



सत्यमेव जयते

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

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**Minutes of 44TH MEETING OF Expert Appraisal Committee meeting Thermal  
 Projects held from 20/07/2023 to 20/07/2023**

**Date:** 08/08/2023

**MoM ID:** EC/MOM/EAC/407724/7/2023  
**Agenda ID:** EC/AGENDA/EAC/407724/7/2023  
**Meeting Venue:** N/A  
**Meeting Mode:** Virtual  
**Date & Time:**

20/07/2023	10:30 AM	05:30 PM
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**1. Opening remarks**

The 44th 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 20th July, 2021 through video conference under the Chairmanship of Shri Gururaj P. Kundargi.

**2. Confirmation of the minutes of previous meeting**

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

**3. Details of proposals considered by the committee**

**Day 1 -20/07/2023**

**3.1. Agenda Item No 1:**

**3.1.1. Details of the proposal**

<b>Proposed Expansion of Raipur Thermal Power Plant by adding 1600 (2x800) MW Ultra Super-Critical to existing 1370 (2x685) MW in CSIDC Industrial Area, at Village Raikheda, Gaitara &amp; Chicholi, Tilda Block, Raipur District, Chhattisgarh by Adani Power Limited by Adani Power Ltd. located at RAIPUR, CHHATTISGARH</b>			
<b>Proposal For</b>		Fresh ToR	
<b>Proposal No</b>	<b>File No</b>	<b>Submission Date</b>	<b>Activity (Schedule Item)</b>

IA/CG/THE/435583/2023	J-13012/62/2008-IA. II(T)	07/07/2023	Thermal Power Plants (1(d))
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### 3.1.2. Project Salient Features

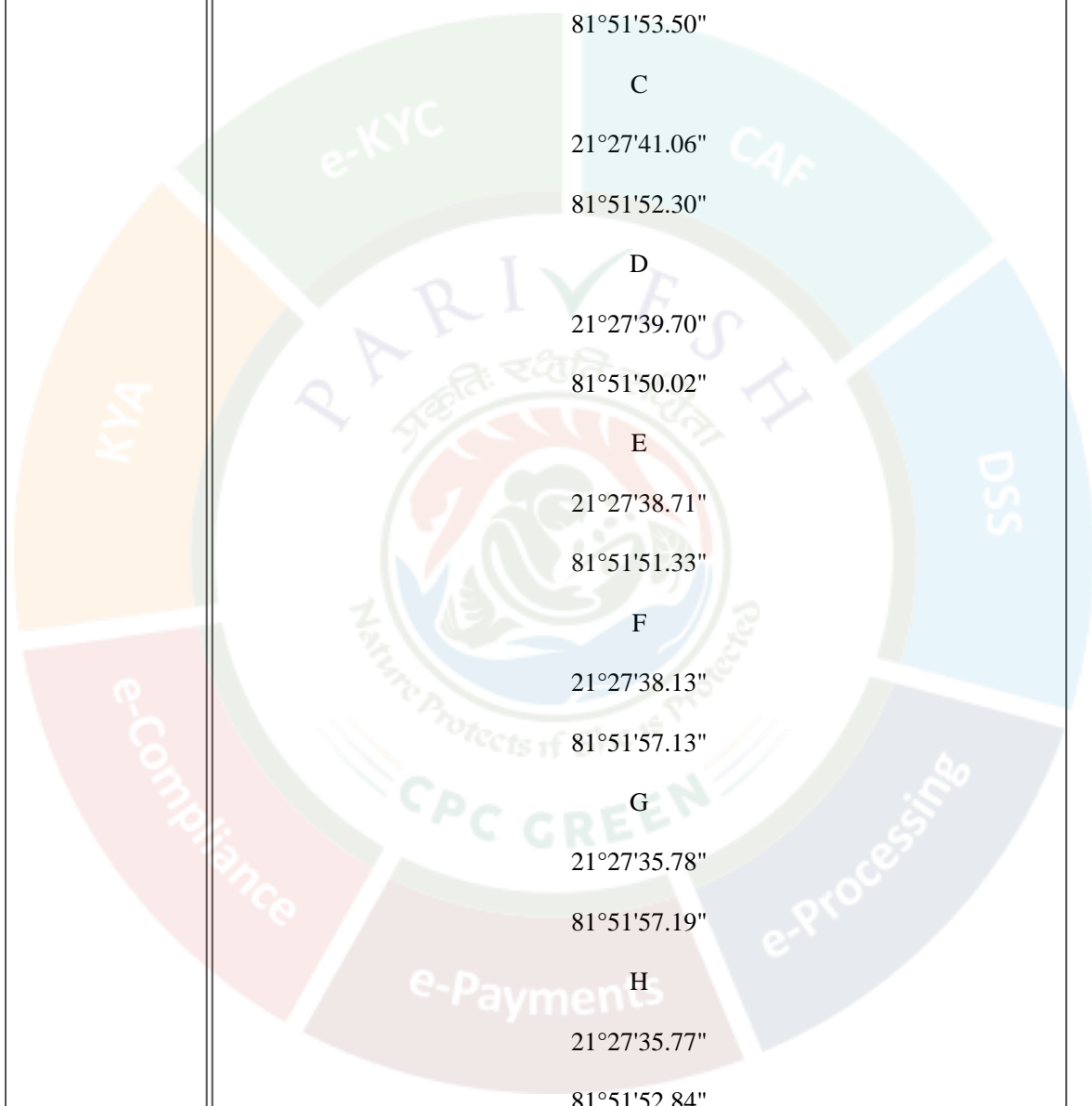
**44.5.1** The proposal is for grant of terms of reference to the project for Expansion of Raipur Thermal Power Plant by adding 1600 (2x800) MW Ultra Super-Critical to existing 1370 (2x685) MW in an area of 885 Acres in CSIDC Industrial Area, at Village Raikheda, Gaitara & Chicholi, Tilda Block, Raipur District, Chhattisgarh by M/s Adani Power Limited.

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

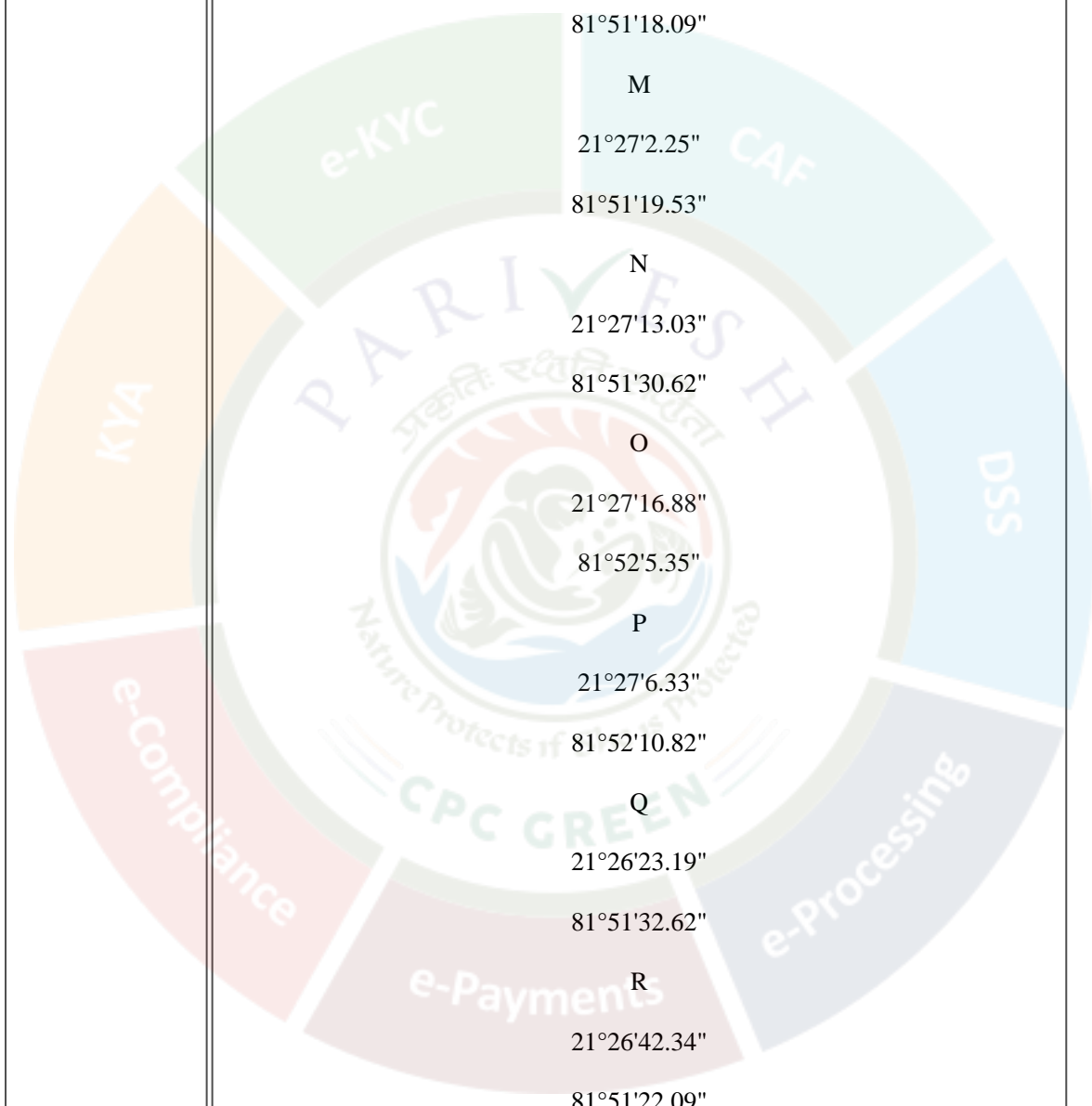
1. M/s Adani Power Limited (APL), Raipur (Formerly Known as Raipur Energen Ltd. - REL) is a company primarily engaged in the business of power generation and owns and operates a 1370 (2x685) MW Coal based Thermal Power Plant situated at Raipur Dist. in Chhattisgarh.
2. Earlier, REL was known as GMR Chhattisgarh Energy Limited (GCEL) and earlier belonged to GMR Group. GCEL got into financial stress and was unable to service its debt obligations, so the lead bank Axis Bank initiated a competitive bidding process. Adani Power Limited (APL) selected as successful bidder and LOI issued to APL on 24.06.2019. APL acquired control over GCEL w.e.f. 2nd August 2019 on fulfilment of conditions precedent as per SPAs and renamed it as 'Raipur Energen Limited'.
3. Further, Raipur Energen Limited has implemented approved Board Resolution to consider the matter for Amalgamation of the Company with Adani Power Limited as per Scheme of Amalgamation by NCLT.
4. The Project is proposed to be developed as an expansion by adding 1600 (2x800) MW to the existing 1370 (2x685) MW units and all the necessary infrastructure to cater the requirement of the enhanced capacity will be developed within the existing plant boundary while also using the facilities of the existing plant.
5. The plot is located at 21° 27' 42.16" to 21° 26' 26.03" N latitude and 81° 51' 48.45" to 81° 50' 48.09" E longitude.
6. The MoEF&CC granted Environmental Clearance for Super Critical Coal Based Thermal Power Plant of capacity 1370 (2X685) MW in CSIDC Industrial Area, at Villages Raikheda, Gaitara and Chicholi, Tilda Block, Raipur District, Chhattisgarh vide letter no J-13012/62/2008-IA. II(T) dated: 09.05.2011 and its subsequent amendments dated 13.06.2013, 18.11.2014, 04.02.2015, 09.12.2015, & EC transferred dated; 05.11.2019 (GCEL to REL) & 24.04.2023 (REL to APL).
7. CECB has granted Consent to Operate (CTO) with with validity up to 31.03.2025. Unit- 1 of the power station achieved COD in June'2015 and Unit -2 of the power station in April'2016.
8. Latest Six-Monthly EC compliance report for the period October'2022 to March'2023 is submitted to MoEF&CC and CECB vide letter no. PL/REL/EMD/MoEFCC/EC/208/05/23 dated; 23.05.2023. IRO Raipur, MoEF&CC has submitted compliance status report vide file no. 4- 11/2013(ENV)/485 & 779 dated: 19.01.2022 & 21.06.2022. MoEF&CC has Certified EC Compliance vide file no. IA-J-11014/15/2022-IA-I dated: 16th March'2023.
9. Subsequently, Consent to Establish (CTE) was issued on dated; 25.07.2011 and Consent to Operate (CTO) was issued with validity up to 31.03.2025 from Chhattisgarh Environment Conservation Board (CECB), Raipur, Chhattisgarh. The project was commissioned in April'2016 and plant/units are operational.
10. Adani Power Limited, Raipur has proposed to set up an Ultra Super-Critical Thermal Power Project with configuration of two units of 800 MW each deploying the state-of-the-art technology in the field, to have an installed capacity of 1600 MW. The proposed project is envisaged as an expansion of the existing 2x685 MW capacity within the existing plant boundary.
11. The silent features of the project are as under: -

Name of the Proposal	Proposed Expansion of Raipur Thermal Power Plant by adding 1600 (2x 800) MW Ultra Super-Critical to existing 1370 (2x685) MW in CSIDC Industrial Area, at Village Raikheda, Gaitara & Chicholi, Tilda Block, Raipur District, Chhattisgarh
Location (Including coordinates)	<b>Pillar No.</b> <b>Latitude (N)</b>

	Longitude (E)
	A
	21°27'45.95"
	81°51'51.75"
	B
	21°27'44.66"
	81°51'53.50"
	C
	21°27'41.06"
	81°51'52.30"
	D
	21°27'39.70"
	81°51'50.02"
	E
	21°27'38.71"
	81°51'51.33"
	F
	21°27'38.13"
	81°51'57.13"
	G
	21°27'35.78"
	81°51'57.19"
	H
	21°27'35.77"
	81°51'52.84"
	I
	21°27'33.63"
	81°51'50.33"
	J
	21°27'33.15"



	81°51'50.13"
	K
	21°27'23.74"
	81°51'41.60"
	L
	21°27'26.11"
	81°51'18.09"
	M
	21°27'2.25"
	81°51'19.53"
	N
	21°27'13.03"
	81°51'30.62"
	O
	21°27'16.88"
	81°52'5.35"
	P
	21°27'6.33"
	81°52'10.82"
	Q
	21°26'23.19"
	81°51'32.62"
	R
	21°26'42.34"
	81°51'22.09"
	S
	21°26'25.57"
	81°50'48.18"
	T
	21°27'7.96"



	81°50'49.46" U 21°27'27.40" 81°50'36.72" V 21°27'14.65" 81°51'6.40" W 21°27'36.98" 81°50'58.78" X 21°27'37.44" 81°51'17.76" Y 21°27'38.33" 81°51'37.57" Z 21°27'43.34" 81°51'44.74"
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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	4 no. of Units (Existing: 2 no. & Proposed: 2 no.)
Cost of project	Project Cost:

	<ul style="list-style-type: none"> <li>Existing EC: 8290.0 Crore</li> <li>Proposed Expansion (2x800) MW is <b>13,600 Crore</b></li> </ul>
Total area of Project	<p>It is an expansion project, proposed within the existing plant boundary.</p> <ul style="list-style-type: none"> <li>The land is already in possession with APL, Raipur TPP. The total area of the project site 358.15 Ha. (885 Acres) including the existing facility.</li> </ul>
Details of consultant and status of accreditation	<p><b>Accredited Consultant:</b> Paramarsh Servicing Environment and Development</p> <p><b>Accreditation Certificate No.:</b> NABET/EIA/ 2124/RA 0224 (Valid till: 01/05/2024)</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"> <li>Infrastructure development.</li> <li>Direct &amp; indirect employment opportunity</li> <li>Revenue generation to central &amp; state government.</li> <li>Trickledown effect of enhance profitability to the local populace</li> <li>Skill development and capacity building like vocational training, income generation programmes and entrepreneurship development program</li> <li>Awareness programme and community activities, like health camps, medical aides, family welfare camps, sanitization/ cleanliness awareness programme, immunization camp, sports &amp; cultural activities, plantation, etc.</li> <li>Awareness about water borne diseases and pandemic diseases etc. will be done to local villagers.</li> </ul> <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 Super Critical Coal Based Thermal Power Plant of capacity 1370 (2X685) MW in CSIDC Industrial Area, at Villages Raikheda, Gaitara and Chicholi, Tilda Block, Raipur District, Chhattisgarh from Ministry of Environment, Forest &amp; Climate Change (MoEF&amp;CC) vide letter no J-13012/62/2008-IA. II(T) dated: 09.05.2011 and its subsequent amendments dated 13.06.2013, 18.11.2014, 04.02.2015, 09.12.2015, &amp; EC transferred dated; 05.11.2019 (GCEL to REL) &amp; 24.04.2023 (REL to APL).</p> <p>Subsequently, Consent to Establish (CTE) was issued on dated; 25.07.2011 and Consent to Operate (CTO) was issued with validity up to 31.03.2025 from Chhattisgarh Environment Conservation Board (CECB), Raipur, Chhattisgarh. The project was commissioned in April'2016 and plant/units are operational.</p>
R&R details	Not Applicable
Any litigation/Court case pertaining to the project	There are no litigation/Court cases pertaining to proposed project except few cases as regulatory & non-regulatory on utilities like Transmission, Rail, Mines etc.
Certified EC compliance report (if applicable)	<p>IRO Raipur, MoEF&amp;CC has submitted compliance status report vide file no. 4-11/2013(ENV)/485 &amp; 779 dated: 19.01.2022 &amp; 21.06.2022.</p> <p>MoEF&amp;CC has Certified EC Compliance vide file no. IA-J-11014/15/2022-IA-I dated: 16<sup>th</sup> March'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.															
<b>Is FRA (2006) done for FC-I</b>	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 7.89 MTPA, considering Design coal GCV as 3200 kcal/kg. Auxiliary liquid fuels, viz. LDO/HSD requirement per annum: 2500 kilo litres.															
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	MOU from nearby commercial coal mines. SEL-South Eastern Coal field limited, Raigarh Area MCL- Mahandi Coal field Limited, Korba															
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: 300 – 400 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 filling, 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)	<p>Ash Dyke Area: 150 Acres</p> <table border="1"> <thead> <tr> <th>Pillar No.</th> <th>Latitude (N)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>21°27'9.46"</td> <td>81°51'55.40"</td> </tr> <tr> <td>2</td> <td>21°27'2.20"</td> <td>81°51'41.08"</td> </tr> <tr> <td>3</td> <td>21°26'49.00"</td> <td>81°51'35.26"</td> </tr> <tr> <td>4</td> <td></td> <td></td> </tr> </tbody> </table>	Pillar No.	Latitude (N)	Longitude (E)	1	21°27'9.46"	81°51'55.40"	2	21°27'2.20"	81°51'41.08"	3	21°26'49.00"	81°51'35.26"	4		
Pillar No.	Latitude (N)	Longitude (E)														
1	21°27'9.46"	81°51'55.40"														
2	21°27'2.20"	81°51'41.08"														
3	21°26'49.00"	81°51'35.26"														
4																

	<p>21°26'29.00"</p> <p>81°51'39.00"</p> <p>Average height of area: 312 m above MSL</p>
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 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.

Name of Project	Expansion / Green Field (new): (IPP / Merchant / Captive):	Expansion (IPP)
Proposed Expansion of Raipur Thermal Power Plant by adding 1600 (2x 800) MW Ultra Super-Critical to existing 1370 (2x685) MW in CSIDC Industrial Area, at Village Raikheda, Gaitara & Chicholi, Tilda Block, Raipur District, Chhattisgarh	If expansion, the details of ECs (including amendments and extension of validity) of existing Units etc.	<p><b>S. No.</b></p> <p><b>Description of Environmental Clearance</b></p> <p><b>Date</b></p> <p><b>Letter No</b></p> <p>1.</p> <p>Environmental Clearance for 2x685 MW Super Critical Imported Coal Based Thermal Power Plant at villages Raikheda, Gaitara and Chicholi, in Tilda Block, in Raipur District, in Chhattisgarh</p> <p>09.05.2011</p> <p>J-13012/62/2008-IA.II (T)</p> <p>1.</p> <p>Amendment in Environmental Clearance</p> <p>13.06.2013</p> <p>1.</p>



		<p>Amendment in Environmental Clearance w.r.t temporary permission for road transportation of coal</p> <p>18.11.2014</p> <p>1.</p> <p>Amendment in Environmental Clearance regarding Change in Source of Coal</p> <p>04.02.2015</p> <p>1.</p> <p>Amendment in Environmental Clearance regarding Change in Source of Coal</p> <p>09.12.2015</p> <p>1.</p> <p>Environmental Clearance Transfer from M/s. GMR Chhattisgarh Energy Limited to Raipur Energen Limited (REL)</p> <p>05.11.2019</p> <p>1.</p> <p>Environmental Clearance Transfer from REL to Adani Power Limited (APL).</p> <p>24.04.2023</p>
	<p>If expansion, the date of latest monitoring done by the Regional Office (R.O) of MoEF&amp;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</p>	<p>Latest Six-Monthly EC compliance report for the period October'2022 to March'2023 is submitted to MoEF&amp;CC and CEGB vide letter no. APL/REL/EMD/MoEFCC/EC/208/05/23 dated; 23.05.2023.</p> <p>IRO Raipur, MoEF&amp;CC has submitted compliance status report vide file no. 4-11/2013(ENV)/485 &amp; 779 dated: 19.01.2022 &amp; 21.06.2022.</p> <p>MoEFCC has Certified EC Compliance vide file no. IA-J-11014/15/2022-IA-I dated: 16<sup>th</sup> March'2023.</p>

	be submitted.	
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:	<b>Electricity Generation capacity:</b> 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><b>Land requirement (In acres)</b></p> <p><b>Existing</b></p> <p><b>Proposed</b></p> <p><b>Total</b></p> <p>BTG (including FGD (Ph II), Switchyard, Transformer yard etc.</p> <p>35</p> <p>50</p> <p>85</p> <p>Coal &amp; Ash Facility (Including Stock yard &amp; AHP facility)</p> <p>58</p> <p>25</p> <p>83</p> <p>Water System (Including raw water reservoir, Cooling Tower, CW Pump house, DM Water System, Clarified, Industrial Wastewater Treatment facility)</p> <p>20</p> <p>20</p> <p>40</p> <p>Raw water reservoir</p> <p>65</p> <p>60</p> <p>125</p> <p>Green Belt</p> <p>353</p>	

	353
Ash dyke	150
	0
	150
Misc. Facility (Including Plant Road/boundary road, Misc. Building etc. vacant space)	34
	15
	49
<b>Total</b>	<b>885</b>
	<b>885</b>
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: If under construction phase: please specify the reasons for delay, works completed till date and balance works along with expected date of Completion. If under operation phase, date of commissioning(COD) of each unit. Whether the plant was Under shutdown since commissioning, details and reasons.	The existing plant is in operation. The Unit- 1 (685MW) of the power station achieved COD in June 2015 and Unit -2 (685MW) of the power station achieved COD in April 2016.
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 land is already in possession with APL, Raipur TPP. The total area of the project site 358.15 Ha. (885 Acres) including the existing facility.
Fuel to be used:	Coal and Auxiliary Fuel
Quantity of Fuel	Annual Coal requirement for the 2x800 MW units is about 7.89 MTPA,

Required per Annum:	considering Design coal GCV as 3200 kcal/kg. Auxiliary liquid fuels, viz. LDO/HSD requirement per annum: 2500 kilo litres.
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Quantity and details of Linkage: MOU from nearby commercial coal mines. SEL-South Eastern Coal field limited, Raigarh Area MCL- Mahandi Coal field Limited, Korba Available: 7.89 MTPA Name of Block: MOU from nearby commercial coal mines. 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: 3200 Kcal/Kg
Details of mode of transportation of coal from coal source to the plant premises along with distances.	Coal receipt at Plant shall be through Rail. Distance: 300km
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, 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 & Coordinates) Average height of area above MSL (m)	Area 150 acres  Latitude  Longitude  Fly ash Pond 21°26'36.24"N 81°51'38.21"E Bottom ash pond 1 21°26'46.08"N 81°51'42.17"E Bottom ash pond 2 21°26'59.21"N 81°51'43.47"E Average height 312m

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 Samoda Dam at Mahanadi River approx. at 35 km from Plant Site.
Quantity of water requirement:	4000m <sup>3</sup> /hr or 36 MCM/year
Distance of source of water from Plant:	35 km
Whether barrage/ weir/ intake well/ jack well/ others proposed:	No
Mode of conveyance of water:	Existing Pipelines
Status of water linkage:	WRD permission for the existing water demand of 25 MCM is obtained and the WRD permission for the water demand of proposed expansion will be obtained
Cooling system	Closed recirculating condenser cooling system with Natural Draft Cooling Tower (NDCT)
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:	<p>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:</p> <p><b>Water course/R.F./P.F.</b></p> <p><b>Distance (km) w.r.t. plant site</b></p> <p><b>Direction</b></p> <p>Jamuniya Nala 0.25 NNW</p> <p>Jamuniya Nadi 2.00 N</p> <p>Bhatapara Brance Distributory 2.15 WSW</p> <p>Pindrao Tank</p>

	2.75
	SE
	Kumhari Tank
	4.30
	NE
	Khauna Minor
	4.35
	WSW
	Kirna Tank
	5.00
	WNW
	Sillari Distributary
	5.45
	WSW
	Dhumma Nala
	7.00
	WNW
	Patthra Nala
	7.10
	SW
	Banjari Nala
	8.00
	NNE
	Pikndih Minor
	8.20
	S
	Baloda Branch
	9.90
	ESE
	Mahanadi Mani Canal



	<p>10.20</p> <p>SE</p> <p>Mohrenga P.F</p> <p>adjacent</p> <p>East</p> <p>Khaulidabri P.F</p> <p>2.9</p> <p>ESE</p>																														
<p>Any litigation/Court case pertaining to the project:</p>	<p>There are no litigation/Court cases pertaining to proposed project except few cases as regulatory &amp; non-regulatory on utilities like Transmission, Rail, Mines etc.</p>																														
<p>Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendment:</p>	<p>Project Cost as per EC (dated 19.05.2011): 8290.0 Crore Actual cost of present configuration: 8290.0 Crore Project Cost of expansion: 13,600 Crore</p>																														
<p>Employment Potential for entire project/plant and employment potential for the proposed amendment (specify number of persons and quantitative information).</p>	<table border="0"> <thead> <tr> <th colspan="2"><b>Particular Phase</b></th> </tr> <tr> <th><b>Existing (Nos.)</b></th> <th><b>Proposed (Nos.)</b></th> </tr> <tr> <th colspan="2"><b>Total</b></th> </tr> <tr> <th colspan="2"><b>Manpower</b></th> </tr> </thead> <tbody> <tr> <td colspan="2"><b>Construction Phase</b></td> </tr> <tr> <td></td> <td>Permanent: 0</td> </tr> <tr> <td></td> <td>Permanent: 276</td> </tr> <tr> <td></td> <td>Permanent: 276</td> </tr> <tr> <td></td> <td>Contract: 0</td> </tr> <tr> <td></td> <td>Contract: 1200</td> </tr> <tr> <td></td> <td>Contract: 1200</td> </tr> <tr> <td colspan="2"><b>Operation Phase</b></td> </tr> <tr> <td></td> <td>Permanent: 238</td> </tr> <tr> <td></td> <td>Permanent: 276</td> </tr> <tr> <td></td> <td>Permanent: 514</td> </tr> </tbody> </table>	<b>Particular Phase</b>		<b>Existing (Nos.)</b>	<b>Proposed (Nos.)</b>	<b>Total</b>		<b>Manpower</b>		<b>Construction Phase</b>			Permanent: 0		Permanent: 276		Permanent: 276		Contract: 0		Contract: 1200		Contract: 1200	<b>Operation Phase</b>			Permanent: 238		Permanent: 276		Permanent: 514
<b>Particular Phase</b>																															
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	Contract: 250
	Contract: 250
	Contract: 500
	<b>Total</b>
	<b>488</b>
	<b>2002</b>
	<b>2490</b>

### 3.1.3. Deliberations by the EAC in previous meetings

N/A

### 3.1.4. Deliberations by the EAC in current meetings

**44.5.3 The EAC during deliberations noted the following:**

The proposal is for grant of Terms of Reference to the project for Expansion of Raipur Thermal Power Plant by adding 1600 (2x800) MW Ultra Super-Critical to existing 1370 (2x685) MW in an area of 885 Acres in CSIDC Industrial Area, at Village Raikheda, Gaitara & Chicholi, Tilda Block, Raipur District, 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 MoEF&CC granted Environmental Clearance for Super Critical Coal Based Thermal Power Plant of capacity 1370 (2X685) MW in CSIDC Industrial Area, at Villages Raikheda, Gaitara and Chicholi, Tilda Block, Raipur District, Chhattisgarh vide letter no J-13012/62/2008-IA. II(T) dated: 09.05.2011 and its subsequent amendments dated 13.06.2013, 18.11.2014, 04.02.2015, 09.12.2015, & EC transferred dated; 05.11.2019 (GCEL to REL) & 24.04.2023 (REL to APL).

As informed by the PP the EAC also noted that PP has achieved 100% ash utilization and total land Area of about 885 Acres has been identified for the Project which includes the existing 2x685 MW Units and land area for accommodation of coal stockyard, water reservoir, roads, township & green belt etc.

The existing Ash pond area is 150 Acres. PP committed that no new ash pond will be constructed and will use existing ash dyke for the proposed expansion. Further, no new transportation shall be constructed for the proposed expansion of Thermal power plant. It was also noted that there are two water bodies are available just adjacent to the plant boundary of which water used by the local people for portable purposes.

The EAC also noted that there were certain representations received raising concerns about impact of project on Wildlife habitat/ corridor in the region.

### 3.1.5. Recommendation of EAC

Recommended

### 3.1.6. Details of Terms of Reference



### 3.1.6.1. Specific

<b>Disaster Management</b>	
1.	1. Disaster Management Plan shall be prepared and incorporated in EIA/EMP report.
<b>Environmental Management and Biodiversity Conservation</b>	
1.	<ol style="list-style-type: none"><li>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 in view of proximity of wildlife sanctuary.</li><li>2. PCCF letter shall be obtained stating that no projects component is falling in any protected area, Wildlife sanctuary, eco-sensitive area and wildlife corridor.</li><li>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.</li><li>4. Action plan for continuous analysis of surface water quality in and around 1km from the plant boundary.</li><li>5. 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.</li><li>6. 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.</li><li>7. A comparative chart shall be prepared with changes observed from previous baseline study and present baseline study.</li><li>8. Detailed action plan shall be prepared for maintenance of air pollution control equipment.</li><li>9. An action plan for reclamation plan of existing Ash pond shall be prepared be submitted along with EIA/EMP report.</li><li>10. Details of Ash management of existing and proposed project shall be submitted, along with 5-year plan for 100 % ash utilization.</li><li>11. Details of Dry Ash handling system along with supplementary coal handling system shall be submitted.</li><li>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.</li><li>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.</li><li>14. Baseline Study for Heavy metals in Ground water, Surface water and soil to be carried out and incorporated in EIA/EMP report.</li><li>15. Details pertaining to water source, treatment and discharge should be provided.</li><li>16. Zero Liquid Discharge plan shall be submitted.</li><li>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.</li><li>18. PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.</li><li>19. Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.</li><li>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.</li></ol>
<b>Miscellaneous:</b>	
1.	1. 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

	<p>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.</p> <ol style="list-style-type: none"> <li>2. Certified compliance report of previous EC to be submitted certified by Regional office of the MoEF&amp;CC. IRO shall also provide specific observations on the status of OCMS and emission control equipment of all units of the plant.</li> <li>3. PP shall submit details of court cases and its status for the project (if any).</li> <li>4. The PP should submit the photograph of monitoring stations &amp; sampling locations. The photograph should bear the date, time, latitude &amp; 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.</li> <li>5. Arial view video of project site shall be recorded through drone and be submitted.</li> <li>6. Undertaking from the pro that 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.</li> </ol>
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### 3.1.6.2. Standard

1(d)	<b>Thermal Power Plants</b>
<b>Statutory compliance</b>	
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.
<b>Details of the Project and Site</b>	
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
<b>Environmental Baseline study and mitigation measures</b>	
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 wind 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 <sub>2</sub> 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-conducive 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.
<b>Corporate Environment Policy</b>	
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.
<b>Miscellaneous</b>	
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.

<b>Additional TOR for Coastal Based Thermal Power Plants Projects (TPPs)</b>	
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.

### 3.2. Agenda Item No 2:

#### 3.2.1. Details of the proposal

**2x250 MW Thermal Power Plant at Satpura Thermal Power Station (STPS), Sarni – Extension Units 10 & 11. by MADHYA PRADESH POWER GENERATING CO. LIMITED (MPPGCL) located at JABALPUR, MADHYA PRADESH**

Proposal For		Amendment in EC	
Proposal No	File No	Submission Date	Activity (Schedule Item)
IA/MP/THE/434801/2023	J-13011/34/2008-IA. II(T)	27/06/2023	Thermal Power Plants (1(d))

### 3.2.2. Project Salient Features

**44.6.1** The proposal is for grant of amendment in Environment Clearance for 2x250 MW Unit 10 & 11 Satpura Thermal Power Station in an area of 57.86 ha at Sarni, District Betul, Madhya Pradesh by M/s Madhya Pradesh Power Generating Co. Limited.

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

1. The MoEF&CC granted Environmental Clearance granted vide letter dated 27.02.2009 for installation of 2x250 MW Thermal Power Plant at Satpura Thermal Power Station (STPS), Sarni – Extension Units 10 & 11 located at Sarni, Madhya Pradesh in favor of M/s Madhya Pradesh Power Generating Co. Limited (MPPGCL).
2. Permission granted by the Ministry vide letter dated 27.03.2015 for new Ash Pond of 111 ha for Satpura Thermal Power Station (STPS), Sarni Distt.-Betul h by M/s Madhya Pradesh Power Generating Co. Limited (MPPGCL).
3. The project proponent has requested for amendment in the EC with the details are as under: -

SN	Para of EC issued by MoEF&CC	Details as per the EC	To be revised/ read as	Justification/ reasons
1	Condition no.3/(xvi) of EC no. J-13011/34/2008 -IA.II(T) dtd.27.02.2009 for 2x250 MW unit, at STPS, Sarni i.e. Sulphur content in liquid fuels will not exceed 0.5%.	Storage facilities for auxiliary liquid fuel such as LDO and/ HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modifications required, if any shall be incorporated in the DMP.	Storage facilities for auxiliary liquid fuel such as LDO and/ HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modifications required, if any shall be incorporated in the DMP. Project proponent shall undertake resource depletion of HFO and no further purchase shall be made of HFO. PP shall use LDO as liquid fuel and Sulphur content shall not exceed 1.5%.	Reason for the amendment is elaborated here under: <ul style="list-style-type: none"> <li>• Use of Light Diesel oil (LDO) as start-up fuel and HFO as support fuel at low loads and for furnace stabilization, are conceived for 2x250 MW unit no. 10 &amp; 11 of Satpura Thermal Power Station, MPPGCL, Sarni.</li> <li>• MPPGCL has decided to discontinue the use of HFO in these units and only resource stock available of HFO would be utilized and no further purchase shall be made for HFO.</li> <li>• Very less quantity of oil is required for these units. Specific oil consumption in these units have been very less in comparison to MPERC norms 0.5 ml/KWh.</li> </ul>



		Sulphur content in the liquid fuel will not exceed 0.5%.		<p>FY2020-21: 0.21 ml/KWh  FY2021-22: 0.21 ml/KWh  FY2022-23: 0.14 ml/KWh</p> <ul style="list-style-type: none"> <li>LDO and HFO are being procured from reputed PSU's Oil Companies namely M/s IOCL, M/s BPCL and M/s HPCL. The Quality specifications of LDO confirms to the IS 15770:2008 standard which stipulates maximum total Sulphur percent by mass 1.5, while HFO confirms to IS 1593:1982, with maximum Sulphur content in furnace oil in order of 4.0 (by mass %).</li> <li>The PSU's Oil Companies namely HPCL, BPCL and IOCL were requested to provide details of low Sulphur oil (less than 0.5%) being supplied in the state of Madhya Pradesh. Oil Companies informed that due to no demand, they are not supplying Low Sulphur Oil (less than 0.5%) at any TPS of NTPC or other state utilities in Madhya Pradesh.</li> </ul> <p>In view of above, partial amendment of the EC condition in terms of Sulfur content is requested with permission for resource depletion of available HFO and to continue LDO in operation with maximum Sulphur content 1.5%.</p>
2	Condition no.3/(v) of Permission issued vide no. J-13012/5/ 2013-	A long term study of radio activity and heavy metals	The term "in-built continuous" in said stipulation may kindly be amended with	<ul style="list-style-type: none"> <li>Radioactivity and heavy metal contents</li> </ul>

	<p>IA.II(T) dtd. 27.03.2015 for 111 Ha Ash pond regarding mechanism for an in-built continuous monitoring of radio activity and heavy metals in coal and fly ash (including bottom ash).</p>	<p>contents on coal to be used shall be carried out through a reputed institute and results thereof analyzed shall be reported every two year in the monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.</p>	<p>"regular periodical monitoring"</p>	<p>in coal, bottom ash and fly ash are being analysed through 3rd party NABL accredited laboratories.</p> <ul style="list-style-type: none"> <li>MPPGCL humbly requests to allow carry out the analysis <b>on Quarterly Basis</b> for Radioactivity and heavy metal contents in coal, bottom ash and fly ash; instead of establishing in-built continuous monitoring.</li> </ul> <p>The condition for establishing in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash); may please be exempted.</p>
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### 3.2.3. Deliberations by the EAC in previous meetings

N/A

### 3.2.4. Deliberations by the EAC in current meetings

**44.6.3** The EAC after detailed deliberations on information submitted by the project proponent **recommended** the proposal for amendment in EC condition as requested by the PP, under the provisions of EIA Notification, 2006 and as amended subject to compliance of following additional conditions:

- 24x7 online Continuous monitoring system for ambient air quality parameters SO<sub>x</sub>, NO<sub>x</sub> and PM shall be established with connected server to CPCB and SPCB.
- Other conditions of the EC letter dated 27.02.2009 and amendment letter dated 27.03.2015 shall remain unchanged.

### 3.2.5. Recommendation of EAC

Recommended

### 3.2.6. Details of Environment Conditions

### 3.2.6.1. Specific

Additional Condition	
1.	1. 24x7 online Continuous monitoring system for ambient air quality parameters SO <sub>x</sub> , NO <sub>x</sub> and PM shall be established with connected server to CPCB and SPCB. 2. Other conditions of the EC letter dated 27.02.2009 and amendment letter dated 27.03.2015 shall remain unchanged.

### 3.3. Agenda Item No 3:

#### 3.3.1. Details of the proposal

Expansion of Waste to Energy Plant from 24 MW to 60 MW by M/s. Delhi MSW Solutions Ltd. (DMSWSL) at Tehsil Narela, District North West, Delhi by DELHI MSW SOLUTIONS LIMITED located at NORTH WEST, DELHI			
Proposal For		Fresh EC	
Proposal No	File No	Submission Date	Activity (Schedule Item)
IA/DL/THE/430833/2023	J-13012/01/2022-IA.I (T)	10/07/2023	Thermal Power Plants (1(d))

#### 3.3.2. Project Salient Features

PP vide email dated 17.07.2023 informed that due to non-availability of Authorised person of the Proposal, they will not able to attend the meeting.  The proposal was <i>deferred</i> on the above lines.
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#### 3.3.3. Deliberations by the EAC in previous meetings

N/A
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#### 3.3.4. Deliberations by the EAC in current meetings

<i>deferred</i>
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#### 3.3.5. Recommendation of EAC

Deferred for ADS
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### 3.4. Agenda Item No 4:

#### 3.4.1. Details of the proposal

<b>Proposed Expansion of Koderma Thermal Power Station (Koderma Ph-II) by installation of 2X800 MW plant at Village: Benjhidi, Dist- Koderma, Jharkhand – 825 421 by M/s. Damodar Valley Corporation by DAMODAR</b>
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<b>VALLEY CORPORATION</b> located at <b>KODERMA, JHARKHAND</b>			
<b>Proposal For</b>		Fresh ToR	
<b>Proposal No</b>	<b>File No</b>	<b>Submission Date</b>	<b>Activity (Schedule Item)</b>
IA/JH/THE/434435/2023	J-13011/2/2005-IA.II(T)	24/06/2023	Thermal Power Plants (1(d))

### 3.4.2. Project Salient Features

<p><b>44.3.1</b> The proposal is for grant of Terms of Reference to Expansion of Koderma Thermal Power Station (Koderma Phase-II) by installation of 2X800 MW plant in an area 763.96 Ha (existing) at Village - Benjhidi, Dist. - Koderma, Jharkhand by M/s Damodar Valley Corporation.</p> <p><b>44.3.2</b> The Project Proponent and the accredited Consultant M/s. ABC Techno Labs India Pvt. Ltd, made a detailed presentation on the salient features of the project and informed that:</p> <ol style="list-style-type: none"> <li>M/s Damodar Valley Corporation (DVC) is planning to expand its existing power plant at Village –Benjhidi, Dist- Koderma, Jharkhand – 825 421 on an area of 763.96 Ha. (1887.795Acres).</li> <li>Koderma Thermal Power Station (KTPS) is located in Village – Benjhidi, Dist- Koderma, Jharkhand – 825421. The nearest town is Koderma which is located at a distance of 8.5 Km towards NE from the project site. Koderma Thermal Power Station (KTPS) is situated about 8.5 Km from Koderma city and 48 Km from Hazaribagh city. There is no national park existing within a 10 km radius of the plant. Koderma Wildlife Sanctuary is located about 8.3 Km towards Northern side of the project site.</li> <li>The Ministry earlier accorded EC vide letter no. J-13011/2/2005-IA.II (T); dated 23.06.2005 to 2 X 500 MW Koderma Thermal Power Station at Koderma, Jharkhand by M/s Damodar Valley Corporation. M/s DVC has an existing Consent to Operate issued by Jharkhand State Pollution Control Board on 28<sup>th</sup> April 2023.</li> <li>KTPS has total land area of 763.96 Ha. The existing plant facilities (Ph I) is located at an area of 104.99 Ha. The existing Ash pond area is 154.71 Ha and the area for greenbelt is 182.66 Ha. The existing project has a production capacity of 1000 MW (2X500 MW). The existing project has water supply from Tilaiya dam on river Barakar.</li> <li>Coal is the raw material used for production of 1000 MW of power. The APCM devices installed at site for Ph I are Bag filters, Electrostatic precipitators, NOx control, Flue Gas Desulphurisation System, &amp; Dust Suppression and Extraction Systems.</li> <li>The industrial effluent generated is treated in ETP installed at site. The domestic effluent is treated in the STP present at site. There is no discharge of wastewater outside the premises.</li> <li>Land required for the proposed project is 763.96 Ha. (1887.795 Acres) which is in possession. There is no existence of displaced habitants in the identified land. Land is also devoid of any major vegetation. Local people will be engaged for construction activities and the local area has all the associated and supportive infrastructure facilities.</li> <li>The salient features of the project are as under:-</li> </ol>	
Name of the Proposal	Proposed Expansion of 2X800 MW plant by M/s Damodar Valley Corporation
Location (Including coordinates)	Village: Benjhidi 24°23' 12.00"N
Inter- state issue involved	No
Seismic zone	III
Attracts the General Conditions (Yes/No)	No

Powerhouse Installed Capacity	2600 MW
Generation of Electricity Annually	1.2 million MW
No. of Units	2
Cost of project	INR 1435774 c
Total area of Project	763.96 Ha
Details of consultant and status of accreditation	ABC Techno L Certificate no: Accredited
Project Benefits	Local people w Local people w More revenue v The project is profitability pa M/s Damodar Responsibility The proposed p educate local y Provide & conc
Status of other statutory clearances	Acquired
Certified compliance report (if applicable)	EC Will be obtaine
Status of Stage- I FC	Not Applicable
Fuel to be used:	Coal
Quantity of Fuel required per Annum:	23970 TPD
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Central Coalfie Acquired
Details of mode of transportation of coal from coal source to the plant premises along with distances	Rail
Fly Ash Disposal System Proposed	Ash pond
Ash Pond/ Dyke (Area, Location & Co-ordinates)	382.31 Acres
Average height of area above MSL (m)	402 m
Quantity of Fly Ash to be generated Bottom Ash to be generated:	11000 TPD 2200 TPD
Fly Ash utilization (details)	Road Construc Fly Ash brick Cement Plant
Stack Height (m) & Type of Flue	275 m Double flue
Land requirement: TPP site	Sl. No Details

Ash Pond  
Township  
MGR etc.  
(if  
expansion  
state additional  
requirement)



Existing Area i	land	1	259.46	461.14	24.43%
Total after exp		2	382.31	382.31	20.25%
Area as % of T		3	40.43	40.43	2.14%
		4	113.85	113.85	6.03%
		5	451.37	622.97	33.00%
		6			
Open area					

	511.375	
	138.095	
	7.32%	
	7	
	Colony Area	
	129	
	129	
	6.83%	
	Total	
	1887.795	
	1887.795	
	100%	
Status of Land acquisition:	Acquired	
Fuel to be used:	Coal	
Quantity of Fuel Required per Annum:	23970 TPD	
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Quantity and d Name of Block	
Details of mode of transportation of coal from coal source to the plant premises along with distances.	Total distance	
Fly Ash Disposal System proposed:	Medium conce	
Ash Pond / Dyke: (Area, Location & Co- ordinates) Average height of area above MSL (m)	No additional a	
Quantity of Fly Ash to be Generated:	11000 TPD	
Quantity of Bottom Ash to be Generated:	2200 TPD	
Fly Ash utilisation percentage with details:	Road Construc Fly Ash brick Cement Plant	
Stack Height (m) & Type of Flue	275(m) (new) I	
Source of Water:	Tilaiya Dam ov	
Quantity of water requirement:	115200 KLD	
Distance of source of water from Plant:	4	
Whether barrage/ weir/ intake well/ jack well/ others proposed:	No	

Mode of conveyance of water:	Pipeline
Status of water linkage:	Acquired 16.12
Names & distance of National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites	Koderma WLS
Rivers, Tanks, Reserve Forests etc. Located within 10 Km from the plant boundary:	The Barakar r boundary.
Any litigation/Court case pertaining to the project:	No
Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendment:	Rs 1435774 (Cron
Employment Potential for entire project/plant and employment potential for the proposed amendment (specify number of persons and quantitative information).	400 Direct 700 Indirect

### 3.4.3. Deliberations by the EAC in previous meetings

N/A
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### 3.4.4. Deliberations by the EAC in current meetings

<p><b>44.3.3 The EAC during deliberations noted the following:</b></p> <p>The proposal is for grant of Terms of Reference to expansion of Koderma Thermal Power Station (Koderma Phase-II) by installation of 2X800 MW plant in an area 763.96 Ha (existing) at Village - Benjhidi, Dist. - Koderma, Jharkhand by M/s Damodar Valley Corporation.</p> <p>The project/activity is covered under category 'A' of item 1(d) 'Thermal Power Plants' of the Schedule to the Environment Impact Assessment (EIA) Notification, 2006 and requires appraisal at Central level by the sectoral EAC in the Ministry.</p> <p>The EAC noted that the Ministry granted EC vide letter no. J-13011/2/2005-IA II (T) dated 23.06.2005 to 2 X 500 MW Kodarma Thermal Power Station at Kodarma, Jharkhand by M/s Damodar Valley Corporation and Consent to Operate issued by Jharkhand State Pollution Control Board on 28<sup>th</sup> April 2023. Further noted that Koderma WLS is about 8.3 Km towards Northern side of the project site. The existing project has water supply from Tilaiya dam on river Barakar. The EAC noted that M/s KTPS has total land area of 763.96 Ha. The existing plant facilities (Ph I) is located at an area of 104.99 Ha. The existing Ash pond area is 154.71 Ha and the area for greenbelt is 182.66 Ha and no new ash pond has been proposed for proposed expansion of Thermal power plant.</p> <p>The EAC also noted that there were certain representations received raising concerns about impact of project on Wildlife habitat/ corridor in the region.</p>
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### 3.4.5. Recommendation of EAC

Recommended
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### 3.4.6. Details of Terms of Reference

#### 3.4.6.1. Specific

<b>[C] Miscellaneous</b>	
1.	<ol style="list-style-type: none"> <li>1. 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.</li> <li>2. Certified compliance report of previous EC to be submitted certified by Regional office of the MoEF&amp;CC. IRO shall provide specific observations on the status of OCMS and emission control equipment of all units of the plant.</li> <li>3. PP shall submit details of court cases and its status for the project (if any).</li> <li>4. The PP should submit the photograph of monitoring stations &amp; sampling locations. The photograph should bear the date, time, latitude &amp; 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.</li> <li>5. Arial view video of project site shall be recorded through drone and be submitted.</li> <li>6. 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.</li> <li>7. EAC shall visit the site before submission of EIA/EMP report by the PP to finalize environmental safeguards for (1) ash handling (2) coal handling (3) dry ash handling system.</li> </ol>
<b>Disaster Management</b>	
1.	<ol style="list-style-type: none"> <li>1. Disaster Management Plan shall be prepared and incorporated in EIA/EMP report.</li> </ol>
<b>Environmental Management and Biodiversity Conservation</b>	
1.	<ol style="list-style-type: none"> <li>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 in view of proximity of wildlife sanctuary.</li> <li>2. PCCF letter shall be obtained stating that no projects component is falling in any protected area, Wildlife sanctuary, eco-sensitive area and wildlife corridor.</li> <li>3. NBWL clearance is required as project is falling within 10 km radius of the Koderma Wildlife Sanctuary. Proof of submission of application for the same shall be submitted along with EIA/EMP report.</li> <li>4. 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.</li> <li>5. 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.</li> <li>6. 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.</li> <li>7. A comparative chart shall be prepared with changes observed from previous baseline study and present baseline study</li> <li>8. Detailed action plan shall be prepared for maintenance of air pollution control equipment.</li> <li>9. An action plan for reclamation plan of existing Ash pond shall be prepared be submitted along with EIA/EMP report.</li> <li>10. Details of Ash management of existing and proposed project shall be submitted, along with 5-year plan for</li> </ol>

	<p>100 % ash utilization.</p> <p>11. Details of Dry Ash handling system along with supplementary coal handling system shall be submitted.</p> <p>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.</p> <p>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.</p> <p>14. Baseline Study for Heavy metals in Ground water, Surface water and soil to be carried out and incorporated in EIA/EMP report.</p> <p>15. Details pertaining to water source, treatment and discharge should be provided.</p> <p>16. Zero Liquid Discharge plan shall be submitted.</p> <p>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.</p> <p>18. PP shall submit action plan for using treated Sewage/Domestic wastewater for its operations.</p> <p>19. Project Proponent to conduct Environmental Cost Benefit Analysis for the project in EIA/EMP Report.</p> <p>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.</p>
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### 3.4.6.2. Standard

1(d)	<b>Thermal Power Plants</b>
<b>Statutory compliance</b>	
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.
<b>Details of the Project and Site</b>	
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.
<b>Ecology biodiversity and Environment</b>	
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
<b>Environmental Baseline study and mitigation measures</b>	
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.
<b>Environmental Management Plan</b>	
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.
<b>Green belt development</b>	
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 <sub>2</sub> 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
<b>Socio-economic activities</b>	
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-conducive 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.
<b>Corporate Environment Policy</b>	
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.
<b>Miscellaneous</b>	
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.
<b>Additional TOR for Coastal Based Thermal Power Plants Projects (TPPs)</b>	
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 Desalination 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.

### 3.5. Agenda Item No 5:

#### 3.5.1. Details of the proposal

**Expansion of Coal Based Thermal Power Plant from 1x350 MW to 2X350 MW” at Village- Sahajbahal, Tehsil: Lakhanpur, Dist: Jharsuguda, State: Odisha by M/s Ind-Barath Energy (Utkal) Ltd (IBEUL) (subsidiary of JSW Energy Ltd.) by IND BARATH ENERGY UTKAL LIMITED located at JHARSUGUDA,ODISHA**

<b>Proposal For</b>		Fresh ToR	
<b>Proposal No</b>	<b>File No</b>	<b>Submission Date</b>	<b>Activity (Schedule Item)</b>
IA/OR/THE/433320/2023	J-13012/31/2008-IA.II(T)	14/06/2023	Thermal Power Plants (1(d))

### 3.5.2. Project Salient Features

**44.4.1** The proposal is for grant of Terms of Reference to the project for expansion of Coal Based Thermal Power Plant from 1x350 MW to 2X350 MW at Village Sahajbahal, Tehsil Lakhanpur, District Jharsuguda, Odisha by M/s Ind-Barath Energy (Utkal) Ltd.

**44.4.2** The Project Proponent and the accredited Consultant M/s EQMS Global Pvt. Ltd, made a detailed presentation on the salient features of the project and informed that:

1. The Environmental clearance was granted by MoEF&CC vide letter no. J-13012/31/2008-IA. II (T) dated 30<sup>th</sup> Nov, 2009 to install 2x350 MW Coal based thermal power plant at village Sahajbahal, PO Charpali- Barpali, Via: Bandhbahal, Tehsil: Lakhanpur, Jharsuguda, Odisha to M/s IBEUL; however, out of total 2x350 MW, power plant of capacity 1x350 MW was already commissioned in year 2016 and was operational as per CTO granted by OSPCB vide CTO no. 8024/IND-I-CON-6430 dated 09.06.2017 valid till 31.03.2018. Meanwhile, the unit became non-operational due to the financial crisis. CTO has been granted by OSPCB for Phase I (1x350 MW) vide letter no. 4856/IND-I-CON-6430 dated 28.03.2023. Environmental clearance expired on 31.12.2018.
2. Thereafter, the company (M/s Ind-Barath Energy (Utkal) Ltd) (IBEUL) admitted into corporate insolvency resolution process (“CIRP”) on 29<sup>th</sup> August 2018 (“Insolvency Commencement Date”) on application made by its financial creditors. M/s Ind-Barath Energy (Utkal) Limited, now a subsidiary company of JSW Energy Ltd(JSWEL) operates as an energy company. JSW Energy Limited (“JSW”) JSW had acquired the power plant which was earlier under the ownership of IBEUL.
3. Further, for Unit-II (1x350 MW) more than 50% construction was completed in 2016. Due to financial issues the construction work of Unit -II was stopped.
4. The Chronology of events in the establishment of existing unit and subsequently obtaining the appropriate approvals is given as under:

S. No.	Type of Approval	F. No./ Order No.	Details
1.	MoU with Govt. of Odisha for establishment of 2X350 MW TPP	MoU dated. 7 Feb 2009	Applied for renewal and is under approval
2	Water allocation for the project from dept. of water resources, Odisha	WR-MAJII-WRC-0009/14 dated. 11/5/2017	It is applied for re-allocation and is under approval
3.	Environmental Clearance	F. No. J-13012/31/2008-IA.II (T) dated 30.11. 2009	2X350 MW Coal Based Thermal Power Plant
4.	Consent to Establish	Order No: 13374/Ind-II-NOC-5151 dated 13.08.2010	2X350 MW Coal Based Thermal Power Plant
5.	Extension of validity of	File no: J-13012/31/2008-IA.II (T) dated	2X350 MW Coal



	Environment Clearance	04.02.2015	Based Thermal Power Plant
6.	Consent to Operate	Order No: 16909/IND-I-CON-6430 dated 29.10.2015 valid up to 31.03.2016.	For Unit - I 1 X 350 MW Coal based Thermal Power Plant
7.	Extension of validity of Environment Clearance	File no: J-13012/31/2008-IA.II (T) dated 09.03.2016	2X350 MW Coal Based Thermal Power Plant
8.	Renewal of Consent to operate	Order No:5872/IND-I-CON-6430 dated 30.03.2016 valid up to 31.03.2017.	For Unit - I 1 x 350 MW Coal based Thermal Power Plant
9.	Extension of validity of Environment Clearance	File no: J-13012/31/2008-IA.II (T) dated 03.03.2017	2x350 MW Coal Based Thermal Power Plant
10.	Consent to Establish	Order No: 4815/IND-II-NOC-5151 dated 31.03.2017	2x350 MW Coal Based Thermal Power Plant
11.	Renewal of Consent to operate	Order No:8024/IND-I-CON-6430 dated 09.06.2017 valid up to 31.03.2018.	For Unit - I 1 x 350 MW Coal based Thermal Power Plant
12.	Extension of validity of Environment Clearance	File no: J-13012/31/2008-IA.II (T) dated 06.03.2018.	2x350 MW Coal Based Thermal Power Plant
13.	Resolution plan approval by the NCLT (National Company Law Tribunal)	IA.NO: 882 of 2019 dated 25.07.2022	-
14.	Consent to Operate	4856/IND-I-CON-6430 dated 28.03.2023. with validity up to 31 March 2024 and renewable for three years	For Unit - I 1 x 350 MW Coal based Thermal Power Plant

1. Current Status of Construction Work of Unit-II are as under:

Sl. No.	Items	Current status of construction work / % work completed
1	Rail Network system Construction work Status	90
2	Status of Boiler Installation work	70
3	Status of Turbine and generator Installation work	40
4	Status ESP and Dcting System	50
5	Status of Ash Handling System	40
6	Water treatment facility	90
7	Status of Coal Handling Plant	60
8	Water Compressor and Pump House	50
9	Stack (Twin flue)	100

1. Status of Litigation Pending against the proposal, if any: There is a PIL at High court Odisha filed in 2014 before acquisition of JSW Energy through NCLT.
2. The silent features of the project are as under: -

Name of the Proposal	1. Expansion of Coal Based Thermal Power Plant from 1x350 MW to 2X350 MW at Village Sahajbahal, Tehsil Lakhanpur, District Jharsuguda, Odisha by M/s Ind-Barath Energy (Utkal) Ltd
Location (Including coordinates)	1. Village Sahajbahal, Tehsil Lakhanpur, District Jharsuguda, Odisha 2. Latitude: 21°39'39.02"N 3. Longitude: 83°55'18.23"E
Inter- state issue involved	1. Not Applicable
Seismic zone	1. Zone – III (Moderate Risk Zone)
Capacity / Cultural command area (CCA)	1. Capacity of Plant: 2. Unit -I (Phase-I): 1 x 350 MW 3. Unit -II (Phase-II): 1 x 350 MW
Attracts the General Conditions (Yes/No)	1. No
Powerhouse Installed Capacity	1. Unit -I (Phase-I): 1 x 350. MW 2. Unit -II (Phase-II): 1 x 350 MW
Generation of Electricity Annually	3066 MU (Million Unit) /1X350 MW unit = Total 6132 MU for 2X350 MW TPP.
No. of Units	1. 2
Cost of project	1. 3200 Crore
Total area of Project	1. 240 Ha
Details of consultant and status of accreditation	1. M/s EQMS Global Pvt. Ltd. 2. (NABET Accreditation Number: NABET/EIA/1922/RA0197 Valid Upto- 02.08.2023)
Project Benefits	1. It will fulfill the demand supply gap of power. 2. It will generate employment
Status of other statutory clearances	Not Applicable
R&R details	Not Applicable
Any litigation/Court case pertaining to the project	1. There is a PIL at High court Odisha filed in 2014 before acquisition of JSW Energy through NCLT.

Is the proposal under any investigation? If so, details thereof.	1. Not Applicable
Any violation case pertaining to the project:	<ol style="list-style-type: none"> <li>Yes,</li> <li>Violation of Forest (Conservation) Act, 1980 during plant construction under previous Ind Barath Energy management.</li> <li>In response to Hight court direction dated 17<sup>th</sup> may 2023, MoEF IRO has recommended for the regularisation for construction activities already done under violation as per the REC meeting held on 13 June 2023.</li> </ol>
Certified EC compliance report (If applicable)	1. Shall be taken after grant of TOR.
Status of Stage- I FC	1. MoEF&CC IRO has recommended the forest land diversion proposal and regularisation for construction activities already done under violation and the proposal is under stage I approval.
Additional detail (If any)	1. -
Is FRA (2006) done for FC-I	Yes
Fuel to be used:	Coal
Quantity of Fuel required per Annum:	<ol style="list-style-type: none"> <li>14700 TPD for 2X350 MW TPP,</li> <li>7350 TPD for 1X350 MW</li> </ol>
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	1. Mahanadi Coal Field L Belpahar Coal Fields
Details of mode of transportation of coal from coal source to the plant premises along with distances	<ol style="list-style-type: none"> <li>Mode of transportation: Rail Distance from Source: 14 km from mines</li> <li>Source of coal: Mahanadi Coal Field L Belpahar coal fields</li> </ol>
Fly Ash Disposal System Proposed	It shall be sent to the Cement Manufacturer. Ash shall be disposed off through HCSD in emergency ash pond during emergency.
Ash Pond/ Dyke (Area, Location & Co-ordinates) Average height of area above MSL (m)	<ol style="list-style-type: none"> <li>Details of Ash Pond:  <b>Phase I</b> <b>Coal consumption/hr</b>  <b>300</b>  <b>Tonnes</b>  <b>Total running hr</b></li> </ol>

	24
	hr
<b>Total coal/day</b>	7200
	tonnes
<b>Total ash/day/unit</b>	3168
	tonnes
<b>ash/unit/PLF-80%</b>	2534.4
	Tonnes
<b>Land 20 acre (Within Plant)</b>	
<b>Ash pond area</b>	20
	acre
<b>Ash pond area</b>	80937.1
	m <sup>2</sup>
<b>Depth</b>	10
	m
<b>Volume</b>	809371
	m <sup>3</sup>
<b>Density</b>	1.2
	Tonnes/m <sup>3</sup>
<b>Capacity</b>	971245
	Tonnes

	<b>Ash dumping/day</b>	2500
		tonnes
	<b>Ash dumping /year</b>	912500
		tonnes
	<b>Ash dumping @ 100 % for 1 unit</b>	1.06
		Year
	<b>Ash dumping @ 50 % for 1 unit</b>	2.12
		Year
	1. Co-ordinate: <b>21°39'18.8" N, 83°55'08.8" E</b>	
	Average height of area above MSL (m): 214	
<b>Phase II</b>		
<b>Coal consumption/hr</b>	300	
	Tonnes	
<b>Total running hr</b>	24	
	hr	
<b>Total coal/day</b>	7200	
	tonnes	
<b>Total ash/day/unit</b>	3168	
	tonnes	
<b>ash/unit/PLF-80%</b>	2534.4	
	Tonnes	
	<b>Land 135 acre (Outside Plant)</b>	

	<b>Ash pond area</b>	135
		acre
	<b>Ash pond area</b>	546326
		m <sup>2</sup>
	<b>Depth</b>	15
		m
	<b>Volume</b>	8194890
		m <sup>3</sup>
	<b>Density</b>	1.2
		Tonnes/m <sup>3</sup>
	<b>Ash dyke capacity</b>	9833868
		Tonnes
	<b>Ash Dumping /day /unit</b>	2500
		tonnes
<b>Ash dumping /year/unit</b>	912500	
	tonnes	
<b>Ash dumping /year/2 unit</b>	1825000	
	tonnes	
<b>Ash dumping @ 100 % for 2 units</b>	5.38	
	Year	

	<p><b>Ash dumping @ 50 % for 2 units</b></p> <p>10.77</p> <p>Year</p> <p>1. Co-ordinate: 21°40'24.357" N, 83°56'36.1662" E</p> <p>2. Average height of area above MSL (m): 206 amsl</p>
Quantity of a. Fly Ash to be generated. b. Bottom Ash to be generated:	Quantity of a. Fly Ash to be generated: 5290 MTPA. For 2X350 MW TPP b. Bottom Ash to be generated: 1324 MTPA
Fly Ash utilization (details)	It shall be sent to Cement Manufacturer and disposed off. in ash pond through HCSD during emergency
Stack Height (m) & Type of Flue	Stack Height: 275 m Type of Flue: Concrete outer shell and steel flue inside

### 3.5.3. Deliberations by the EAC in previous meetings

N/A
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### 3.5.4. Deliberations by the EAC in current meetings

<p><b>44.4.3 The EAC during deliberations noted the following:</b></p> <p>The proposal is for grant of Terms of Reference to Expansion of Expansion of Coal Based Thermal Power Plant from 1x350 MW to 2X350 MW at Village Sahajbahal, Tehsil Lakhanpur, District Jharsuguda, Odisha by M/s Ind-Barath Energy (Utkal) Ltd.</p> <p>The EAC noted that the Environmental clearance was granted by MoEF&amp;CC vide letter F.No. J-13012/31/2008-IA. II (T) dated 30<sup>th</sup> Nov, 2009 and out of total capacity of 2x350 only 1x350 MW (Unit-I) was commissioned in year 2016. Further, the Unit- I became non-operational due to the financial crisis and Environmental clearance was expired on 31.12.2018. Total 20% of green belt has been developed till date in the plant boundary.</p> <p>The EAC noted that project is located at severally polluted area as notified by CPCB. As informed by the PP that for Unit-II (1x350 MW) more than 50% construction was completed in 2016. Due to financial issues the construction work of Unit -II was stopped. It was also noted that a PIL is pending at High court Odisha filed in 2014 regarding violation of Forest conservation Act, 1980 before acquisition of JSW Energy through NCLT.</p> <p>The EAC also noted that earlier ash ponds for both the unit were proposed within the project area and now PP is proposing new land for ash pond area of 135 acres which is outside of the plant boundary and seems to be located in submergence zone of Hirakud dam. The EAC was of the view that the proposed ash pond location is not suitable as the backwater of Hirakud dam may affect the ash pond. The EAC also observed that progress for green belt development is also not up to the mark.</p> <p>The EAC after detailed deliberations suggested the project proponent to submit the revised proposal mentioning information on following points:</p> <p>1. Revised layout restricting ash pond within the existing 240 Ha of land and provisions for maintaining 40%</p>
--

greenbelt.

2. Green plantation status along with survival rate and species shall be submitted and grating of EC shall be subject to implementation 40 % area of green belt area of total plant boundary.
3. PP shall prepare a chart of existing air, water and soil characteristics.
4. Arial view video of project site shall be recorded through drone and be submitted.
5. Detailed chronology of events along with orders passed in the PIL pending at High court Odisha shall be submitted.
6. The details of earlier ash pond location.
7. Submit proof of completion of 50% construction.
8. The details of other court cases, if any and their status/outcomes.
9. Transfer of existing EC from previous owner to present owner as the ownership has been changed.

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

### 3.5.5. Recommendation of EAC

Returned in present form

### 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	
13	Yogendra Pal Singh	Scientist E	yogendra78@nic.in	



**MINUTES OF THE 44<sup>TH</sup> MEETING OF THE RE-CONSTITUTED EXPERT APPRAISAL COMMITTEE (EAC) ON ENVIRONMENTAL IMPACT ASSESSMENT (EIA) OF THERMAL POWER PROJECTS HELD ON 20<sup>TH</sup> JULY, 2023**

The 44<sup>th</sup> 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 20<sup>th</sup> July, 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.44.1: Confirmation of the Minutes of the 43<sup>rd</sup> EAC meeting**

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

**Agenda Item No. 44.2**

**Expansion of Waste to Energy Plant from 24 MW to 60 MW in an area of 40.46 (existing) at Tehsil Narela, District North West, Delhi by M/s. Delhi MSW Solutions Ltd. (DMSWSL) - Environmental Clearance (EC) – reg.**

**[Proposal No. IA/DL/THE/430833/2023; F. No. J-13012/01/2022-IA.I (T)]**

**44.2.1** PP vide email dated 17.07.2023 informed that due to non-availability of Authorised person of the Proposal, they will not able to attend the meeting.

The proposal was *deferred* on the above lines.

**Agenda Item No. 44.3:**

**Expansion of Koderma Thermal Power Station (Koderma Phase-II) by installation of 2X800 MW plant in an area 763.96 Ha (existing) at Village - Benjhidi, Dist. - Koderma, Jharkhand by M/s Damodar Valley Corporation – Terms of References (ToR) - reg.**

**[Proposal No. IA/JH/THE/434435/2023; F. No. J-13011/2/2005-IA.II(T)]**

**44.3.1** The proposal is for grant of Terms of Reference to Expansion of Koderma Thermal Power Station (Koderma Phase-II) by installation of 2X800 MW plant in an area 763.96 Ha (existing) at Village - Benjhidi, Dist. - Koderma, Jharkhand by M/s Damodar Valley Corporation.

**44.3.2** The Project Proponent and the accredited Consultant M/s. ABC Techno Labs India Pvt. Ltd, made a detailed presentation on the salient features of the project and informed that:

- i. M/s Damodar Valley Corporation (DVC) is planning to expand its existing power plant at Village –Benjhidi, Dist- Koderma, Jharkhand – 825 421 on an area of 763.96 Ha. (1887.795Acres).

- ii. Koderma Thermal Power Station (KTPS) is located in Village – Benjhidi, Dist- Koderma, Jharkhand – 825421. The nearest town is Koderma which is located at a distance of 8.5 Km towards NE from the project site. Koderma Thermal Power Station (KTPS) is situated about 8.5 Km from Koderma city and 48 Km from Hazaribagh city. There is no national park existing within a 10 km radius of the plant. Koderma Wildlife Sanctuary is located about 8.3 Km towards Northern side of the project site.
- iii. The Ministry earlier accorded EC vide letter no. J-13011/2/2005-IA.II (T); dated 23.06.2005 to 2 X 500 MW Koderma Thermal Power Station at Koderma, Jharkhand by M/s Damodar Valley Corporation. M/s DVC has an existing Consent to Operate issued by Jharkhand State Pollution Control Board on 28<sup>th</sup> April 2023.
- iv. KTPS has total land area of 763.96 Ha. The existing plant facilities (Ph I) is located at an area of 104.99 Ha. The existing Ash pond area is 154.71 Ha and the area for greenbelt is 182.66 Ha. The existing project has a production capacity of 1000 MW (2X500 MW). The existing project has water supply from Tilaiya dam on river Barakar.
- v. Coal is the raw material used for production of 1000 MW of power. The APCM devices installed at site for Ph I are Bag filters, Electrostatic precipitators, NOx control, Flue Gas Desulphurisation System, & Dust Suppression and Extraction Systems.
- vi. The industrial effluent generated is treated in ETP installed at site. The domestic effluent is treated in the STP present at site. There is no discharge of wastewater outside the premises.
- vii. Land required for the proposed project is 763.96 Ha. (1887.795 Acres) which is in possession. There is no existence of displaced habitans in the identified land. Land is also devoid of any major vegetation. Local people will be engaged for construction activities and the local area has all the associated and supportive infrastructure facilities.
- viii. The silent features of the project are as under:-

Name of the Proposal	Proposed Expansion of Koderma Thermal Power Station (Koderma Ph-II) by installation of 2X800 MW plant at Village: Benjhidi, Dist- Koderma, Jharkhand – 825 421 by M/s. Damodar Valley Corporation
Location (Including coordinates)	Village: Benjhidi, Dist- Koderma, Jharkhand – 825 421 24°23'12.00"N 85°33'42.55"E
Inter- state issue involved	No
Seismic zone	III
Attracts the General Conditions (Yes/No)	No
Powerhouse Installed Capacity	2600 MW
Generation of Electricity Annually	1.2 million MW (CONSIDERING 85% PLF)
No. of Units	2
Cost of project	INR 1435774 crores
Total area of Project	763.96 Ha
Details of consultant and status of accreditation	ABC Techno Labs India Pvt. Ltd. Certificate no: NABET/EIA/1922/RA 0155 Accredited

Project Benefits	<p>Local people will get direct financial benefit by way of employment. Local people will get some contracts of supply and services to get indirect income. More revenue will be generated by the way of GST to the State &amp; Central exchequers. The project is technically feasible and financially viable. The overall financial liquidity and profitability parameters of the project appeared to be reasonable and satisfactory. M/s Damodar Valley Corporation (DVC) will implement various Corporate Environmental Responsibility (CER) activities within the vicinity of the project area. The proposed project will set up training center or tie up with Industrial Technical Institutes to educate local youth as skilled labour. Provide &amp; conduct the Free Eye &amp; Health Checkup Programmes.</p>																											
Status of other statutory clearances	Acquired																											
Certified	Will be obtained																											
EC compliance report (if applicable)																												
Status of Stage- I FC	Not Applicable																											
Fuel to be used:	Coal																											
Quantity of Fuel required per Annum:	23970 TPD																											
Coal Linkage / Coal Block:	Central Coalfield Limited																											
(If Block allotted, status of EC & FC of the Block)	Acquired																											
Details of mode of transportation of coal from coal source to the plant premises along with distances	Rail																											
Fly Ash Disposal System Proposed	Ash pond																											
Ash Pond/ Dyke (Area, Location & Co-ordinates)	382.31 Acres																											
Average height of area above MSL (m)	<table border="1"> <thead> <tr> <th rowspan="2">Point No.</th> <th>Hemisphere</th> <th colspan="2">Degree, Minute, Second</th> </tr> <tr> <th>(N or S)</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;"><b>KTPS Plot</b></td> </tr> <tr> <td>1</td> <td>N</td> <td>24°22'28.33"N</td> <td>85°33'54.53"E</td> </tr> <tr> <td>2</td> <td>N</td> <td>24°22'13.51"N</td> <td>85°34'24.17"E</td> </tr> <tr> <td>3</td> <td>N</td> <td>24°21'11.23"N</td> <td>85°34'1.57"E</td> </tr> <tr> <td>4</td> <td>N</td> <td>24°21'25.84"N</td> <td>85°33'24.11"E</td> </tr> </tbody> </table> <p>402 m</p>	Point No.	Hemisphere	Degree, Minute, Second		(N or S)	Latitude	Longitude	<b>KTPS Plot</b>				1	N	24°22'28.33"N	85°33'54.53"E	2	N	24°22'13.51"N	85°34'24.17"E	3	N	24°21'11.23"N	85°34'1.57"E	4	N	24°21'25.84"N	85°33'24.11"E
Point No.	Hemisphere		Degree, Minute, Second																									
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2	N	24°22'13.51"N	85°34'24.17"E																									
3	N	24°21'11.23"N	85°34'1.57"E																									
4	N	24°21'25.84"N	85°33'24.11"E																									

Quantity of Fly Ash to be generated	11000 TPD				
Bottom Ash to be generated:	2200 TPD				
Fly Ash utilization (details)	Road Construction Fly Ash brick Cement Plant				
Stack Height (m) & Type of Flue	275 m Double flue				
Land requirement: TPP site Ash Pond Township MGR etc. (if expansion state additional land requirement)	Sl. No	Details	Existing Area in Acres	Total after expansion Area in Acres	Area as % of Total
	1	Main Plant Facilities	259.46	461.14	24.43%
	2	Ash Pond	382.31	382.31	20.25%
	3	Raw water reservoir area	40.43	40.43	2.14%
	4	Road/ Pavement/ Railway Infrastructure	113.85	113.85	6.03%
	5	Total Green Belt (Main plant & Ash pond)	451.37	622.97	33.00%
	6	Open area	511.375	138.095	7.32%
	7	Colony Area	129	129	6.83%
	Total	1887.795	1887.795	100%	
Status of Land acquisition:	Acquired				
Fuel to be used:	Coal				
Quantity of Fuel Required per Annum:	23970 TPD				
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Quantity and details of Linkage available: Name of Block: Central Coalfield Limited				
Details of mode of transportation of coal from coal source to the plant premises along with distances.	Total distance from the source to Rail: 200 km				
Fly Ash Disposal System proposed:	Medium concentration slurry.				

Ash Pond / Dyke: (Area,  Location & Co- ordinates) Average height of area above MSL (m)	No additional area required for ash pond
Quantity of Fly Ash to be Generated:	11000 TPD
Quantity of Bottom Ash to be Generated:	2200 TPD
Fly Ash utilisation percentage with details:	Road Construction Fly Ash brick Cement Plant
Stack Height (m) & Type of Flue	275(m) (new) Bi Flue
Source of Water:	Tilaiya Dam over river Barakar (HFL – 4 km)
Quantity of water requirement:	115200 KLD
Distance of source of water from Plant:	4
Whether barrage/ weir/ intake well/ jack well/ others proposed:	No
Mode  of conveyance of water:	Pipeline
Status of water linkage:	Acquired 16.12.2022
Names & distance of National parks, Wildlife sanctuaries, Biosphere reserves, Heritage sites	Koderma WLS is about 8.3 Km towards Northern side of the project site.
Rivers, Tanks, Reserve Forests etc. Located within 10 Km from the plant boundary:	The Barakar river flows from west to east direction. It is about 5 Km (South) from project boundary.
Any litigation/Court case pertaining to the project:	No
Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendment:	Rs 1435774 (Crores)
Employment Potential for entire project/plant and employment potential for the proposed amendment (specify number of persons and quantitative information).	400 Direct 700 Indirect

#### 44.3.3 The EAC during deliberations noted the following:

The proposal is for grant of Terms of Reference to expansion of Koderma Thermal Power Station (Koderma Phase-II) by installation of 2X800 MW plant in an area 763.96 Ha (existing) at Village - Benjhidi, Dist. - Koderma, Jharkhand by M/s Damodar Valley Corporation.

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

The EAC noted that the Ministry granted EC vide letter no. J-13011/2/2005-IA II (T) dated 23.06.2005 to 2 X 500 MW Kodarma Thermal Power Station at Kodarma, Jharkhand by M/s Damodar Valley Corporation and Consent to Operate issued by Jharkhand State Pollution Control Board on 28<sup>th</sup> April 2023. Further noted that Koderma WLS is about 8.3 Km towards Northern side of the project site. The existing project has water supply from Tilaiya dam on river Barakar. The EAC noted that M/s KTPS has total land area of 763.96 Ha. The existing plant facilities (Ph I) is located at an area of 104.99 Ha. The existing Ash pond area is 154.71 Ha and the area for greenbelt is 182.66 Ha and no new ash pond has been proposed for proposed expansion of Thermal power plant.

The EAC also noted that there were certain representations received raising concerns about impact of project on Wildlife habitat/ corridor in the region.

**44.3.4** The EAC after detailed deliberation on the information submitted and as presented during the meeting *recommended* for grant of Standard ToR for conducting EIA study for Expansion of Koderma Thermal Power Station (Koderma Phase-II) by installation of 2X800 MW plant in an area 763.96 Ha (existing) at Village - Benjhidi, Dist. - Koderma, Jharkhand by M/s Damodar Valley Corporation, 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 in view of proximity of wildlife sanctuary.
- ii. PCCF letter shall be obtained stating that no projects component is falling in any protected area, Wildlife sanctuary, eco-sensitive area and wildlife corridor.
- iii. NBWL clearance is required as project is falling within 10 km radius of the Koderma Wildlife Sanctuary. Proof of submission of application for the same shall be submitted along with EIA/EMP report.
- iv. 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.

- v. 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.
- vi. 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.
- vii. A comparative chart shall be prepared with changes observed from previous baseline study and present baseline study
- 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.

#### **[B] Disaster Management**

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

#### **[C] Miscellaneous**

- xxii. 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.
- xxiii. 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.
  - xxiv. PP shall submit details of court cases and its status for the project (if any).
  - xxv. The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples.
  - xxvi. Arial view video of project site shall be recorded through drone and be submitted.
  - xxvii. 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.
  - xxviii. EAC shall visit the site before submission of EIA/EMP report by the PP to finalize environmental safeguards for (1) ash handling (2) coal handling (3) dry ash handling system.

#### **Agenda Item No. 44.4:**

**Expansion of Coal Based Thermal Power Plant from 1x350 MW to 2X350 MW at Village Sahajbahal, Tehsil Lakhanpur, District Jharsuguda, Odisha by M/s Ind-Barath Energy (Utkal) Ltd – Terms of References (ToR) - reg.**

**[Proposal No. IA/OR/THE/433320/2023; F. No. J-13012/31/2008-IA.II(T)]**

**44.4.1** The proposal is for grant of Terms of Reference to the project for expansion of Coal Based Thermal Power Plant from 1x350 MW to 2X350 MW at Village Sahajbahal, Tehsil Lakhanpur, District Jharsuguda, Odisha by M/s Ind-Barath Energy (Utkal) Ltd.

**44.4.2** The Project Proponent and the accredited Consultant M/s EQMS Global Pvt. Ltd, made a detailed presentation on the salient features of the project and informed that:

- i. The Environmental clearance was granted by MoEF&CC vide letter no. J-13012/31/2008-IA. II (T) dated 30<sup>th</sup> Nov, 2009 to install 2x350 MW Coal based thermal power plant at village Sahajbahal, PO Charpali- Barpali, Via: Bandhbahal, Tehsil: Lakhanpur, Jharsuguda, Odisha to M/s IBEUL; however, out of total 2x350 MW, power plant of capacity 1x350 MW was already commissioned in year 2016 and was operational as per CTO granted by OSPCB vide CTO no. 8024/IND-I-CON-6430 dated 09.06.2017 valid till 31.03.2018. Meanwhile, the unit became non-operational due to the financial crisis. CTO has been granted by OSPCB for Phase I (1x350 MW) vide letter no. 4856/IND-I-CON-6430 dated 28.03.2023. Environmental clearance expired on 31.12.2018.
- ii. Thereafter, the company (M/s Ind-Barath Energy (Utkal) Ltd) (IBEUL) admitted into corporate insolvency resolution process (“CIRP”) on 29<sup>th</sup> August 2018 (“Insolvency



Commencement Date”) on application made by its financial creditors. M/s Ind-Barath Energy (Utkal) Limited, now a subsidiary company of JSW Energy Ltd(JSWEL) operates as an energy company. JSW Energy Limited (“JSW”) JSW had acquired the power plant which was earlier under the ownership of IBEUL.

- iii. Further, for Unit-II (1x350 MW) more than 50% construction was completed in 2016. Due to financial issues the construction work of Unit -II was stopped.
- iv. The Chronology of events in the establishment of existing unit and subsequently obtaining the appropriate approvals is given as under:

S. No.	Type of Approval	F. No./ Order No.	Details
1.	MoU with Govt. of Odisha for establishment of 2X350 MW TPP	MoU dated. 7 Feb 2009	Applied for renewal and is under approval
2	Water allocation for the project from dept. of water resources, Odisha	WR-MAJII-WRC-0009/14 dated. 11/5/2017	It is applied for re-allocation and is under approval
3.	Environmental Clearance	F. No. J-13012/31/2008-IA.II (T) dated 30.11. 2009	2X350 MW Coal Based Thermal Power Plant
4.	Consent to Establish	Order No: 13374/Ind-II-NOC-5151 dated 13.08.2010	2X350 MW Coal Based Thermal Power Plant
5.	Extension of validity of Environment Clearance	File no: J-13012/31/2008-IA.II (T) dated 04.02.2015	2X350 MW Coal Based Thermal Power Plant
6.	Consent to Operate	Order No: 16909/IND-I-CON-6430 dated 29.10.2015 valid up to 31.03.2016.	For Unit - I 1 X 350 MW Coal based Thermal Power Plant
7.	Extension of validity of Environment Clearance	File no: J-13012/31/2008-IA.II (T) dated 09.03.2016	2X350 MW Coal Based Thermal Power Plant
8.	Renewal of Consent to operate	Order No:5872/IND-I-CON-6430 dated 30.03.2016 valid up to 31.03.2017.	For Unit - I 1 x 350 MW Coal based Thermal Power Plant
9.	Extension of validity of Environment Clearance	File no: J-13012/31/2008-IA.II (T) dated 03.03.2017	2x350 MW Coal Based Thermal Power Plant
10.	Consent to Establish	Order No: 4815/IND-II-NOC-5151dated 31.03.2017	2x350 MW Coal Based Thermal Power Plant

11.	Renewal of Consent to operate	Order No:8024/IND-I-CON-6430 dated 09.06.2017 valid up to 31.03.2018.	For Unit - I 1 x 350 MW Coal based Thermal Power Plant
12.	Extension of validity of Environment Clearance	File no: J-13012/31/2008-IA.II (T) dated 06.03.2018.	2x350 MW Coal Based Thermal Power Plant
13.	Resolution plan approval by the NCLT (National Company Law Tribunal)	IA.NO: 882 of 2019 dated 25.07.2022	-
14.	Consent to Operate	4856/IND-I-CON-6430 dated 28.03.2023. with validity up to 31 March 2024 and renewable for three years	For Unit - I 1 x 350 MW Coal based Thermal Power Plant

v. Current Status of Construction Work of Unit-II are as under:

Sl. No.	Items	Current status of construction work / % work completed
1	Rail Network system Construction work Status	90
2	Status of Boiler Installation work	70
3	Status of Turbine and generator Installation work	40
4	Status ESP and Dcting System	50
5	Status of Ash Handling System	40
6	Water treatment facility	90
7	Status of Coal Handling Plant	60
8	Water Compressor and Pump House	50
9	Stack (Twin flue)	100

- vi. Status of Litigation Pending against the proposal, if any: There is a PIL at High court Odisha filed in 2014 before acquisition of JSW Energy through NCLT.
- vii. The silent features of the project are as under: -

Name of the Proposal	Expansion of Coal Based Thermal Power Plant from 1x350 MW to 2X350 MW at Village Sahajbahal, Tehsil Lakhanpur, District Jharsuguda, Odisha by M/s Ind-Barath Energy (Utkal) Ltd
Location (Including coordinates)	Village Sahajbahal, Tehsil Lakhanpur, District Jharsuguda, Odisha Latitude: 21°39'39.02"N

	Longitude: 83°55'18.23"E
Inter- state issue involved	Not Applicable
Seismic zone	Zone – III (Moderate Risk Zone)
Capacity / Cultural command area (CCA)	Capacity of Plant: Unit -I (Phase-I): 1 x 350 MW Unit -II (Phase-II): 1 x 350 MW
Attracts the General Conditions (Yes/No)	No
Powerhouse Installed Capacity	Unit -I (Phase-I): 1 x 350. MW Unit -II (Phase-II): 1 x 350 MW
Generation of Electricity Annually	3066 MU (Million Unit) /1X350 MW unit = Total 6132 MU for 2X350 MW TPP.
No. of Units	2
Cost of project	3200 Crore
Total area of Project	240 Ha
Details of consultant and status of accreditation	M/s EQMS Global Pvt. Ltd. (NABET Accreditation Number: NABET/EIA/1922/RA0197 Valid Upto-02.08.2023)
Project Benefits	It will fulfill the demand supply gap of power. It will generate employment
Status of other statutory clearances	Not Applicable
R&R details	Not Applicable
Any litigation/Court case pertaining to the project	There is a PIL at High court Odisha filed in 2014 before acquisition of JSW Energy through NCLT.
Is the proposal under any investigation? If so, details thereof.	Not Applicable
Any violation case pertaining to the project:	Yes, Violation of Forest (Conservation) Act, 1980 during plant construction under previous Ind Barath Energy management. In response to Hight court direction dated 17 <sup>th</sup> may 2023, MoEF IRO has recommended for the regularisation for construction activities already done under violation as per the REC meeting held on 13 June 2023.
Certified EC compliance report (If applicable)	Shall be taken after grant of TOR.

Status of Stage- I FC	MoEF&CC IRO has recommended the forest land diversion proposal and regularisation for construction activities already done under violation and the proposal is under stage I approval.																																													
Additional detail (If any)	-																																													
Is FRA (2006) done for FC-I	Yes																																													
Fuel to be used:	Coal																																													
Quantity of Fuel required per Annum:	14700 TPD for 2X350 MW TPP, 7350 TPD for 1X350 MW																																													
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	Mahanadi Coal Field L Belpahar Coal Fields																																													
Details of mode of transportation of coal from coal source to the plant premises along with distances	Mode of transportation: Rail Distance from Source: 14 km from mines Source of coal: Mahanadi Coal Field L Belpahar coal fields																																													
Fly Ash Disposal System Proposed	It shall be sent to the Cement Manufacturer. Ash shall be disposed off through HCSD in emergency ash pond during emergency.																																													
Ash Pond/ Dyke (Area, Location & Co-ordinates) Average height of area above MSL (m)	<p>Details of Ash Pond:</p> <table border="1"> <thead> <tr> <th colspan="3"><b>Phase I</b></th> </tr> </thead> <tbody> <tr> <td><b>Coal consumption/hr</b></td> <td><b>300</b></td> <td><b>Tonnes</b></td> </tr> <tr> <td><b>Total running hr</b></td> <td>24</td> <td>hr</td> </tr> <tr> <td><b>Total coal/day</b></td> <td>7200</td> <td>tonnes</td> </tr> <tr> <td><b>Total ash/day/unit</b></td> <td>3168</td> <td>tonnes</td> </tr> <tr> <td><b>ash/unit/PLF-80%</b></td> <td>2534.4</td> <td>Tonnes</td> </tr> <tr> <th colspan="3"><b>Land 20 acre (Within Plant)</b></th> </tr> <tr> <td><b>Ash pond area</b></td> <td>20</td> <td>acre</td> </tr> <tr> <td><b>Ash pond area</b></td> <td>80937.1</td> <td>m<sup>2</sup></td> </tr> <tr> <td><b>Depth</b></td> <td>10</td> <td>m</td> </tr> <tr> <td><b>Volume</b></td> <td>809371</td> <td>m<sup>3</sup></td> </tr> <tr> <td><b>Density</b></td> <td>1.2</td> <td>Tonnes/m<sup>3</sup></td> </tr> <tr> <td><b>Capacity</b></td> <td>971245</td> <td>Tonnes</td> </tr> <tr> <td><b>Ash dumping/day</b></td> <td>2500</td> <td>tonnes</td> </tr> <tr> <td><b>Ash dumping /year</b></td> <td>912500</td> <td>tonnes</td> </tr> </tbody> </table>	<b>Phase I</b>			<b>Coal consumption/hr</b>	<b>300</b>	<b>Tonnes</b>	<b>Total running hr</b>	24	hr	<b>Total coal/day</b>	7200	tonnes	<b>Total ash/day/unit</b>	3168	tonnes	<b>ash/unit/PLF-80%</b>	2534.4	Tonnes	<b>Land 20 acre (Within Plant)</b>			<b>Ash pond area</b>	20	acre	<b>Ash pond area</b>	80937.1	m <sup>2</sup>	<b>Depth</b>	10	m	<b>Volume</b>	809371	m <sup>3</sup>	<b>Density</b>	1.2	Tonnes/m <sup>3</sup>	<b>Capacity</b>	971245	Tonnes	<b>Ash dumping/day</b>	2500	tonnes	<b>Ash dumping /year</b>	912500	tonnes
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	<b>Ash dumping @ 100 % for 1 unit</b>	1.06	Year
	<b>Ash dumping @ 50 % for 1 unit</b>	2.12	Year
Co-ordinate: <b>21°39'18.8" N, 83°55'08.8" E</b>			
Average height of area above MSL (m): 214			
<b>Phase II</b>			
<b>Coal consumption/hr</b>	<b>300</b>	<b>Tonnes</b>	
<b>Total running hr</b>	24	hr	
<b>Total coal/day</b>	7200	tonnes	
<b>Total ash/day/unit</b>	3168	tonnes	
<b>ash/unit/PLF-80%</b>	2534.4	Tonnes	
<b>Land 135 acre (Outside Plant)</b>			
<b>Ash pond area</b>	135	acre	
<b>Ash pond area</b>	546326	m <sup>2</sup>	
<b>Depth</b>	15	m	
<b>Volume</b>	8194890	m <sup>3</sup>	
<b>Density</b>	1.2	Tonnes/m <sup>3</sup>	
<b>Ash dyke capacity</b>	9833868	Tonnes	
<b>Ash Dumping /day /unit</b>	2500	tonnes	
<b>Ash dumping /year/unit</b>	912500	tonnes	
<b>Ash dumping /year/2 unit</b>	1825000	tonnes	
<b>Ash dumping @ 100 % for 2 units</b>	5.38	Year	
<b>Ash dumping @ 50 % for 2 units</b>	10.77	Year	
Co-ordinate: <b>21°40'24.357" N, 83°56'36.1662" E</b>			
Average height of area above MSL (m): 206 amsl			
Quantity of a. Fly Ash to be generated. b. Bottom Ash to be generated:	Quantity of a. Fly Ash to be generated: 5290 MTPA. For 2X350 MW TPP		

	b. Bottom Ash to be generated: 1324 MTPA
Fly Ash utilization (details)	It shall be sent to Cement Manufacturer and disposed off. in ash pond through HCSD during emergency
Stack Height (m) & Type of Flue	Stack Height: 275 m Type of Flue: Concrete outer shell and steel flue inside

#### 44.4.3 The EAC during deliberations noted the following:

The proposal is for grant of Terms of Reference to Expansion of Expansion of Coal Based Thermal Power Plant from 1x350 MW to 2X350 MW at Village Sahajbahal, Tehsil Lakhanpur, District Jharsuguda, Odisha by M/s Ind-Barath Energy (Utkal) Ltd.

The EAC noted that the Environmental clearance was granted by MoEF&CC vide letter F.No. J-13012/31/2008-IA. II (T) dated 30<sup>th</sup> Nov, 2009 and out of total capacity of 2x350 only 1x350 MW (Unit-I) was commissioned in year 2016. Further, the Unit- I became non-operational due to the financial crisis and Environmental clearance was expired on 31.12.2018. Total 20% of green belt has been developed till date in the plant boundary.

The EAC noted that project is located at severally polluted area as notified by CPCB. As informed by the PP that for Unit-II (1x350 MW) more than 50% construction was completed in 2016. Due to financial issues the construction work of Unit -II was stopped. It was also noted that a PIL is pending at High court Odisha filed in 2014 regarding violation of Forest conservation Act, 1980 before acquisition of JSW Energy through NCLT.

The EAC also noted that earlier ash ponds for both the unit were proposed within the project area and now PP is proposing new land for ash pond area of 135 acres which is outside of the plant boundary and seems to be located in submergence zone of Hirakud dam. The EAC was of the view that the proposed ash pond location is not suitable as the backwater of Hirakud dam may affect the ash pond. The EAC also observed that progress for green belt development is also not up to the mark.

The EAC after detailed deliberations suggested the project proponent to submit the revised proposal mentioning information on following points:

- i. Revised layout restricting ash pond within the existing 240 Ha of land and provisions for maintaining 40% greenbelt.
- ii. Green plantation status along with survival rate and species shall be submitted and grating of EC shall be subject to implementation 40 % area of green belt area of total plant boundary.
- iii. PP shall prepare a chart of existing air, water and soil characteristics.
- iv. Arial view video of project site shall be recorded through drone and be submitted.
- v. Detailed chronology of events along with orders passed in the PIL pending at High court Odisha shall be submitted.
- vi. The details of earlier ash pond location.
- vii. Submit proof of completion of 50% construction.

- viii. The details of other court cases, if any and their status/outcomes.
- ix. Transfer of existing EC from previous owner to present owner as the ownership has been changed.
- x. The proposal was *returned* on the above lines.

**Agenda Item No. 44.5:**

**Expansion of Raipur Thermal Power Plant by adding 1600 (2x800) MW Ultra Super-Critical to existing 1370 (2x685) MW in an area of 885 Acres in CSIDC Industrial Area, at Village Raikheda, Gaitara & Chicholi, Tilda Block, Raipur District, Chhattisgarh by M/s Adani Power Limited – Terms of References (ToR) - reg.**

**[Proposal No. IA/CG/THE/435583/2023; F. No. J-13012/62/2008-IA. II(T)]**

**44.5.1** The proposal is for grant of terms of reference to the project for Expansion of Raipur Thermal Power Plant by adding 1600 (2x800) MW Ultra Super-Critical to existing 1370 (2x685) MW in an area of 885 Acres in CSIDC Industrial Area, at Village Raikheda, Gaitara & Chicholi, Tilda Block, Raipur District, Chhattisgarh by M/s Adani Power Limited.

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

- i. M/s Adani Power Limited (APL), Raipur (Formerly Known as Raipur Energen Ltd. - REL) is a company primarily engaged in the business of power generation and owns and operates a 1370 (2x685) MW Coal based Thermal Power Plant situated at Raipur Dist. in Chhattisgarh.
- ii. Earlier, REL was known as GMR Chhattisgarh Energy Limited (GCEL) and earlier belonged to GMR Group. GCEL got into financial stress and was unable to service its debt obligations, so the lead bank Axis Bank initiated a competitive bidding process. Adani Power Limited (APL) selected as successful bidder and LOI issued to APL on 24.06.2019. APL acquired control over GCEL w.e.f. 2nd August 2019 on fulfilment of conditions precedent as per SPAs and renamed it as 'Raipur Energen Limited'.
- iii. Further, Raipur Energen Limited has implemented approved Board Resolution to consider the matter for Amalgamation of the Company with Adani Power Limited as per Scheme of Amalgamation by NCLT.
- iv. The Project is proposed to be developed as an expansion by adding 1600 (2x800) MW to the existing 1370 (2x685) MW units and all the necessary infrastructure to cater the requirement of the enhanced capacity will be developed within the existing plant boundary while also using the facilities of the existing plant.
- v. The plot is located at 21° 27' 42.16" to 21° 26' 26.03" N latitude and 81° 51' 48.45" to 81° 50' 48.09" E longitude.
- vi. The MoEF&CC granted Environmental Clearance for Super Critical Coal Based Thermal Power Plant of capacity 1370 (2X685) MW in CSIDC Industrial Area, at Villages Raikheda, Gaitara and Chicholi, Tilda Block, Raipur District, Chhattisgarh vide letter no J-13012/62/2008-IA. II(T) dated: 09.05.2011 and its subsequent amendments dated

- 13.06.2013, 18.11.2014, 04.02.2015, 09.12.2015, & EC transferred dated; 05.11.2019 (GCEL to REL) & 24.04.2023 (REL to APL).
- vii. CECB has granted Consent to Operate (CTO) with with validity up to 31.03.2025. Unit- 1 of the power station achieved COD in June'2015 and Unit -2 of the power station in April'2016.
- viii. Latest Six-Monthly EC compliance report for the period October'2022 to March'2023 is submitted to MoEF&CC and CECB vide letter no. PL/REL/EMD/MoEFCC/EC/208/05/23 dated; 23.05.2023. IRO Raipur, MoEF&CC has submitted compliance status report vide file no. 4- 11/2013(ENV)/485 & 779 dated: 19.01.2022 & 21.06.2022. MoEF&CC has Certified EC Compliance vide file no. IA-J-11014/15/2022-IA-I dated: 16th March'2023.
- ix. Subsequently, Consent to Establish (CTE) was issued on dated; 25.07.2011 and Consent to Operate (CTO) was issued with validity up to 31.03.2025 from Chhattisgarh Environment Conservation Board (CECB), Raipur, Chhattisgarh. The project was commissioned in April'2016 and plant/units are operational.
- x. Adani Power Limited, Raipur has proposed to set up an Ultra Super-Critical Thermal Power Project with configuration of two units of 800 MW each deploying the state-of-the-art technology in the field, to have an installed capacity of 1600 MW. The proposed project is envisaged as an expansion of the existing 2x685 MW capacity within the existing plant boundary.
- xi. The silent features of the project are as under: -

Name of the Proposal	Proposed Expansion of Raipur Thermal Power Plant by adding 1600 (2x 800) MW Ultra Super-Critical to existing 1370 (2x685) MW in CSIDC Industrial Area, at Village Raikheda, Gaitara & Chicholi, Tilda Block, Raipur District, Chhattisgarh		
Location (Including coordinates)	<b>Pillar No.</b>	<b>Latitude (N)</b>	<b>Longitude (E)</b>
	A	21°27'45.95"	81°51'51.75"
	B	21°27'44.66"	81°51'53.50"
	C	21°27'41.06"	81°51'52.30"
	D	21°27'39.70"	81°51'50.02"
	E	21°27'38.71"	81°51'51.33"
	F	21°27'38.13"	81°51'57.13"
	G	21°27'35.78"	81°51'57.19"
	H	21°27'35.77"	81°51'52.84"
	I	21°27'33.63"	81°51'50.33"
	J	21°27'33.15"	81°51'50.13"
	K	21°27'23.74"	81°51'41.60"
	L	21°27'26.11"	81°51'18.09"
M	21°27'2.25"	81°51'19.53"	



	N	21°27'13.03"	81°51'30.62"
	O	21°27'16.88"	81°52'5.35"
	P	21°27'6.33"	81°52'10.82"
	Q	21°26'23.19"	81°51'32.62"
	R	21°26'42.34"	81°51'22.09"
	S	21°26'25.57"	81°50'48.18"
	T	21°27'7.96"	81°50'49.46"
	U	21°27'27.40"	81°50'36.72"
	V	21°27'14.65"	81°51'6.40"
	W	21°27'36.98"	81°50'58.78"
	X	21°27'37.44"	81°51'17.76"
	Y	21°27'38.33"	81°51'37.57"
	Z	21°27'43.34"	81°51'44.74"
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	4 no. of Units (Existing: 2 no. & Proposed: 2 no.)		
Cost of project	Project Cost: <ul style="list-style-type: none"> <li>Existing EC: 8290.0 Crore</li> <li>Proposed Expansion (2x800) MW is <b>13,600 Crore</b></li> </ul>		
Total area of Project	It is an expansion project, proposed within the existing plant boundary. <ul style="list-style-type: none"> <li>The land is already in possession with APL, Raipur TPP. The total area of the project site 358.15 Ha. (885 Acres) including the existing facility.</li> </ul>		

Details of consultant and status of accreditation	<p><b>Accredited Consultant:</b> Paramarsh Servicing Environment and Development</p> <p><b>Accreditation Certificate No.:</b> NABET/EIA/ 2124/RA 0224 (Valid till: 01/05/2024)</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"> <li>• Infrastructure development.</li> <li>• Direct &amp; indirect employment opportunity</li> <li>• Revenue generation to central &amp; state government.</li> <li>• Trickle-down effect of enhance profitability to the local populace</li> <li>• Skill development and capacity building like vocational training, income generation programmes and entrepreneurship development program</li> <li>• Awareness programme and community activities, like health camps, medical aides, family welfare camps, sanitization/ cleanliness awareness programme, immunization camp, sports &amp; cultural activities, plantation, etc.</li> <li>• Awareness about water borne diseases and pandemic diseases etc. will be done to local villagers.</li> </ul> <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 Super Critical Coal Based Thermal Power Plant of capacity 1370 (2X685) MW in CSIDC Industrial Area, at Villages Raikheda, Gaitara and Chicholi, Tilda Block, Raipur District, Chhattisgarh from Ministry of Environment, Forest &amp; Climate Change (MoEF&amp;CC) vide letter no J-13012/62/2008-IA. II(T) dated: 09.05.2011 and its subsequent amendments dated 13.06.2013, 18.11.2014, 04.02.2015, 09.12.2015, &amp; EC transferred dated; 05.11.2019 (GCEL to REL) &amp; 24.04.2023 (REL to APL).</p> <p>Subsequently, Consent to Establish (CTE) was issued on dated; 25.07.2011 and Consent to Operate (CTO) was issued with validity up to 31.03.2025 from Chhattisgarh Environment Conservation Board (CECB), Raipur, Chhattisgarh. The project was commissioned in April'2016 and plant/units are operational.</p>
R&R details	Not Applicable

Any litigation/Court case pertaining to the project	There are no litigation/Court cases pertaining to proposed project except few cases as regulatory & non-regulatory on utilities like Transmission, Rail, Mines etc.
Certified EC compliance report (if applicable)	IRO Raipur, MoEF&CC has submitted compliance status report vide file no. 4-11/2013(ENV)/485 & 779 dated: 19.01.2022 & 21.06.2022. MoEFCC has Certified EC Compliance vide file no. IA-J-11014/15/2022-IA-I dated: 16 <sup>th</sup> March'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.
<b>Is FRA (2006) done for FC-I</b>	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 7.89 MTPA, considering Design coal GCV as 3200 kcal/kg. Auxiliary liquid fuels, viz. LDO/HSD requirement per annum: 2500 kilo litres.
Coal Linkage / Coal Block: (If Block allotted, status of EC & FC of the Block)	MOU from nearby commercial coal mines. SEL-South Eastern Coal field limited, Raigarh Area MCL- Mahandi Coal field Limited, Korba
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: 300 – 400 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 filling, 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: 150 Acres <table border="1"> <thead> <tr> <th>Pillar No.</th> <th>Latitude (N)</th> <th>Longitude (E)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>21°27'9.46"</td> <td>81°51'55.40"</td> </tr> <tr> <td>2</td> <td>21°27'2.20"</td> <td>81°51'41.08"</td> </tr> <tr> <td>3</td> <td>21°26'49.00"</td> <td>81°51'35.26"</td> </tr> <tr> <td>4</td> <td>21°26'29.00"</td> <td>81°51'39.00"</td> </tr> </tbody> </table> Average height of area: 312 m above MSL	Pillar No.	Latitude (N)	Longitude (E)	1	21°27'9.46"	81°51'55.40"	2	21°27'2.20"	81°51'41.08"	3	21°26'49.00"	81°51'35.26"	4	21°26'29.00"	81°51'39.00"
Pillar No.	Latitude (N)	Longitude (E)														
1	21°27'9.46"	81°51'55.40"														
2	21°27'2.20"	81°51'41.08"														
3	21°26'49.00"	81°51'35.26"														
4	21°26'29.00"	81°51'39.00"														
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 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.															

<b>Name of Project</b>	Expansion / Green Field (new): (IPP / Merchant / Captive):	Expansion (IPP)			
Proposed Expansion of Raipur Thermal Power Plant by adding 1600 (2x 800) MW Ultra	If expansion, the details of ECs (including amendments	<b>S. No.</b>	<b>Description of Environmental Clearance</b>	<b>Date</b>	<b>Letter No</b>

<p>Super-Critical to existing 1370 (2x685) MW in CSIDC Industrial Area, at Village Raikheda, Gaitara &amp; Chicholi, Tilda Block, Raipur District, Chhattisgarh</p>	<p>and extension of validity) of existing Units etc.</p>	1.	Environmental Clearance for 2x685 MW Super Critical Imported Coal Based Thermal Power Plant at villages Raikheda, Gaitara and Chicholi, in Tilda Block, in Raipur District, in Chhattisgarh	09.05.2011	<p>J-13012/62/2008-IA.II (T)</p>
		2.	Amendment in Environmental Clearance	13.06.2013	
		3.	Amendment in Environmental Clearance w.r.t temporary permission for road transportation of coal	18.11.2014	
		4.	Amendment in Environmental Clearance regarding Change in Source of Coal	04.02.2015	
		5.	Amendment in Environmental Clearance regarding Change in Source of Coal	09.12.2015	
		6.	Environmental Clearance Transfer from M/s. GMR Chhattisgarh Energy Limited to Raipur	05.11.2019	

			Energen Limited (REL)		
		7.	Environmental Clearance Transfer from REL to Adani Power Limited (APL).	24.04.2023	
	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&amp;CC and CECB vide letter no. APL/REL/EMD/MoEFCC/EC/208/05/23 dated; 23.05.2023.</p> <p>IRO Raipur, MoEF&amp;CC has submitted compliance status report vide file no. 4-11/2013(ENV)/485 &amp; 779 dated: 19.01.2022 &amp; 21.06.2022.</p> <p>MoEFCC has Certified EC Compliance vide file no. IA-J-11014/15/2022-IA-I dated: 16<sup>th</sup> March'2023.</p>			
Whether the project is in the Critically Polluted Area(CPA) or within 10 km of CPA. If so, the details	No				

thereof:				
Capacity & Unit Configurations:	<b>Electricity Generation capacity:</b> 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)	<b>Land requirement (In acres)</b>	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
	BTG (including FGD (Ph II), Switchyard, Transformer yard etc.	35	50	85
	Coal & Ash Facility (Including Stock yard & AHP facility)	58	25	83
	Water System (Including raw water reservoir, Cooling Tower, CW Pump house, DM Water System, Clarified, Industrial Wastewater Treatment facility)	20	20	40
	Raw water reservoir	65	60	125
	Green Belt	353		353
	Ash dyke	150	0	150
	Misc. Facility (Including Plant Road/boundary road, Misc. Building etc. vacant space)	34	15	49
	<b>Total</b>	<b>885</b>		<b>885</b>
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: If under construction phase: please specify the reasons for delay, works completed till date and balance works along with expected date of Completion. If under operation phase, date of commissioning(COD) of each unit.	The existing plant is in operation. The Unit- 1 (685MW) of the power station achieved COD in June 2015 and Unit -2 (685MW) of the power station achieved COD in April 2016.			

Whether the plant was Under shutdown since commissioning, details and reasons.	
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 land is already in possession with APL, Raipur TPP. The total area of the project site 358.15 Ha. (885 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 7.89 MTPA, considering Design coal GCV as 3200 kcal/kg. Auxiliary liquid fuels, viz. LDO/HSD requirement per annum: 2500 kilo litres.
Coal Linkage / Coal Block: ( <i>If Block allotted, status of EC &amp; FC of the Block</i> )	Quantity and details of Linkage: MOU from nearby commercial coal mines. SEL-South Eastern Coal field limited, Raigarh Area MCL- Mahandi Coal field Limited, Korba Available: 7.89 MTPA Name of Block: MOU from nearby commercial coal mines. 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: 3200 Kcal/Kg
Details of mode of transportation of coal from coal source to the plant premises along with distances.	Coal receipt at Plant shall be through Rail. Distance: 300km
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



	<p>in cement industries, abandoned mine filling, 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.</p>		
<p>Ash Pond / Dyke: (Area, Location &amp; Coordinates) Average height of area above MSL (m)</p>	Area	150 acres	
		Latitude	Longitude
	Fly ash Pond	21°26'36.24"N	81°51'38.21"E
	Bottom ash pond 1	21°26'46.08"N	81°51'42.17"E
	Bottom ash pond 2	21°26'59.21"N	81°51'43.47"E
	Average height	312m	
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 Samoda Dam at Mahanadi River approx. at 35 km from Plant Site.		
Quantity of water requirement:	4000m <sup>3</sup> /hr or 36 MCM/year		
Distance of source of water from Plant:	35 km		
Whether barrage/ weir/ intake well/ jack well/ others proposed:	No		
Mode of conveyance of water:	Existing Pipelines		

Status of water linkage:	WRD permission for the existing water demand of 25 MCM is obtained and the WRD permission for the water demand of proposed expansion will be obtained				
Cooling system	Closed recirculating condenser cooling system with Natural Draft Cooling Tower (NDCT)				
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:				
	<b>Water course/R.F./P.F.</b>	<b>Distance (km) w.r.t. plant site</b>	<b>Direction</b>		
	Jamuniya Nala	0.25	NNW		
	Jamuniya Nadi	2.00	N		
	Bhatapara Brance Distributory	2.15	WSW		
	Pindrao Tank	2.75	SE		
	Kumhari Tank	4.30	NE		
	Khauna Minor	4.35	WSW		
	Kirna Tank	5.00	WNW		
	Sillari Distributory	5.45	WSW		
	Dhumma Nala	7.00	WNW		
	Patthra Nala	7.10	SW		
	Banjari Nala	8.00	NNE		
	Pikndih Minor	8.20	S		
	Baloda Branch	9.90	ESE		
Mahanadi Mani Canal	10.20	SE			
Mohrenga P.F	adjacent	East			
Khaulidabri P.F	2.9	ESE			
Any litigation/Court case pertaining to the project:	There are no litigation/Court cases pertaining to proposed project except few cases as regulatory & non-regulatory on utilities like Transmission, Rail, Mines etc.				
Cost of the Project (As per EC and revised): Cost of the proposed activity in the amendment:	Project Cost as per EC (dated 19.05.2011): 8290.0 Crore Actual cost of present configuration: 8290.0 Crore Project Cost of expansion: 13,600 Crore				
Employment Potential for entire project/plant and employment potential for the	<b>Particular</b>	<b>Phase</b>	<b>Existing (Nos.)</b>	<b>Proposed (Nos.)</b>	<b>Total</b>
	Manpower	Construction Phase	Permanent: 0	Permanent: 276	Permanent: 276

proposed amendment (specify number of persons and quantitative information).		Contract: 0	Contract: 1200	Contract: 1200
	Operation Phase	Permanent: 238	Permanent: 276	Permanent: 514
		Contract: 250	Contract: 250	Contract: 500
	<b>Total</b>	<b>488</b>	<b>2002</b>	<b>2490</b>

#### 44.5.3 The EAC during deliberations noted the following:

The proposal is for grant of Terms of Reference to the project for Expansion of Raipur Thermal Power Plant by adding 1600 (2x800) MW Ultra Super-Critical to existing 1370 (2x685) MW in an area of 885 Acres in CSIDC Industrial Area, at Village Raikheda, Gaitara & Chicholi, Tilda Block, Raipur District, 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 MoEF&CC granted Environmental Clearance for Super Critical Coal Based Thermal Power Plant of capacity 1370 (2X685) MW in CSIDC Industrial Area, at Villages Raikheda, Gaitara and Chicholi, Tilda Block, Raipur District, Chhattisgarh vide letter no J-13012/62/2008-IA. II(T) dated: 09.05.2011 and its subsequent amendments dated 13.06.2013, 18.11.2014, 04.02.2015, 09.12.2015, & EC transferred dated; 05.11.2019 (GCEL to REL) & 24.04.2023 (REL to APL).

As informed by the PP the EAC also noted that PP has achieved 100% ash utilization and total land Area of about 885 Acres has been identified for the Project which includes the existing 2x685 MW Units and land area for accommodation of coal stockyard, water reservoir, roads, township & green belt etc.

The existing Ash pond area is 150 Acres. PP committed that no new ash pond will be constructed and will use existing ash dyke for the proposed expansion. Further, no new transportation shall be constructed for the proposed expansion of Thermal power plant. It was also noted that there are two water bodies are available just adjacent to the plant boundary of which water used by the local people for portable purposes.

The EAC also noted that there were certain representations received raising concerns about impact of project on Wildlife habitat/ corridor in the region.

**44.5.4** 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 Raipur Thermal Power Plant by adding 1600 (2x800) MW Ultra Super-Critical to existing 1370 (2x685) MW in an area of 885 Acres in CSIDC Industrial Area, at Village Raikheda, Gaitara & Chicholi, Tilda Block, Raipur District, 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 in view of proximity of wildlife sanctuary.
- ii. PCCF letter shall be obtained stating that no projects component is falling in any protected area, Wildlife sanctuary, eco-sensitive area and wildlife corridor.
- 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. Action plan for continuous analysis of surface water quality in and around 1km from the plant boundary.
- v. 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.
- vi. 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.
- vii. A comparative chart shall be prepared with changes observed from previous baseline study and present baseline study.
- 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.

#### **[B] Disaster Management**

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

#### **[C] Miscellaneous**

- xxii. 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.
- xxiii. Certified compliance report of previous EC to be submitted certified by Regional office of the MoEF&CC. IRO shall also provide specific observations on the status of OCMS and emission control equipment of all units of the plant.
- xxiv. PP shall submit details of court cases and its status for the project (if any).
- xxv. The PP should submit the photograph of monitoring stations & sampling locations. The photograph should bear the date, time, latitude & longitude of the monitoring station/sampling location. In addition to this PP should submit the original test reports and certificates of the labs which will analyze the samples.
- xxvi. Aerial view video of project site shall be recorded through drone and be submitted.
- xxvii. Undertaking from the pro that 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. 44.6:**

**2x250 MW Unit 10 & 11 Satpura Thermal Power Station in an area of 57.86 ha at Sarni, District Betul, Madhya Pradesh by M/s Madhya Pradesh Power Generating Co. Limited-Amendment in Environmental Clearance (EC) – reg.**

**[Proposal No. IA/MP/THE/434801/2023; F. No. J-13011/34/2008-IA. II(T)]**

**44.6.1** The proposal is for grant of amendment in Environment Clearance for 2x250 MW Unit 10 & 11 Satpura Thermal Power Station in an area of 57.86 ha at Sarni, District Betul, Madhya Pradesh by M/s Madhya Pradesh Power Generating Co. Limited.

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

- i. The MoEF&CC granted Environmental Clearance granted vide letter dated 27.02.2009 for installation of 2x250 MW Thermal Power Plant at Satpura Thermal Power Station (STPS), Sarni – Extension Units 10 & 11 located at Sarni, Madhya Pradesh in favor of M/s Madhya Pradesh Power Generating Co. Limited (MPPGCL).
- ii. Permission granted by the Ministry vide letter dated 27.03.2015 for new Ash Pond of 111 ha for Satpura Thermal Power Station (STPS), Sarni Distt.-Betul h by M/s Madhya Pradesh Power Generating Co. Limited (MPPGCL).
- iii. The project proponent has requested for amendment in the EC with the details are as under: -

SN	Para of EC issued by MoEF&CC	Details as per the EC	To be revised/ read as	Justification/ reasons
1	Condition no.3/(xvi) of EC no. J- 13011/34/2008 -IA.II(T) dtd.27.02.2009 for 2x250 MW unit, at STPS, Sarni i.e. Sulphur content in liquid fuels will not exceed 0.5%.	Storage facilities for auxiliary liquid fuel such as LDO and/ HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modifications required, if any shall be incorporated	Storage facilities for auxillary liquid fuel such as LDO and/ HFO/LSHS shall be made in the plant area where risk is minimum to the storage facilities. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place. Mock drills shall be conducted regularly and based on the same, modifications required, if any shall be incorporated in the DMP. Project proponent shall undertake resource depletion of HFO and no further purchase shall be made of HFO. PP shall use LDO as liquid fuel and Sulphur content shall not exceed 1.5%.	Reason for the amendment is elaborated here under: <ul style="list-style-type: none"> <li>• Use of Light Diesel oil (LDO) as start-up fuel and HFO as support fuel at low loads and for furnace stabilization, are conceived for 2x250 MW unit no. 10 &amp; 11 of Satpura Thermal Power Station, MPPGCL, Sarni.</li> <li>• MPPGCL has decided to discontinue the use of HFO in these units and only resource stock available of HFO would be utilized and no further purchase shall be made for HFO.</li> <li>• Very less quantity of oil is required for these units. Specific oil consumption in these units have been very less in comparison to MPERC norms 0.5 ml/KWh.</li> </ul>

		<p>in the DMP. Sulphur content in the liquid fuel will not exceed 0.5%.</p>		<p>FY2020-21: 0.21 ml/KWh  FY2021-22: 0.21 ml/KWh  FY2022-23: 0.14 ml/KWh</p> <ul style="list-style-type: none"> <li>LDO and HFO are being procured from reputed PSU's Oil Companies namely M/s IOCL, M/s BPCL and M/s HPCL. The Quality specifications of LDO confirms to the IS 15770:2008 standard which stipulates maximum total Sulphur percent by mass 1.5, while HFO confirms to IS 1593:1982, with maximum Sulphur content in furnace oil in order of 4.0 (by mass %).</li> <li>The PSU's Oil Companies namely HPCL, BPCL and IOCL were requested to provide details of low Sulphur oil (less than 0.5%) being supplied in the state of Madhya Pradesh. Oil Companies informed that due to no demand, they are not supplying Low Sulphur Oil (less than 0.5%) at any TPS of NTPC or other state utilities in Madhya Pradesh.</li> </ul> <p>In view of above, partial amendment of the EC condition in terms of</p>
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				Sulfur content is requested with permission for resource depletion of available HFO and to continue LDO in operation with maximum Sulphur content 1.5%.
2	Condition no.3/(v) of Permission issued vide no. J-13012/5/2013-IA.II(T) dtd. 27.03.2015 for 111 Ha Ash pond regarding mechanism for an in-built continuous monitoring of radio activity and heavy metals in coal and fly ash (including bottom ash).	A long term study of radio activity and heavy metals contents on coal to be used shall be carried out through a reputed institute and results thereof analyzed shall be reported every two year in the monitoring reports. Thereafter mechanism for an in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash) shall be put in place.	The term "in-built continuous" in said stipulation may kindly be amended with "regular periodical monitoring"	<ul style="list-style-type: none"> <li>• Radioactivity and heavy metal contents in coal, bottom ash and fly ash are being analysed through 3rd party NABL accredited laboratories.</li> <li>• MPPGCL humbly requests to allow carry out the analysis <b>on Quarterly Basis</b> for Radioactivity and heavy metal contents in coal, bottom ash and fly ash; instead of establishing in-built continuous monitoring.</li> </ul> <p>The condition for establishing in-built continuous monitoring for radio activity and heavy metals in coal and fly ash (including bottom ash); may please be exempted.</p>

**44.6.3** The EAC after detailed deliberations on information submitted by the project proponent **recommended** the proposal for amendment in EC condition as requested by the PP, under the provisions of EIA Notification, 2006 and as amended subject to compliance of following additional conditions:

- i. 24x7 online Continuous monitoring system for ambient air quality parameters SO<sub>x</sub>, NO<sub>x</sub> and PM shall be established with connected server to CPCB and SPCB.



- ii. Other conditions of the EC letter dated 27.02.2009 and amendment letter dated 27.03.2015 shall remain unchanged.

**The meeting ended with vote of thanks to the Chair.**

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**ATTENDANCE**

<b>S. No.</b>	<b>Name</b>	<b>Role</b>	<b>Attendance</b>
1.	Shri Gururaj P. Kundargi	Chairman	P
2.	Dr. N.P Shukla	Member	P
3.	Shri SuramyaVora	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.	Prof S. S. Rai	Member Representative of IIT/ISMDhanbad	P
11.	Shri Yogendra Pal Singh	Member Secretary	P

## APPROVAL OF THE CHAIRMAN

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**From:** [gpkundargi@gmail.com](mailto:gpkundargi@gmail.com)  
**To:** "Yogendra Pal Singh" <[yogendra78@nic.in](mailto:yogendra78@nic.in)>  
**Sent:** Monday, August 7, 2023 9:36:02 AM  
**Subject:** Re: Draft MOM of the 44th EAC (Thermal) meeting held on 20.7.2023-reg

Dear Dr Yogendra ji  
Draft Minutes of 44th EAC( Thermal)  
Meeting held on 20th July 2023 are fine with me and approved for further needful action.  
Thank you  
G P Kundargi