and implemented focusing on micro watershed development within 10 km radius of the project. Action taken report in this regard be submitted before regional office of the Ministry in 6 monthly compliance report.
- xix. A detailed ecological monitoring and survey covering forestry, fisheries, wildlife and its habitat shall be done once in two years to assess the impacts of project on the local environment and ecology. Monitoring report shall be uploaded on the Parivesh Portal and a copy of the same be submitted to the regional office of MoEF&CC.

- xx. For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
- xxi. An Environmental Cell headed by the Environment Manger with postgraduate qualification in environmental science/environmental engineering, shall be created. It shall be ensured that the Head of the Cell shall directly report to the Head of the Plant who would be accountable for implementation of environmental regulations and social impact improvement/mitigation measures.
- xxii. The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.
- xxiii. The energy sources for lighting purposes shall preferably be LED based.
- xxiv. Explore desulphurization from biotechnological method.

[B] Disaster Management

- xxv. Necessary permission to be obtained for quarrying construction materials for the project as per the EIA Notification, 2006 and subsequent amendments thereof.
- xxvi. Disposal of the excavated muck to be carried out in scientific manner. Restoration and reclamation plan of muck disposal area shall be prepared and shall be taken up pari passu with construction work and to be completed before commissioning of the project.
- xxvii. Necessary control measures such as water sprinkling arrangements, and construction of paved roads shall be taken up on priority to arrest fugitive dust at all the construction sites.
- xxviii. 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.
- xxix. The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.

[C] Socio-economic

- xxx. Public grievance redressal system shall be established under supervision of project head. The functioning of the system shall be reviewed every month.
- xxxi. A vision document comprising prospective plan for implementation of various CER activities, plantation programme outside the project cover area, rejuvenation and conservation of water bodies within 5km radius of the project cover area, creation of sacred groves etc. shall be prepared and submitted to the Regional Office of the Ministry within 6 months. Implementation status of the same shall be reported to the Regional office in 6 monthly compliance report.
- xxxii. Epidemiological Study among population within 5 km radius of project cover area

shall be carried out on regular interval (Once in two year) through independent agency. Necessary measures shall be taken as per findings of study in consultation with district administration. Action taken report shall be submitted to the Regional Office of the Ministry.

- xxxiii. The Project Proponent shall submit the time- bound action plan to the concerned regional office of the Ministry within 6 months from the date of issuance of Environmental Clearance for undertaking the CER activities, committed during public consultation by the project proponent and as discussed by the EAC, in terms of the provisions of the MoEF&CC Office Memorandum No.22-65/2017-IA.III dated 30 September, 2020. The action plan shall be implemented within three years of commencement of the project.
- xxxiv. Under CER activities, preference should be given to strengthen the basic amenities in the project affected villages like maintaining drinking water supply, providing health care facilities, etc.
- xxxv. Preference to be given to the local villagers as per the requirements and suitability, in the job/ other opportunities in the project, etc. Measures to be taken to develop skills of the local villagers particularly with respect to the trades related to construction works such as electrician, welder, fitter, etc.
- xxxvi. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- xxxvii. A multi-specialty Hospital with 100 beds shall be established to cater the need of population living within 10 km.
- xxxviii. The establishment of a robust grievance redressal mechanism to address concerns and complaints from local communities regarding the power plant's operations, environmental impacts, or social issues shall be developed. A Senior Officer shall review the functioning of the mechanism twice in a month.

[D] Miscellaneous

- xxxix. 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.
 - xl. Solar panel be provided to the families living in rural areas within 10 km radius of project.
 - xli. Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.
 - xlii. The compliance of above conditions shall be monitored by IRO, MoEF&CC through regular site visit twice in a year.

The meeting ended with vote of thanks to the Chair.

ATTENDANCE

S. No	Name	Role	Attendance
1.	Shri Gururaj P. Kundargi	Chairman	P
2.	Dr. N.P Shukla	Member	P
3.	Shri Suramya Vora	Member	P
4.	Dr Santosh Kumar Hampannavar	Member	P
5.	Dr. Umesh Jagannathrao Kahalekar	Member	P
6.	Shri K. B. Biswas	Member	P
7.	Dr. Nandini. N	Member	P
8.	Shri M. P. Singh	Member (Representative of CEA)	P
9.	Dr. Nazimuddin	Member	P
10.	Shri K. Gowrappan	Member (Co-opted)	P
11.	Shri Yogendra Pal Singh	Member Secretary	P

APPROVAL OF THE CHAIRMAN

----- Forwarded Message -----

From: gpkundargi@gmail.com

To: Yogendra Pal Singh <yogendra78@nic.in>

Sent: Tue, 29 Aug 2023 12:34:08 +0530 (IST)

Subject: Re: Draft MOM of the 45th EAC (Thermal) meeting held on 16.08.2023-reg

Dear Dr Yogendra ji/ Dr Sourabh ji

Draft Minutes are fine & approved for further needful action.

Thank you

G P Kundargi