

# BRIEF SUMMARY

## INTRODUCTION

The project proponent, Madhya Pradesh Power Generating CO. Limited (MPPGCL), is a company incorporated on 22.11.2001 and started functioning independently from 01.06.2005. Government of Madhya Pradesh approved MPPGCL as a generating company to undertake implementation of new power project. The Satpura Thermal Power Station, Sarni is a part of MPPGCL. At present, STPS MPPGCL Sarni is having total installed generating capacity of 1330 MW while proposed generation capacity is 660 MW. The company is in business of generation of electricity from coal based Thermal Power Plant & from Hydro Power Plants.

5x 62.5 MW units of PH-I, STPS-Sarni were of very old design & completed their service life. Therefore they have been decommissioned & dismantled. Now, technology has improved and supercritical coal-based units with higher capacity, higher efficiency, lower auxiliary power consumption and lower heat rates have been developed. Now, MPPGCL intends to install 1x 660 MW supercritical unit at the location of dismantled units. At present, the total installed generating capacity at Satpura TPS is 1330 MW, comprising 1x200MW, 3x210MW, and 2x250 MW.

As per EIA Notification 2006 as amended, thermal power plants having more than 500 MW production capacity falls under Project Activity 1(d), category A, and for the project under consideration, an environmental clearance is to be taken from MOEF&CC. This PFR is prepared as an attachment to Form 1 for obtaining TOR for preparation of EIA Report needed for environmental clearance.

## SALIENT FEATURES OF THE PROJECT

The **Salient Features** of the projects are shown in the table below.

<b>1.</b>	<b>Name of the proponent</b>	:	Madhya Pradesh Power Generating Company Limited (MPPGCL)		
<b>2.</b>	<b>Project</b>	:	Installation of 1x660 MW Supercritical Thermal Power Unit No. 12, PH-V at Satpura Thermal Power Station, MPPGCL, Sarni, Distt. Betul, M.P.		
<b>3.</b>	<b>Plant Capacity</b>	:	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
			1330 MW	660 MW	1990 MW
<b>4.</b>	<b>Plant Configuration</b>	:	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
			3x210 MW; 1x200 MW; 2x250 MW	1x660 MW	1x200 MW; 3x210 MW; 2x250 MW; 1x660 MW

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**PROJECT PROPONENT**  
Madhya Pradesh Power Generating Co. Ltd (MPPGCL)

5.	<b>Location</b>	: Within the premises of existing Satpura Thermal Power Station (STPS) <table border="1" data-bbox="719 279 1411 470"> <tr> <td><b>State</b></td> <td colspan="2">Madhya Pradesh</td> </tr> <tr> <td><b>District</b></td> <td colspan="2">Betul</td> </tr> <tr> <td><b>Tehsil</b></td> <td colspan="2">Ghoradongri</td> </tr> <tr> <td><b>Village</b></td> <td colspan="2">Brahmanwada Ryt</td> </tr> <tr> <td><b>Plot No.</b></td> <td colspan="2">1</td> </tr> </table>	<b>State</b>	Madhya Pradesh		<b>District</b>	Betul		<b>Tehsil</b>	Ghoradongri		<b>Village</b>	Brahmanwada Ryt		<b>Plot No.</b>	1																																																													
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6.	<b>Plant Area Coordinates</b>	: <table border="1" data-bbox="719 552 1411 1577"> <thead> <tr> <th>Point</th> <th>Latitude</th> <th>Longitude</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="text-align: center;"><b>Cooling Tower</b></td> </tr> <tr> <td>1A</td> <td>22° 06' 51.57" N</td> <td>78° 10' 38.18" E</td> </tr> <tr> <td colspan="3" style="text-align: center;"><b>Proposed 660MW Plant</b></td> </tr> <tr> <td>A</td> <td>22° 06' 38.94" N</td> <td>78° 10' 19.02" E</td> </tr> <tr> <td>B</td> <td>22° 06' 41.88" N</td> <td>78° 10' 21.49" E</td> </tr> <tr> <td>C</td> <td>22° 06' 52.49" N</td> <td>78° 10' 27.59" E</td> </tr> <tr> <td>D</td> <td>22° 06' 56.59" N</td> <td>78° 10' 19.01" E</td> </tr> <tr> <td>E</td> <td>22° 06' 46.61" N</td> <td>78° 10' 12.90" E</td> </tr> <tr> <td>F</td> <td>22° 06' 42.09" N</td> <td>78° 10' 13.71" E</td> </tr> <tr> <td colspan="3" style="text-align: center;"><b>Ash Pond for Proposed Unit</b></td> </tr> <tr> <td>A</td> <td>22° 06' 34.44" N</td> <td>78° 09' 39.00" E</td> </tr> <tr> <td>B</td> <td>22° 06' 22.92" N</td> <td>78° 09' 39.39" E</td> </tr> <tr> <td>C</td> <td>22° 06' 19.28" N</td> <td>78° 09' 37.96" E</td> </tr> <tr> <td>D</td> <td>22° 06' 19.14" N</td> <td>78° 09' 31.39" E</td> </tr> <tr> <td>E</td> <td>22° 05' 54.64" N</td> <td>78° 09' 28.88" E</td> </tr> <tr> <td>F</td> <td>22° 05' 40.50" N</td> <td>78° 09' 14.16" E</td> </tr> <tr> <td>G</td> <td>22° 05' 46.74" N</td> <td>78° 09' 14.16" E</td> </tr> <tr> <td>H</td> <td>22° 05' 53.33" N</td> <td>78° 09' 07.24" E</td> </tr> <tr> <td>I</td> <td>22° 05' 59.68" N</td> <td>78° 09' 00.06" E</td> </tr> <tr> <td>J</td> <td>22° 06' 06.41" N</td> <td>78° 08' 57.49" E</td> </tr> <tr> <td>K</td> <td>22° 06' 12.36" N</td> <td>78° 09' 00.87" E</td> </tr> <tr> <td>L</td> <td>22° 06' 28.42" N</td> <td>78° 09' 16.93" E</td> </tr> <tr> <td>M</td> <td>22° 6' 27.35" N</td> <td>78° 9' 22.24" E</td> </tr> <tr> <td>N</td> <td>22° 6' 34.66" N</td> <td>78° 9' 24.85" E</td> </tr> </tbody> </table>	Point	Latitude	Longitude	<b>Cooling Tower</b>			1A	22° 06' 51.57" N	78° 10' 38.18" E	<b>Proposed 660MW Plant</b>			A	22° 06' 38.94" N	78° 10' 19.02" E	B	22° 06' 41.88" N	78° 10' 21.49" E	C	22° 06' 52.49" N	78° 10' 27.59" E	D	22° 06' 56.59" N	78° 10' 19.01" E	E	22° 06' 46.61" N	78° 10' 12.90" E	F	22° 06' 42.09" N	78° 10' 13.71" E	<b>Ash Pond for Proposed Unit</b>			A	22° 06' 34.44" N	78° 09' 39.00" E	B	22° 06' 22.92" N	78° 09' 39.39" E	C	22° 06' 19.28" N	78° 09' 37.96" E	D	22° 06' 19.14" N	78° 09' 31.39" E	E	22° 05' 54.64" N	78° 09' 28.88" E	F	22° 05' 40.50" N	78° 09' 14.16" E	G	22° 05' 46.74" N	78° 09' 14.16" E	H	22° 05' 53.33" N	78° 09' 07.24" E	I	22° 05' 59.68" N	78° 09' 00.06" E	J	22° 06' 06.41" N	78° 08' 57.49" E	K	22° 06' 12.36" N	78° 09' 00.87" E	L	22° 06' 28.42" N	78° 09' 16.93" E	M	22° 6' 27.35" N	78° 9' 22.24" E	N	22° 6' 34.66" N	78° 9' 24.85" E
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7.	<b>Topography</b>	: Irregular Plain																																																																											
8.	<b>Land Type</b>	: Government																																																																											
9.	<b>Toposheet No.</b>	: 55F/16, 55G/13, 55J/3, 55J/4, 55J/7, 55J/8 & 55K/1																																																																											
10.	<b>Category</b>	: A																																																																											
11.	<b>Land Requirement</b>	: 33 ha to be located within existing plant of 3383.17 ha.																																																																											
12.	<b>Product</b>	: Electricity																																																																											

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**PRE-FEASIBILITY REPORT FOR INSTALLATION OF SATPURA THERMAL POWER STATION UNIT NO. 12 (1X 660 MW), PH- V AT SARNI, DISTT. BETUL (M.P.)**

**BRIEF SUMMARY**

13.	<b>Nearest Railway Station &amp; Distance</b>	:	Ghoradongri Railway Station on Nagpur – Itarsi main railway line of central railway		
14.	<b>Nearest Airport</b>	:	Bhopal: 180 km		
15.	<b>Nearest Port</b>	:	Mumbai: 700 km		
16.	<b>Land Requirement (in Ha)</b>	:	<b>Within the plant boundary</b>	<b>Area for Proposed Plant (in ha)</b>	
			Main plant & equipment	10.0	
			Switchyard	2	
			Water facilities including cooling tower	9	
			Coal handling plant	12	
			Greenbelt	41	
			<b>Total</b>	<b>74</b>	
			Ash dyke area	Existing	
17.	<b>Meteorological data</b>				
	<b>Ambient temperature</b>				
	<b>Daily maximum (mean)</b>	:	48.5 °C		
	<b>Daily minimum (mean)</b>	:	6.5 °C		
	<b>Relative humidity</b>				
	<b>Maximum</b>	:	96%		
	<b>Minimum</b>	:	12%		
	<b>Rainfall</b>				
	<b>Maximum per annum</b>	:	1200 mm to 2000 mm		
	<b>Average per annum</b>	:	1210 mm		
	<b>Wind Velocity</b>	:	3.9 m/s		
18.	<b>Source of Water</b>	:	Satpura Reservoir on Tawa River.		
19.	<b>Water Requirement</b>	:	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
			4090.18 m <sup>3</sup> /hr	1977 m <sup>3</sup> /hr	6067.18 m <sup>3</sup> /hr
20.	<b>Cooling System</b>	:	Closed cycle cooling system with Natural Draft Cooling Tower		
21.	<b>Primary Fuel &amp; Source</b>	:	Coal from WCL or SECL coal fields or as per the linkage given by MOC/SLC		
22.	<b>Support Fuel &amp; Source</b>	:	HFO/LDO from nearest refinery/oil depots		
23.	<b>Fuel Requirements</b>	:			
	<b>i. Primary Fuel / Coal</b>	:	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
			4.795 MTPA (PH-2&3)	2.167 MTPA (PH-4)	3.25 MTPA (PH-5)
					10.212 MTPA (PH-2,3,4&5)
	<b>ii. Support Fuel (LDO/HFO)</b>	:	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
			6500 KL (PH-2&3)	1800 KL (PH-4)	2730 KL (PH-5)
					11030 KL (PH-2,3,4&5)
24.	<b>Transportation</b>				
	<b>i. Coal</b>	:	By Railway System / By Road System		

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	<b>ii. Support fuel</b>	:	By Railway System/By Road System		
<b>25.</b>	<b>Steam Generator</b>	:	Steam Generator will be of supercritical pressure parameters, balanced draft furnace, single reheat, radiant, dry bottom type, suitable for outdoor installation designed for firing pulverized coal as main fuel.		
<b>26.</b>	<b>Steam Turbine</b>	:	The Steam Turbine will be multi cylinders, tandem compound single reheat, regenerative, condensing unit directly coupled to AC Generator giving a continuous rated output at generator terminals		
<b>27.</b>	<b>Station Operation Philosophy</b>	:	Base Load		
<b>28.</b>	<b>Chimney</b>	:	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
			1 Bi-flue Chimney of 275m and 2 chimney of 160 m.	One single flue chimney of height between 100m. to 125m.	1 bi-flue Chimney of 275m, 2 chimney of 160 m and 1 chimney height between 100m. to 125m.
<b>29.</b>	<b>Power Evacuation plan</b>	:	<b>Existing</b>	<b>Proposed</b>	<b>Total</b>
			Switchyard of 220 KV	Through 400 KV transmission lines.	Through 220 KV and 400 KV transmission lines.
<b>30.</b>	<b>Project Commissioning Schedule</b>	:	45 months from date of issuing the order for main power block (BTG package).		
<b>31.</b>	<b>Economical Life of the Plant</b>	:	25 years		
<b>32.</b>	<b>Manpower</b>		<b>Existing</b>	<b>Proposed</b>	
			1320	75	
<b>33.</b>	<b>Area for Greenbelt</b>		<b>Existing</b>	<b>Proposed</b>	
			271	41	
<b>32.</b>	<b>Estimated Project Cost</b>	:	Rs. 4616.36 Crores		